West Virginia University is a land-grant, research institution founded in 1867. WVU is a student-centered learning community meeting the changing needs of West Virginia and the nation through teaching, research, service, and technology.

The West Virginia University Undergraduate Catalog 2009–2010 is a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. In order to reach the goals and fulfill the mission of the University, the courses, requirements, and regulations contained herein are subject to continuing review and change by the West Virginia Higher Education Policy Commission, the WVU Board of Governors, University administrators, and the faculties of the schools and colleges. The University, therefore, reserves the right to change, delete, supplement, or otherwise amend the information, course offerings, requirements, rules, and policies contained herein without prior notice. The indicia depicted are registered trademarks of West Virginia University.

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West Virginia University Colleges and Schools

College of Business and Economics
http://www.be.wvu.edu/

College of Creative Arts
http://www.ccarts.wvu.edu/

College of Engineering and Mineral Resources
http://www.cemr.wvu.edu/

College of Human Resources and Education
http://www.hre.wvu.edu/

College of Law
http://law.wvu.edu/

College of Physical Activity and Sport Sciences
http://www.wvu.edu/~physed/

Davis College of Agriculture, Forestry, and Consumer Sciences
http://www.davis.wvu.edu/

Eberly College of Arts and Sciences
http://eberly.wvu.edu/

Perley Isaac Reed School of Journalism
http://journalism.wvu.edu/

Potomac State College of West Virginia University
http://www.potomacstatecollege.edu/

School of Dentistry
http://www.hsc.wvu.edu/sod/

School of Medicine
http://www.hsc.wvu.edu/som/

School of Nursing
http://www.hsc.wvu.edu/son/

School of Pharmacy
http://www.hsc.wvu.edu/sop/

West Virginia University Institute of Technology
http://www.wvutech.edu/
West Virginia University Calendar 2009–10*

Fall 2009

August 21 .................................................................General Registration
August 22 .................................................................First Day of Ramadan (Day of Special Concern)
August 24 .................................................................On Campus First Day of Classes
August 24 .................................................................Late Registration Fee in Effect for All Students
September 7 ..............................................................Labor Day Recess
September 19 ...........................................................Rosh Hashanah (Day of Special Concern)
September 20 ...........................................................Eid-al-Fitr End of Ramadan (Day of Special Concern)
September 28 ...........................................................Yom Kippur (Day of Special Concern)
October 9 .................................................................Mid-Semester
October 15 ...............................................................Mid-Semester Reports Due
October 30 ...............................................................Last Day to Drop a Class
November 12 ............................................................Birth of Bahu’ullah (Day of Special Concern)
November 21–29 ....................................................Thanksgiving Recess
December 10 ...........................................................Last Day to Withdraw from Classes
December 11 ...........................................................Last Day of Classes
December 11 ...........................................................ETD Submission Deadline
December 13 ...........................................................December Convocation
December 14–19 .....................................................Final Examination Week
December 20 ...........................................................Winter Break Begins
December 28 ...........................................................Degree Conferring Date

Spring 2010

January 6–8 .................................................................New Student Orientation
January 8 .................................................................General Registration
January 11 ...............................................................On Campus First Day of Classes
January 11 ...............................................................Late Registration Fee in Effect for All Students
January 15 ...............................................................Last Day to Register, Add New Courses, Make Section Changes,
                                                                                          Change Pass/Fail and Audit
January 18 ..............................................................Martin Luther King's Birthday Recess
February 14 ............................................................Chinese New Year (Day of Special Concern)
February 26 ............................................................Mid-Semester
March 4 .................................................................Mid-Semester Reports Due
March 19 ...............................................................Last Day to Drop a Class
March 21 ...............................................................Naw-Ruz (Day of Special Concern)
March 27-April 2 .....................................................Spring Recess
April 2 .................................................................Friday Before Easter (Recess)
April 21 .................................................................Feast of Rivdan (Day of Special Concern)
April 29 .................................................................Last Day to Withdraw From University
May 3–8 .................................................................Final Examination Week
May 10 .................................................................Grade Reports for All Graduates Due in Deans’ Office
May 12 .................................................................Deans’ Reports on Graduates Due
May 15 .................................................................Alumni Day
May 16 .................................................................Commencement

12-Week Summer Session

May 17 .................................................................Registration
May 17 .................................................................On-Campus First Day of Classes
May 31 .................................................................Memorial Day Recess
June 25 .................................................................Final Exam for First Six-Week Session
July 5 .................................................................Independence Day Recess
August 6 ...............................................................Final Exam for 12-Week Session
August 13 ...........................................................Degree Conferring Date (No Ceremonies)

Note: Late registration fee in effect on the second day of class for all classes. You may withdraw from a summer class anytime before the last day of the class.

*See http://calendar.wvu.edu for academic calendars.
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John Estep, Richwood, Secretary  
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Steve Kite, Morgantown, Faculty Representative  
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*Corrected as of February 2009.

West Virginia University is governed by the West Virginia Higher Education Policy Commission and the WVU Board of Governors.

West Virginia University is a member of the Higher Learning Commission of the North Central Association of Colleges and Schools. The University's educational programs are accredited by the Higher Learning Commission and by the appropriate accreditation agencies for professional programs.

West Virginia University is an Equal Opportunity/Affirmative Action Institution. The University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin in the administration of any of its educational programs or activities, or with respect to admission or employment. Further, faculty, staff, students, and applicants are protected from retaliation for filing complaints or assisting in an investigation under the University’s Equal Opportunity/Affirmative action Plan. Inquiries regarding the University’s non-discrimination policy may be sent to the director, Affirmative Action Office/Equal Employment Opportunity Programs, West Virginia University, Office of the President.
Frequently Contacted Offices

Academic Programs
Provost and Vice President for Academic Affairs and Research
West Virginia University
P.O. Box 6203
Morgantown, WV 26506-6203
Phone: (304) 293-2641 Fax: (304) 293-7554
http://www.wvu.edu/~acadaff/

Admissions and Records
West Virginia University
P.O. Box 6009
Morgantown, WV 26506-6009
Phone: (304) 293-2121 Fax: (304) 293-3080
http://www.arc.wvu.edu/

Graduate Programs
Office of Graduate Education
West Virginia University
P.O. Box 6203
Morgantown, WV 26506-6203
Phone: (304) 293-7173 Fax: (304) 293-7554
http://www.wvu.edu/~graduate

Housing and University Apartments
Director, Housing and University Apartments
West Virginia University
P.O. Box 6430
Morgantown, WV 26506-6430
Phone: (304) 293-4491 Fax: (304) 293-4825
http://housing.wvu.edu

Scholarships, Work-Study, and Veterans Educational Assistance
Student Financial Aid Office
West Virginia University
P.O. Box 6004
Morgantown, WV 26506-6004
Phone: (304) 293-5242 Fax: (304) 293-4890
http://www.finaid.wvu.edu

Student Life
Dean of Students
West Virginia University
P.O. Box 6411
Morgantown, WV 26506-6411
Phone: (304) 293-5611 Fax: (304) 293-7028
http://www.wvu.edu/~studlife
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Bernard R. Cooper, Claude W. Benedum Professor of Physics, Emeritus
William H. Miernyk, Claude W. Benedum Professor of Economics, Emeritus
Hayne W. Reese, Centennial Professor of Psychology, Emeritus
Carl Rotter, Eberly Family Professor for Outstanding Teaching, Emeritus
General Information

Established in 1867, West Virginia University is West Virginia’s flagship institution of higher education. It is the state’s only research, doctoral degree-granting, land-grant university. WVU provides high-quality programs of instruction, offering nearly 200 degree programs at the undergraduate, graduate, and first-professional levels, including the state’s only law school. WVU fosters basic and applied research and scholarship and engages in and encourages other creative and artistic work. A wide range of health science programs are taught at the WVU Robert C. Byrd Health Sciences Center through schools of medicine, dentistry, nursing, and pharmacy, including allied health programs and graduate programs in basic health sciences.

WVU combines the breadth of academic opportunities offered by a major research institution with the atmosphere of a small school. The undergraduate student/faculty ratio is approximately 23:1. Enrollment in one of the University’s 15 colleges and schools offers students the warmth and friendliness of a small academic community. The University encourages diversity and promotes social justice in all of its activities.

The downtown campus is linked to the Evansdale campus and the Robert C. Byrd Health Sciences Center by the Personal Rapid Transit (PRT) system, which uses automated, electric-powered cars that operate on a concrete-and-steel guideway. The PRT permits quick and easy access to major locations within the University and downtown Morgantown.

The diversity of our student body is evident in the Fall 2008 enrollment of 28,840 students, with all 55 counties of West Virginia, 50 states, and nearly 100 other countries represented. WVU has produced 25 Rhodes Scholars, 19 Truman Scholars, 30 Goldwater Scholars, and two British Marshall Scholars.

Only ten other state universities share WVU’s complex mission as a land-grant, research-oriented, public university with a comprehensive health sciences center. The term “land-grant” derives from the Congressional act of 1862 that gave federally owned land to each state, to be sold for funds to establish colleges offering programs in agriculture and engineering. Since its founding in 1867, WVU has developed into the center of graduate and professional education, research, and extension programs in West Virginia.

WVU campuses combine traditional and modern architectural styles; nine full buildings, a portion of White Hall on the downtown campus, and two buildings at Coopers Rock are listed on the National Register of Historic Places. Many of these original buildings have been restored and renovated.

The WVU’s Libraries on-site collections include 1.6 million books and 34,131 current journal subscriptions. In keeping with WVU’s mission of technological excellence, the WVU Libraries offer students high-speed public use computers, ethernet connections, wireless access points, electronic access to more than 134 networked databases, and more than 46,840 electronic journals and 6,168 electronic books. Through the Libraries’ membership in the Pennsylvania Academic Library Consortium, WVU students and faculty have access to nearly 30 million volumes through 75 member institutions. The West Virginia and Regional History Collection houses manuscripts, folk music, newspapers, photographs, and public records, and is the foremost historical library and archive in the state. The Libraries’ Appalachian Collection is one of the nation’s best resources for Appalachian regional culture.

WVU programs and services are accessible throughout West Virginia. Potomac State College of West Virginia University and West Virginia University Institute of Technology are fully-integrated units located in Keyser and Montgomery respectively. WVU operates the Charleston and Eastern Divisions of the Robert C. Byrd Health Sciences Center. In addition, there are six Extended Learning Regional Centers at Charleston, Clarksburg, Parkersburg, Morgantown, Shepherdstown, and Wheeling.
WVU operates eight experimental farms in Hardy, Jefferson, Monongalia, Monroe, and Preston counties; five experimental forests in Monongalia, Preston, Randolph, and Wetzel counties; and the state 4-H Camp and a museum of mid-nineteenth century life at Jackson’s Mill.

The Mission of West Virginia University

Founded in 1867, West Virginia University is the flagship land-grant, doctoral degree-granting research university in the state of West Virginia. As such, the institution occupies a unique position within the state.

West Virginia University’s primary mission is to provide high-quality programs of instruction at the undergraduate, graduate, and professional levels; to stimulate and foster both basic and applied research and scholarship; to engage in and encourage other creative and artistic work; and to bring the resources of the University to all segments of society through continuing education, extension, and public service activities.

Opportunities to conduct pioneering research and scholarship help attract high quality faculty and students. Students and faculty work together to create exciting and productive paths for investigation and development. WVU nurtures these symbiotic interactions to build intellectual, social, and economic development for all of West Virginia.

WVU’s special responsibility is to seek out, challenge, educate, and help create opportunities for those West Virginia citizens who can benefit from its programs, especially those who have demonstrated high achievement or who possess excellent potential.

West Virginia University recognizes that diversity enriches the institution and the society it serves. The University is committed to social justice and to practicing the principles of equality of opportunity and affirmative action.

The Range of University Activity

Currently, WVU, WVU Institute of Technology, and Potomac State College of WVU enroll over 31,000 students. WVU has an annual budget in excess of $800 million.

Instruction

Degrees are awarded at the baccalaureate, master’s, doctoral, and professional levels. The University offers nearly 200 programs through the departments/divisions of 15 colleges and schools:

- Potomac State College.
- The Davis College of Agriculture, Forestry, and Consumer Sciences including the Divisions of Animal and Nutritional Sciences, Family and Consumer Sciences, Forestry, Plant and Soil Sciences, and Resource Management.
- The College of Business and Economics, including the Divisions of Accounting, Business Administration, Economics, and Finance.
- The College of Creative Arts, including the Divisions of Art, Music, and Theatre and Dance.
- The College of Engineering and Mineral Resources, including the Departments of Chemical Engineering, Civil and Environmental Engineering, Computer Science and Electrical Engineering, Industrial and Management Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, and Petroleum and Natural Gas Engineering.
- The College of Human Resources and Education, including the Departments of Advanced Educational Studies; Counseling, Rehabilitation Counseling, and Counseling Psychology; Educational Theory and Practice; and Speech Pathology and Audiology.
- The College of Law.
• The College of Physical Activity and Sport Sciences.
• The Eberly College of Arts and Sciences, including the School of Applied Social Sciences (Public Administration, Social Work, and Sociology and Anthropology); the Departments of Biology, Chemistry, Communication Studies, English, Foreign Languages, Geology and Geography, History, Mathematics, Philosophy, Physics, Political Science, Psychology, Religious Studies, Statistics, and Women’s Studies; and programs in Africana Studies, Biochemistry, Environmental Geoscience, Forensic and Investigative Science, Industrial Mathematics and Statistics, International Studies, Italian Studies, Liberal Arts and Sciences, Native American Studies, and Slavic Studies.
• The Perley Isaac Reed School of Journalism, including sequences in Advertising, Print Journalism, Public Relations, Television Journalism, and Visual Journalism.
• The School of Dentistry, including the Departments of Dental Hygiene, Endodontics, and Orthodontics.
• The School of Medicine, including the Departments of Anesthesiology, Behavioral Medicine and Psychiatry, Biochemistry and Molecular Pharmacology, Community Medicine, Emergency Medicine, Exercise Physiology, Family Medicine, Human Performance and Applied Exercise Science, Medicine, Microbiology, Immunology, and Cell Biology, Neurobiology and Anatomy, Neurology, Neurosurgery, Obstetrics and Gynecology, Occupational Therapy, Ophthalmology, Orthopedics, Otolaryngology Head and Neck Surgery, Pathology, Pediatrics, Physiology and Pharmacology, Radiology, Surgery, and Urology, the HSC divisions in Charleston and the Eastern Panhandle.
• The School of Nursing.
• The School of Pharmacy.
• West Virginia University Institute of Technology.

The University conducts graduate studies in Morgantown and in five off-campus regions and continues to develop telecommunication resources to expand its off-campus graduate instruction.

Research and Scholarship

Research, scholarship, or creative activity of distinction is expected within every school or college of the University. Indeed, most of the advanced research and scholarship carried out in West Virginia finds its home at West Virginia University. The assessment of the quality both of research and teaching is given heavy weight in tenure, promotion, and other personnel decisions affecting faculty members.

The University supports and is supported by numerous institutes for the promotion of interdisciplinary studies and research. These units include the National Research Center for Coal and Energy, the Regional Research Institute, the Mary Babb Randolph Cancer Center, the Center on Aging, the Institute for Public Affairs, the Center for Women’s Studies, the Bureau of Business and Economic Research, the Harley O. Staggers National Transportation Center, the West Virginia Water Research Institute, the Appalachian Hardwood Center, the Concurrent Engineering Research Center, the Institute of Occupational and Environmental Health, the Center for Excellence in Women's Health, and others.
Service

By virtue of its service mission as a land-grant institution and its position as the major center of research and development in West Virginia, the University has a responsibility to work with business and government leaders to promote the economic development of West Virginia. Through credit and non-credit educational programs and working partnerships with industry, government, and public schools, the University plays an important role in all geographic regions in West Virginia.

WVU contributes to the development and enhancement of West Virginia’s economic, educational, social, and health status through its programs of instruction and research and through its programs of outreach. To serve the State and its people, the University offers instructional and service programs in every county through the West Virginia University Extension Service. Additionally, the WVU Agricultural and Forestry Experiment Station sponsors applied and basic research throughout West Virginia, directly benefiting industries critical to the state. The West Virginia University Health Sciences Center (HSC) serves the people of all 55 counties of West Virginia through direct patient care both at its campuses and at outreach clinics located throughout the state. The HSC maintains a cancer information service, a drug information service, and a poison control center. It provides extensive support services for rural physicians, including a free telephone consultation program, specialty care support, monthly educational opportunities, and computerized access to resources in the Health Sciences Center Library. The health professionals of the HSC conduct basic research focusing on the specific needs of West Virginians.

Commitment to Social Justice

West Virginia University’s role as the flagship doctoral degree-granting, research, land-grant university in the state of West Virginia gives the institution a special responsibility as a leader in the area of social justice. The pursuit of truth underlying the University’s mission focuses attention on issues of diversity, power, and perspective so that students, faculty, and staff may study and work in a climate of academic freedom and social responsibility, developing the skills, knowledge, and self-esteem necessary for participation as world citizens.

Equal opportunity is a fundamental goal in a democratic society, and WVU shares the responsibility for achieving that equity. The institution is committed, therefore, to ensuring that all persons, regardless of race, class, gender, religion, ethnicity, or economic background benefit from the many opportunities the institution provides.

In keeping with this responsibility, members of the academic community are expected to demonstrate civility and respect for all persons; to understand and appreciate all persons; to express that perspective in every dimension of the institution’s life and mission; and to work cooperatively, representing not only the interests of their own groups but also those of the wider community.

The importance of WVU’s social justice program goes beyond the benefits that accrue to any one person or group, to the strengthening of the University itself and the enhancing of its ability to accomplish the mission with which it has been entrusted by the people and the State of West Virginia.
Government and Organization of WVU

Effective July 1, 2001, the West Virginia Board of Governors is vested by law with the authority for the control and management of the University. The board includes 12 lay members, one faculty member, and one student member. The University president, appointed by the Board of Governors, is the chief executive officer of the University.

The West Virginia Higher Education Policy Commission is responsible for policy development and other statewide issues. The commission consists of seven members appointed by the governor, the secretary of education and the arts, and the state superintendent of schools.

The Faculty Senate is the vehicle for faculty participation in the governance of the University. It is a legislative body with original jurisdiction over all matters of academic interest and educational policy that concern the entire University or affect more than one college or school. The senate's decisions are subject to review and approval by the president and the Board of Governors. Senators are elected by members of the University faculty to represent their colleges and other constituencies. Each senator represents 20 members of the University faculty. The senate is presided over by an elected chair.

Three faculty members serve on the Vice Presidents' Advisory Committee for Promotion and Tenure. The president meets regularly with the cabinet and monthly with the Faculty Senate Executive Committee, the Staff Council, and Student Government Association. The University Faculty Assembly includes the president as presiding officer, professors, associate professors, assistant professors, instructors holding appointments on a full-time basis, and other persons engaged in full-time professional activities. The assembly meets once a year.

West Virginia University has a tradition of strong student administration that represents student opinion to the administration and faculty. Student administration has three main units: the executive branch, the board of governors, and the judicial board. Students also serve on University-wide committees and on the Mountainlair Advisory Council.

The Staff Council is an advisory council to the president of the University and a means for all classified employees to express their opinions about job conditions, fringe benefits, employee relations, or other areas that affect their jobs.

Local 814 of the Laborers’ International Union of North America, AFL-CIO, represents employees throughout the University and its affiliates. These employees are in craft/maintenance, service, clerical, and technical job categories, with a wide variety of job classifications. Laborer's Local 814 is the only recognized union at the University by agreement through the Memorandum of Accord.
**Morgantown Area**

Greater Morgantown has 28,000 permanent residents; Monongalia County, 84,000. WVU is the largest single employer in the county. On the east bank of the Monongahela River, which flows north to Pittsburgh, Morgantown is situated on rugged terrain in the Appalachian highlands. The altitude varies from 960 feet above sea level in Morgantown to 2,100 feet at nearby Cooper’s Rock. The area’s temperate climate has four distinct seasons of about equal length. Morgantown averages 40 inches of precipitation a year. Autumn is beautiful when the leaves turn red, orange, and yellow. A north-south interstate highway (I-79) is one mile west of Morgantown. U.S. 19 and U.S. 119 pass through Morgantown in a north-south direction. Interstate 68, an east-west highway, links I-79 at Morgantown to I-81 and I-70 in the Cumberland/Hagerstown, Maryland, region.

Because of WVU’s resources, the Morgantown area is a major research center in the Appalachian region. Five federal agencies have research facilities in the area. The Department of Health and Human Services (Appalachian Laboratory for Occupational Safety and Health), The Forest Service (Forestry Sciences Laboratory), the National Energy Technology Laboratory of the Department of Energy, the Natural Resource Conservation Service (West Virginia headquarters), and the National Institute for Occupational Safety and Health.

**Housing and University Apartments**

The University owns and operates 16 residence halls with a capacity of approximately 5,500. All single, first-year students (including transfer students with freshman class status) are required to live in University housing. Exceptions include students living at home with parents within commuting distance, students age 21 or older, married students, and students with children. The Assignments Office, M63 Brooke Tower, (304) 293-2811, provides information about on-campus, undergraduate housing. The Department of Housing and Residence Life also operates apartment complexes. Although primarily for graduate students, the Medical Center Apartments accommodate others, and students age 21 or older, based on availability. Information about University-owned apartments is available by calling (304) 293-5840. Online at http://housing.wvu.edu.

**Office of Information Technology**

The Office of Information Technology (OIT) provides support for academic, research, and instructional technology, throughout West Virginia University. This support includes, but is not limited to, training, technical consulting, research support, and planning in the academic applications of information technology. OIT operates computer labs on the Downtown and Evansdale campuses. These labs provide students, faculty, and staff access to computing resources including word processing, spreadsheet, database, and graphics software, e-mail, and the Internet. They also provide access to selected instructional software programs for specific courses. Additionally, OIT supports the application and integration of technology into the instructional program of the University. This support includes technical assistance regarding classroom technology, the development of computer-based instructional materials and systems, the Instructional Technology Resource Center, and the operation of a multimedia distribution system. Call (304) 293-2444 x 1 or e-mail: oithelp@mail.wvu.edu for more information about OIT services and programs.
Admission

WVU provides excellent educational programs for well-prepared students. The goal of the University's admission policy is to select applicants who will succeed academically and socially. If space is limited, the better-prepared students are admitted.

WVU enrolls a diverse student population. While preference is given to West Virginia residents, qualified students from other states and countries are encouraged to apply. The University is committed to the goal of equal educational opportunity for all students: no candidate is denied admission because of race, religion, color, sex, sexual orientation, marital status, age, handicap or disability, veteran status, or national origin.

The primary emphasis in admissions is on academic promise. All of the required materials submitted by the applicant—application, transcripts, and test results—are reviewed carefully.

You may receive an application for admission at many local high schools, access it online at http://admissions.wvu.edu/undergraduate/, or write to: Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009. Telephone (304) 293-2121; e-mail: go2wvu@wvu.edu.

Some colleges and programs have admission standards that exceed the minimal requirements for admission to the University. For example, admission to the forensics major in the Eberly College of Arts and Sciences, to programs in the College of Business and Economics, and to the professional programs in the Division of Physical Therapy and the School of Pharmacy, among others, is competitive, and preference is given to West Virginia residents. Admission to the University does not ensure admission into a specific major or to a specific school or college.

Freshman Admissions

Complete the application and mail it to WVU at the address above. You must also submit an official high school transcript and proof of immunizations. When you graduate, ask your counselor to send your final high school transcript verifying graduation to the Office of Admissions and Records. Your final high school transcript must reflect a graduation date prior to the first day of classes of the term that you plan to enter WVU.

Admission Requirements

To be considered for freshman admission, a student must successfully complete the following high school credits:

- 4 units of English (including grammar, composition, and literature)
- 3 units of social studies (including U.S. history)
- 4 units of college preparatory mathematics (three units must be algebra I and II and plane geometry)
- Select majors may require a fourth math considered to be higher than Algebra II.
- 3 units of science (ALL units must be laboratory science.)
- 2 units of the same foreign language
- 1 unit of fine arts

These requirements are in addition to the GPA and test score criteria needed to review the applications, as noted below.

Grade Averages and Test Scores

Your high school grade point average and your comprehensive tests are the major criteria used to determine your admission to WVU. We accept either ACT (American College Testing) or SAT (Scholastic Aptitude Test) scores.

As a high school graduate from West Virginia, you are eligible to be considered for admission if you have a 2.0 grade point average and either a composite ACT score of 19 or a combined Math and Critical Reading SAT score of 910. If you are a non-resident, you are eligible to be considered for admission if you have a 2.25 overall grade point average and either an ACT composite score of 21 or a combined Math and Critical Reading SAT score of 990. If space is available and you have the required high school units, the GPA, and the test scores, you will be admitted. Therefore, we encourage eligible students to apply as soon as possible after September 15 of their senior year. If you do not meet one of the requirements,
you may still apply, and the admissions review committee will review your application. Please submit a written statement telling of any extenuating circumstances. You may be assured that each application is reviewed individually and given full consideration.

GED
If you have completed a General Equivalency Degree (GED) with an average standard score of 2250 (450) or above, you should request that the State Department of Education mail copies of your scores to the Office of Admissions and Records. Request that the high school you last attended send a copy of your transcript to WVU, listing the coursework you completed.

If you graduated fewer than five years before your admission request, you must present ACT or SAT scores with your application. If it is more than five years since your class graduated from high school or you earned your GED diploma and you have not attended another college, we may waive some of the admission requirements.

ACCESS (Attaining College Credits and Experiences while in Secondary School)
Academically talented high school students who have completed their junior year with a 3.0 GPA may be admitted to take college courses before high school graduation. An ACCESS application for admission must be submitted along with the high school transcript and a letter of permission from the parent(s) or guardian(s) and the high school counselor or principal. Coursework completed at the University must be at a level beyond that available in the high school setting.

Early Admission
WVU will select a limited number of high school seniors who are academically high achievers and socially prepared to enter college before high school graduation. If you have completed your junior year in high school with at least a GPA of 3.5 and a 26 enhanced ACT composite or 1170 on the SAT, you may apply. You must also have completed all requirements for graduation from high school except senior English.

You will be asked to submit an admission application in addition to academic records required for freshmen as described in the Freshman Admissions section of this catalog. You must have your principal or guidance counselor submit a letter supporting your application. Your parent(s) or guardian must also submit a letter of support for your application.

After the above requirements are met, you will be interviewed for the Early Admissions Program. Accepted students are admitted as full-time students with all of the rights and privileges offered other students.

Veterans
Veterans not meeting minimal admission requirements may be reviewed for admission by the Admissions Review Committee. If you want information about the various forms of aid for veterans, contact the Veterans Advocate at the Student Financial Aid Office or write to: Financial Aid Office, 2nd floor Mountainlair, P.O. Box 6004, Morgantown, WV 26506-6004; phone: (304) 293-5242; e-mail: finaid@mail.wvu.edu.

Aid to dependents of totally disabled veterans is also available.

If you have at least one year of active military service, you may receive college-level credit if you submit a copy of you DD214 or a SMART or AARTS transcript to the Transfer Unit of Admissions and Records.

Robert C. Byrd Health Sciences Center
Admission to the undergraduate and professional programs at the Robert C. Byrd Health Sciences Center requires a separate application process. Downloadable web applications are available for dental hygiene, nursing, medical technology, and pathologists’ assistant at http://www.arc.wvu.edu/admissions/applications.html#hscapps. All other health sciences applications may be obtained from the Health Sciences Admissions and Records Office at 1170 Health Sciences North, Box 9815, Morgantown, WV 26506–9815 or by calling (304) 293–3521.
Incoming freshmen wishing to apply to nursing may use the regular undergraduate application available online at http://admissions.wvu.edu/undergraduate/application/apply.asp.

**Transfer Students: Intra-University**

If you are a student at Potomac State College of WVU or WVU Institute of Technology, you must complete the Change of Campus form to transfer to the Morgantown campus. The form can be found at: http://www.arc.wvu.edu/admissions/pdf_forms.html. You must meet admission requirements and also meet the requirements of the program you wish to enter.

If you want to transfer to WVU at Morgantown before completing two semesters at any of our regional or branch campuses, you will need to have been eligible for freshman admission.

**Transfers from Other Accredited Institutions**

We welcome you as a transfer student if you have completed post-secondary studies at a regionally accredited college or institution. To be eligible to enroll as a transfer student at the University, you must have at least a 2.0 grade point average in all college work attempted. In addition, if you have fewer than 12 transferable credit hours, you must also meet freshman admission standards. Some individual programs and majors have differing course requirements and higher grade point average requirements.

To be considered for transfer admissions, you must submit a completed application for undergraduate admission and arrange for an official transcript of all college work attempted to be sent to the Office of Admissions and Records. Admissions and Records can only accept transcripts sent directly from Registrars’ Offices. Transcripts issued to you, or a facsimile (fax) transcript, are not considered official. Before final admission is granted, you must submit an official transcript covering all subjects taken after your application to WVU. If you have fewer than 29 transferable credit hours, you will be ranked as a freshman; you must submit ACT or SAT scores and a high school transcript as part of your application. We evaluate transferable credit after receipt of complete official transcripts and admission to WVU. All application material must be received in the Office of Admissions and Records by August 1 for fall admission and December 1 for spring admission.

If you are transferring more than 58 semester hours, you must meet the entrance requirements for the specific program you wish to enter. Individual consideration is given to a limited number of students with more than 58 transferable hours who do not meet specific program requirements.

Credits and grades for college-level courses completed at any institution in the West Virginia state system of higher education may be transferable toward a bachelor’s degree. For institutions outside the West Virginia system and West Virginia private colleges and universities, only credits, not grades, are transferable for college-level courses passed with a grade of D or higher.

In all cases, the application of transfer credit toward completion of a bachelor’s degree is determined by the school or college upon enrollment.

Transfer credits from two-year community colleges and junior colleges outside the West Virginia Regional Campus System are limited to 72 hours of lower-division courses.

**International Student Admission**

West Virginia University is authorized under federal law to enroll non-immigrant foreign nationals as students. International students wishing to enroll as undergraduate students at WVU must comply with the stated academic requirements for admission and with certain additional academic and non-academic requirements.

April 1 is the application deadline for the fall semester. International students applying for admission to WVU must submit the following:

- Completed International Student Admission Application.
- Application service fee.
• Results of the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS). TOEFL results must be sent to WVU directly from the Educational Testing Service (ETS) and the IELTS results must be sent directly from the University of Cambridge Local Examinations Syndicate.
• Original or certified copies of an official academic record in original language of issue.
• Original or certified copy of all certificates or diplomas in original language of issue.
• Official English translations of academic record and certificates/diplomas.

International applicants who have completed high school in the United States may also be required to submit ACT or SAT results.

The above items should be sent to Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009 and must be received by the application deadline. If possible, all application material should be submitted at one time (TOEFL/IELTS scores and official transcripts from United States institutions should be requested so that all material arrives at WVU close to the same date). Incomplete applications cannot be guaranteed consideration for the desired semester.

Required Academic Credentials

Applicants must submit academic records from all secondary and post-secondary institutions attended regardless of whether grades were issued or credit was received. WVU requires that original or certified copies of the original academic documents from non-United States institutions be submitted. The required documents include the official academic record (showing course titles, dates taken, and grades received), and diploma(s) or certificate(s) showing degree awarded. These documents must be in the original language of issue. Official English translations must be included. Translations must be literal, word-for-word translations, and must indicate actual grades received, not an interpretation of the grades. Applicants who have studied in the United States are required to have the institution(s) in the U.S. send the official transcript directly to WVU.

Documents received by WVU become the property of WVU and cannot be returned to the applicant or copied for the applicant. It is therefore recommended that students who receive only one original copy of credentials submit certified copies with the application.

English Language Proficiency

All applicants whose first language is not English must provide proof of English language proficiency. WVU uses the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) as the measure of English language proficiency. A score of 61 on the internet-based TOEFL, 173 on the computer-based TOEFL or 500 on the paper-based TOEFL or 6.0 on the IELTS is the minimum required. Applicants should make arrangements to take the TOEFL well in advance of the desired date of enrollment at WVU. Information about registration for the TOEFL can be obtained by writing to: TOEFL/TSE Services, P.O. Box 6151, Princeton, NJ 08541-6151, USA, or by contacting the local office of the United States Information Service (USIS). Information about registration for IELTS can be obtained by accessing the IELTS website at http://www.ielts.org.

Applicants who have received a high school diploma or a bachelor's degree in the United States need not submit TOEFL results.

In some cases, it may be possible to consider applications from students who lack adequate TOEFL or IELTS scores and who will enroll in WVU's Intensive English Program. Such applicants must contact the Intensive English Program directly and notify the Office of Admissions and Records of their intentions. Admission to the Intensive English Program does not guarantee admission to the University or to a specific program of study. Inquiries should be directed to the Intensive English Program, WVU Department of Foreign Languages, P.O. Box 6297, Morgantown, WV 26506-6298; phone: (304) 293-3604; online: http://iep.wvu.edu.
Financial Documents and Student Visa

International students requiring a form I-20 or DS 2019 for student or exchange visa must provide certification of adequate financial resources. Generally, the student is required to provide an official bank statement showing the availability of the appropriate funds. If a private sponsor will be the student’s source of support, the sponsor must submit a letter showing intent to sponsor and an official bank statement showing the availability of the appropriate funds. Other forms of support could include sponsorship certifications from the student’s government or sponsoring agency. In all cases, original or certified copies of financial/sponsorship documents must be submitted before the I-20 or DS 2019 can be issued.

Other Admission Categories

Transient/Visiting Students Coming to WVU

If you want to take a course at WVU and have the credit transferred to another college or university, you must complete a Transient/Visiting Application.

Readmission

If you leave the University for at least one complete semester, you are required to submit an application for readmission to the Office of Admissions and Records. Decisions on readmission are based on your WVU academic standing along with academic work earned at any other institution attended after leaving WVU. In order to be readmitted, you must obtain an overall grade point average of 2.0 at all institutions attended since leaving WVU or present an overall grade point average of 2.0 from WVU and all institutions attended since leaving WVU.

If you are transferring credit from institutions outside the West Virginia System of Higher Education, WVU will accept credit only for courses in which you earned a grade of D or higher, provided the other conditions have been met.

If you have been suspended from the University, you must be reinstated by the dean of the school or college to which you wish to be admitted before you apply for readmission. If you have been suspended for academic reasons or have less than a 2.0 overall grade point average when you leave WVU and you take courses at other institutions during your suspension, you cannot automatically transfer these courses to WVU upon readmission. You must achieve an overall GPA of 2.0 on a semester of at least 12 hours for full-time students (summer session excluded) or 12 hours accumulated over several semesters for part-time students after your readmission in order to have the appropriate credit entered on your record. The dean of your college or school and your advisor must certify that these conditions have been met.

Undergraduate Non-Degree

Students with one or more bachelor’s degrees from an accredited college or university (including WVU) who want to enroll for undergraduate credit may be admitted as non-degree students. Post-baccalaureate students who are not working toward a graduate degree may earn undergraduate credit and will be assessed undergraduate fees. Candidates for admission to this classification who are not graduates of WVU must submit an undergraduate application and an official transcript from the institution granting the latest degree. The Office of Admissions and Records can only accept transcripts sent from the Registrar’s Office of the institution previously attended. Transcripts issued directly to you or facsimile (fax) transcripts are not considered official. WVU students need only to apply with an undergraduate application.

WVU will admit students who are not degree candidates, but who wish to take additional courses. If you meet University requirements, please submit a complete application and official transcripts from all institutions previously attended. If you have completed fewer than 29 college-level credits, please submit an official high school transcript.
Second Degree
College graduates wanting to earn a second bachelor’s degree are required to submit an undergraduate application and official transcripts from all institutions previously attended. The Office of Admissions and Records can only accept transcripts sent from the Registrars’ Offices of these institutions. Transcripts issued directly to you or facsimile (fax) transcripts are not considered official. In general, admission is granted on the basis of a cumulative grade point average of at least 2.0 in the first baccalaureate. Selected majors, such as forensics, engineering, business and economics, and education, have higher requirements. After you are admitted, the individual department evaluates your transcript and applies any appropriate credit from the first baccalaureate toward completion of the second. All residence requirements must be met to receive a second bachelor’s degree. (See Policy of Residency Classification Residence Requirements, page 33).

Academic Forgiveness Policy
WVU allows academic forgiveness to some students who are not successful in their first attempt at higher education.
To be eligible, a student cannot have been enrolled at a West Virginia state system of higher education institution for at least five calendar years and cannot have been enrolled in any other institution of higher learning during those five years. In order to determine your eligibility, you must complete the Academic Forgiveness Form, which is available at the Office of Admissions and Records.
The conditions and rules of the academic forgiveness policy are as follows:
• Admission to WVU under the academic forgiveness policy is contingent upon satisfying the above stated non-enrollment period. In addition, a recommendation that the student be admitted under the academic forgiveness policy must be submitted by the dean of the college or school that the student plans to enter, and the recommendation must be approved by the Office of the Vice President for Academic Affairs.
• Upon admission to WVU under this policy, the student will be credited with the hours earned for courses completed with a grade of D or higher.
• Grades earned during any prior enrollment period will not be counted for purposes of calculating the student’s grade point average, but grades earned will remain on the student’s permanent record.
• The student must meet and complete all coursework required to meet the college’s or school’s requirements for graduation, but under no circumstances after the student has been admitted under the academic forgiveness policy shall the student complete fewer than 64 credit hours prior to earning a degree.
• A student admitted to WVU under this policy will follow all regulations regarding probation, suspension, and expulsion.

Immunization Requirements
Requirements for immunizations are posted on Admissions and Records’ website at: http://www.arc.wvu.edu/admissions/urequire_main.html.
## Academic Information

### Official Program Designations

Degree Program: an area of study approved as such by the institution and the Board of Governors (BOG) and listed on the official inventory of degree programs (e.g., English, social work, physical education, foreign languages). The degree is represented by the official degree designation (e.g., B.A.—bachelor of arts, B.S.—bachelor of science, M.A.—master of arts, B.S.J.—bachelor of science in journalism, B.S.P.Ed.—bachelor of science in physical education, etc.)

Major: a field of study within an approved degree program, having its own prescribed curriculum. A degree program may have more than one major.

Minor: strategic work in an area of study and thus encourages students to pursue a secondary field. Students may not earn a minor in the same field as their major. Requirements for a minor are set by the academic unit offering the minor and must include at least 15 hours of coursework, with a minimum of nine hours at the upper division level (course numbers 300 or above).

Area of Emphasis: a specific subject area of study which has limited course offerings within an approved degree program and major. Normally, a minimum of 12 credit hours and no more than 18 credit hours would be expected for an area of emphasis within a baccalaureate degree program.

Undergraduate Certificate Programs: a coherent, specialized curriculum designed for students in search of a specific body of knowledge for personal/career development of professional continuing education. Normally a minimum of 12 and no more than 21 credit hours constitute a certificate program at the baccalaureate level.

### Degree Programs Offered by WVU

<table>
<thead>
<tr>
<th>Program</th>
<th>Bachelor's</th>
<th>Master's</th>
<th>Doctoral/Professional</th>
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<tr>
<td>Multidisciplinary Studies...............</td>
<td>B.A.</td>
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<tr>
<td><strong>College of Business and Economics</strong></td>
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<tr>
<td>Accounting.............................</td>
<td>B.S.B.Ad.</td>
<td>M.B.A.</td>
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<tr>
<td>Business Administration..................</td>
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<td>Business Management.....................</td>
<td>B.S.B.Ad.</td>
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<td>Economics................................</td>
<td>B.S.</td>
<td>M.A.</td>
<td>Ph.D</td>
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<td>Finance..................................</td>
<td>B.S.B.Ad.</td>
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<td>Industrial Relations....................</td>
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<td>M.S.</td>
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<td>Management Information Systems.........</td>
<td>B.S.B.Ad.</td>
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<td>Marketing................................</td>
<td>B.S.B.Ad.</td>
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<td>Professional Accountancy..............</td>
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<td>M.P.A.</td>
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<td><strong>College of Creative Arts</strong></td>
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<td>Art....................................</td>
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<td>M.M. ...D.M.A., Ph.D.</td>
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<td>M.F.A.</td>
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<td>Aerospace Engineering..................</td>
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<td>M.S.A.E.</td>
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<td>Chemical Engineering...................</td>
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<td>M.S.Ch.E.</td>
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<td>Civil Engineering......................</td>
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<td>M.S.C.E.</td>
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Engineering ................................................................. M.S.E. Ph.D.
Industrial Engineering ........................................... B.S.I.E. M.S.I.E.
Industrial Hygiene ....................................................... M.S.
Mechanical Engineering .......................................... B.S.M.E. M.S.M.E.
Mining Engineering ................................................... B.S.Min.E. M.S.Min.E.
Petroleum & Natural Gas Engineering ......................... B.S.PNGE M.S.PNGE
Safety Management ................................................... M.S.
Software Engineering ................................................. M.S.S.E.

College of Human Resources and Education
Audiology ........................................................................ AU.D.
Child Development and Family Studies ............... B.S.
Counseling ............................................................... M.A.
Counseling Psychology ................................................. Ph.D.
Education ................................................................. Ed.D., Ph.D.
Educational Leadership ................................................ M.A.
Educational Psychology ............................................... M.A.
Elementary Education ................................................ M.A.
Instructional Design and Technology ......................... M.A. Ph.D.
Multidisciplinary Studies .......................................... B.M.D.S.
Reading ......................................................................... M.A.
Rehabilitation Counseling ........................................... M.S.
Secondary Education ..................................................... M.A.
Special Education ........................................................ M.A.
Speech Pathology and Audiology ......................... B.S.
Speech Pathology .............................................................. M.S.

College of Law
Law ................................................................................ J.D.

College of Physical Activity and Sports Science
Kinesiology ........................................................................ Ph.D
Physical Education ..................................................... M.S. Ed.D.
Sport Studies ............................................................... B.S.P.Ed.

Davis College of Agriculture, Forestry, and Consumer Sciences
Agricultural and Resource Economics ......................... M.S.
Agricultural and Extension Education ....................... B.S.Agr. M.S.
Agricultural Sciences ...................................................... Ph.D.
Agriculture, Forestry, and Consumer Sciences ............. M.Agr.
Animal and Nutritional Sciences ............................... M.S.
Family and Consumer Sciences ................................ B.S.F&C.S. M.S.F&C.S.
Forest Resources Management ................................ B.S.F.
Forest Resource Science ................................................. Ph.D.
Forestry ................................................................. M.S.F.
Genetics and Developmental Biology ..................... M.S. Ph.D.
Landscape Architecture .............................................. B.S.L.A.
Multidisciplinary Studies .............................................. B.M.D.S.
Plant and Soil Sciences ............................................. M.S.
Recreation, Parks, and Tourism Resources ................. B.S.R. M.S.
Reproductive Physiology ............................................. Ph.D.
Resource Management ................................................ B.S.Agr.
Resource Management and Sustainable Development .... Ph.D.
Wildlife and Fisheries Resources ............................. B.S. M.S.
Wood Science and Technology ...................................... B.S.

Eberly College of Arts and Sciences
Biology ................................................................. B.A., B.S. M.S. Ph.D.
Chemistry ............................................................... B.A., B.S. M.S. Ph.D.
Communication Studies ..................................... B.A. M.A. Ph.D
Computer Science ......................................................... B.S.
Creative Writing ........................................................... M.F.A.
Economics ................................................................. B.A.
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<th>Ph.D.</th>
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<td>Political Science</td>
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<td>Professional Writing and Editing</td>
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<td>Psychology</td>
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<td>Public Administration</td>
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<td>Social Work</td>
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<td>Sociology and Anthropology</td>
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<tr>
<td>Statistics</td>
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**Perley Isaac Reed School of Journalism**

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<th>Degree</th>
<th>B.S.J.</th>
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<tbody>
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<td>Integrated Marketing Communications</td>
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<tr>
<td>Journalism</td>
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**School of Dentistry**

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<td>Dental Specialties</td>
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<tr>
<td>Dentistry</td>
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<td>D.D.S.</td>
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**School of Medicine**

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<tr>
<td>Anatomy</td>
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<tr>
<td>Biochemistry (Medical)</td>
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<tr>
<td>Biochemistry and Molecular Biology</td>
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<tr>
<td>Cancer Cell Biology</td>
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<tr>
<td>Cellular and Integrative Physiology</td>
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<tr>
<td>Community Health Promotion</td>
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<tr>
<td>Exercise Physiology</td>
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<tr>
<td>Immunology and Microbial Pathogenesis</td>
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<tr>
<td>Medical Technology</td>
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<td>Medicine</td>
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<tr>
<td>Microbiology and Immunology</td>
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<tr>
<td>Neuroscience</td>
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<tr>
<td>Occupational Therapy</td>
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<tr>
<td>Pathology Assistant</td>
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<tr>
<td>Pharmacology and Toxicology</td>
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<tr>
<td>Physical Therapy</td>
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<tr>
<td>Physiology (Medical)</td>
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<tr>
<td>Public Health</td>
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<tr>
<td>Public Health Sciences</td>
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<td>D.P.T.</td>
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**School of Nursing**

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<th>B.S.N.</th>
<th>M.S.N., D.N.P., Ph.D.</th>
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<tbody>
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<td>Nursing</td>
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**School of Pharmacy**

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<th>Pharm.D.</th>
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<td>Pharmaceutical and Pharmacological Sciences</td>
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<td>Pharmaceutical Sciences</td>
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<tr>
<td>Pharmacy</td>
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</table>
Academic Minors At WVU

Procedures for Declaring and Completing a Minor

The following steps should be followed to assure that completion of a formal minor is appropriately recognized and posted to the student’s transcript:

1. A student interested in completing a minor (or minors) formally declares the intent to do so by completing a Declaration of Intent to Complete a Minor Field form available at http://www.wvu.edu/~acadaff/acad/minors/DofIto%20CompleteaMinor.pdf. The advisor sends two copies of the form to the college or school offering the minor.

2. The student works with his or her major advisor to incorporate minor requirements into schedule planning. Students are welcome to consult with advisors in the minor department. Students who wish to complete a minor in music, women’s studies, or ROTC must work with advisors for those programs.

3. When completing the Application for Graduation and Diploma, the student indicates the minor(s) for which certification is requested.

4. The student’s major advisor/major college advisement office certifies that all minor requirements have been completed, and reports both major and minor certifications to Admissions and Records on the Tentative Graduation List form. (Women’s studies and music minors are certified by those programs.)

Requirements

Requirements for academic minors are set by the department offering the minor. Substitutions may not be made without written approval of the minor department. Courses in the minor may not be taken pass/fail. A student may not complete a minor in his or her major field. (For rules concerning minors that are part of the multidisciplinary studies degree, see http://mds.wvu.edu/.)

Available Minors

For the list, see http://admissions.wvu.edu/undergraduate/academics/minors.asp.

Academic Common Market

West Virginia provides its residents the opportunity, through the Academic Common Market (ACM) and through contract programs, to pursue academic programs not available within the state. Both programs permit West Virginians to enter out-of-state institutions at reduced tuition rates. Contract programs have been established for study in optometry, podiatry, and veterinary medicine. The ACM provides access to numerous graduate and undergraduate programs. The programs are restricted to West Virginia residents who have been accepted for admission to one of the specific programs at designated out-of-state institutions. Through reciprocal agreement, WVU allows residents of states within the ACM to enroll in graduate and undergraduate programs on an in-state tuition basis. Further information may be obtained from the Associate Provost for Undergraduate Academic Affairs, Stewart Hall, West Virginia University, P.O. Box 6203, Morgantown, WV 26506-6203. Application must be made through the higher education authority of the state of residence. West Virginia residents should apply through the Higher Education Policy Commission, 950 Kanawha Boulevard East, Charleston, WV 25301.

Baccalaureate Degrees

Goals of Undergraduate Education

West Virginia University is committed to providing a high-quality education to all students without regard to race or color, sex, sexual orientation, veteran status, religion, age, disability, national origin, creed, ancestry, or political affiliation.

Students should acquire a basic foundation in liberal studies. The perspectives of the humanities, social sciences, and natural sciences, and an appreciation of the arts, should be integrated with coursework in the major to facilitate an understanding of the world at large. This foundation for lifelong learning should provide the knowledge and skills necessary to deal with social, cultural, and technological change.
Students should develop critical thinking and problem-solving skills sufficient for life in contemporary society. These skills include the ability to read critically, listen critically, ask appropriate questions, gather relevant information, and apply critical analysis to reach logical conclusions. Central to these skills are mathematical literacy and proficiency in oral and written communications.

Students should attain proficiency in their major fields. This proficiency should enable them to be competitive in the job market or in admission to graduate or professional schools.

Students should acquire knowledge, understanding, and an appreciation of diversity in languages, cultures, ideas, and peoples, along with a desire to work so that all individuals are treated in a manner consistent with social justice.

Students should maintain a lifelong commitment to ethical behavior, responsible citizenship, and public service.

**Commitment to Assessment**

The University Assessment Council (UAC) is composed of faculty, administrators, and staff reflecting the broader WVU community. The UAC is charged with strengthening the effectiveness of assessment initiatives at the course and program levels aimed at enhancing student learning; serving as an institutional clearinghouse for assessment best practices in higher education; coordinating training and information transfer activities designed to strengthen assessment programs across the university; and providing institutional review and counsel to program-level assessment activities reported as part of Board of Governors Program Reviews.

**Student Responsibility**

As a student, you are responsible for your academic well-being. Specifically, you are responsible for knowing your scholastic standing as it relates to the published regulations and standards of WVU. This responsibility includes the regulations of your college or school and the regulations of the department or division in which you are earning a degree. In order to graduate, you must go to your academic dean’s office and complete an application for graduation and diploma. File your application during the first month of the semester or summer term in which you expect to graduate.

**Academic Advising**

Freshmen and transfer students enter West Virginia University as either pre-majors or direct admits to their majors, depending on individual academic program admission requirements. The minimum requirements to enter a major may include a specific number of credit hours, credit hours in specific prerequisite coursework, a minimum or competitive grade point average, and/or an entrance exam.

Every student at West Virginia University is assigned an academic advisor. Direct admits, students who have matriculated into their majors, and some second-year pre-majors are advised by staff and faculty in their respective academic units. The Undergraduate Advising Services Center (UASC) advises the majority of freshmen pre-majors, many sophomore pre-majors, as well as ACCESS, part-time, and non-degree students. Students who are undecided on their majors are also advised in the UASC under general studies until they select a major.

WVU students are required to meet with their academic advisors prior to registering for classes each semester. Advisors assist students in understanding major and university requirements; major matriculation processes; course registration planning and processes; prerequisites; the General Education Curriculum (GEC); probation and suspension; and academic options. Students are expected to become familiar with the Undergraduate Catalog, as it relates to their academic goals and standing; be able to articulate their major and university requirements and matriculation processes; prepare for their own course planning and registration processes; use the various majors’ websites; and make full use of academic advising. For more information on academic advising, visit the UASC website at http://www.wvu.edu/~advising. Students are encouraged to visit their major’s website for more major specific information.
Regulations Affecting Degrees

All degrees are conferred by the WVU Board of Governors as recommended by the faculties of the various colleges and schools. A degree is granted at the end of the semester or summer term in which you complete the requirements for that degree, provided that you have submitted an application for graduation at your academic dean’s office.

You become eligible to graduate when you complete the requirements of the University and your college or school that were in effect at the time you first registered at that college or school. You have seven years after your first registration to complete the requirements. If you do not, you will have to meet the requirements of a later catalog—one that is no more than seven years old when you complete your studies. With the consent of your advisor and your dean, you may choose to meet the conditions published in a later catalog.

Students must observe any program changes that are enacted by the West Virginia University Board of Governors, the West Virginia Higher Education Policy Commission, or by local, state, or federal law.

WVU policy dictates that, in view of their professional responsibilities to the general public, the faculty of a professional school may recommend to the president of the University, in writing, that a student be removed from its rolls. The recommendation of the faculty must indicate that the student is not fit to meet the qualifications and responsibilities of the profession.

WVU will not confer a degree or issue a transcript to any student until payment of all tuition, fees, and other indebtedness to any unit of the University is made.

Credits Required

All students entering WVU as freshmen or as transfer students with fewer than 29 hours must take University 101 in their first semester. Those who do not pass the course must re-enroll for the subsequent semester until they earn a passing grade. In certain majors, alternative courses are acceptable. These will be identified for students by their advisors.

Every undergraduate degree program at WVU requires that students satisfactorily complete an approved capstone experience prior to graduation.

Each degree program is based upon a combination of required courses and electives. Certain University requirements are listed below. In addition, the various colleges and schools determine their own credit requirements and course grade averages for graduation. Credit hours required for graduation are listed below by program. Required grade point averages range from 2.0 to 2.5. The determination to count ROTC courses as free electives or toward fulfillment of GEC requirements is the prerogative of the dean of the college awarding the degree.

No more than three credit hours of ROTC may count toward fulfillment of the GEC requirement in each objective area.

WVU Undergraduate Degree Credit Hour Requirements

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<tr>
<th>Major</th>
<th>Minimum Credit Hours</th>
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<td>Accounting</td>
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<td>Advertising</td>
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<td>Aerospace Engineering</td>
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<tr>
<td>Agribusiness Management and Rural Development</td>
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<td>Agricultural and Extension Education</td>
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<td>Agroecology</td>
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<td>Agronomy</td>
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<td>Animal and Nutritional Sciences</td>
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<tr>
<td>Applied and Environmental Microbiology</td>
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<td>Art—B.A. Art History</td>
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<td>Art—B.F.A.</td>
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<td>Art—B.F.A. with teaching certificate</td>
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<tr>
<td>Athletic Coaching Education</td>
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<td>Athletic Training</td>
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<td>Biochemistry</td>
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Biochemistry/Biology ................................................................. 128
Biochemistry/Chemistry .............................................................. 128
Biology .................................................................................. 128
Biometric Systems .................................................................. 133
Broadcast News ...................................................................... 128
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Business/Foreign Language—Finance Dual Degree ............... 158
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Music—B.M. Performance: Band or Orchestra Instrument or Guitar 129

The Purpose of General Education

WVU aims to provide students with a foundation of skills and knowledge necessary to reason clearly, communicate effectively, and contribute to society. The General Education Curriculum is designed to ensure that students meet these goals through inquiry-based learning across the disciplines. In conjunction with a major field, and in consultation with their advisors, students will design programs of study that satisfy the GEC’s objectives.

The learning objectives reflect the fact that, in an increasingly interdependent world, it is crucial that students learn to interact constructively with people from different cultures, to understand viewpoints different from their own, and to identify and resolve issues of personal and professional ethics. The GEC strives to help students to become thoughtful participants in a democratic society, and to achieve the intellectual integration and awareness they will need to meet changes and challenges in their personal, social, and professional lives.

Second Degrees for WVU Students

To earn a second bachelor’s degree, most majors require a student to complete at a minimum, an additional 30 credit hours beyond the first degree (for a total of at least 158 hours). All requirements must be satisfied, departmental and otherwise, for the second degree, as well as all residence requirements.

General Education Curriculum (GEC)
Policies Governing this Curriculum
1. Students will take between 41 and 43 credits in this curriculum.
2. Student may take up to nine credits of designated courses in their majors to satisfy objectives 2–9.
3. Students may take only two courses in one discipline (outside of the major) to fulfill GEC objectives.
4. Most courses fulfill two GEC objectives. The student will choose which one of those objectives a particular course will fulfill.
5. Courses satisfying learning objectives 2–9 may also satisfy a course requirement for the major.

General Education Curricular Objectives
For a list of General Education Curriculum (GEC) courses, see http://www.arc.wvu.edu/courses/GEC.html.

“Writing” ("W") Course Requirement
All students must successfully complete at least one course that requires a substantial writing component and in which the grade is partially determined by writing skills. English 102 or English 103 must be completed before fulfilling the writing course requirement.
Currently, the following courses have been approved for meeting this requirement.
Note: Not all of these courses are available every term.

Only sections listed as “W01-W09” or “WH1-WH9” fulfill this requirement. Some “writing” courses are taught with an emphasis toward a specific major. Political science “W” courses are restricted to political science and international studies majors only.
Prior to registration, students planning to take any of these courses to fulfill the writing requirement should contact the department offering the course to see if this course is appropriate.

Agronomy (AGRN) 315
Accounting (ACCT) 311, 322
Animal Industry and Veterinary Science (A&VS) 402, 451
Art (ART) 245, 246, 247, 248, 249, 252, 254, 350, 352, 495
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Athletic Training (ATTR) 424
Biology (BIOL) 312, 313, 351, 363
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Multidisciplinary Studies (MDS) 492
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Petroleum Engineering (PNGE) 332
Philosophy (PHIL) 310, 321, 323, 494
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Physical Education/Teaching (PET) 228
Physics (PHYS) 341
Psychology (PSYC) 301, 331, 342, 343, 345, 356, 362, 382, 423, 426, 474, 492, 495, 498
Social Work (SOWK) 494
Sociology and Anthropology (SOCA) 332, 389
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As courses are approved or deleted, the GEC and W course listings are updated on the Admissions and Records website: http://www.arc.wvu.edu.

**Study Abroad at WVU (Office of International Programs)**

In today’s increasingly globalized society, direct international experience is a key component of a complete college education. The Office of International Programs (OIP) manages more than 400 exciting and life-enriching programs in over 60 countries all around the world. These programs are designed to maximize safety and to insure the academic viability of your experience. Faculty-led programs allow students to travel and study overseas under the mentorship of WVU faculty leaders. In WVU Exchange Programs, students from our campus enroll at an international campus while paying regular WVU tuition and fees. Mountaineer Abroad Programs take students to select campuses where programs are designed specifically for WVU student needs and interests. In addition, OIP offers numerous programs as a part of the Amizade Global-Service Learning Consortium, the International Student Exchange Program, and several affiliate organizations specializing in academic experiences overseas.

**Faculty-Led Programs**

Faculty-led programs are study abroad experiences developed and organized by WVU faculty members in conjunction with OIP. Students study in rigorous but exciting programs where coursework is directly supervised by WVU faculty. These programs, available throughout the year, are focused on either general education or on specific disciplines such as law, political science, foreign languages, biology, medicine, social work, and much more. Past locations have included Brazil, China, England, Fiji, France, Germany, Ghana, Italy, Mexico, Spain, and Vietnam. Contact the OIP or visit the website for a current listing of upcoming programs: http://www.wvu.edu/~intlprog/.

West Virginia University Undergraduate Catalog
WVU Exchange Programs

WVU exchange programs are managed directly by OIP in conjunction with 35 select partner institutions around the world. They offer our students the opportunity to study abroad for a semester or year at a WVU sister institution. Students simply pay regular WVU tuition and fees at home and the host school provides full reciprocal services at a campus abroad. Room and board are paid either to WVU or the exchange institution, depending on the exchange agreement. WVU has exchange programs in Australia, Austria, Brazil, Canada, Denmark, England, Estonia, France, Germany, Hong Kong, Hungary, Ireland, Italy, Japan, Mexico, Morocco, Northern Ireland, South Africa, South Korea, Spain, Sweden, Taiwan, Trinidad and Tobago, Turkey, and Wales.

Disegno Italia: Design in Italy

The Design in Italy programs provide students with the opportunity to study abroad at the Nuova Accademia Di Belle Arti in Milan, Italy, one of the top design schools in Europe. Programs are taught in English and include courses in fashion design, furniture restoration, graphic design, interior design, landscape design, photography, theatre design, and visual arts. Programs are available for fall, spring, and summer term.

Amizade Global-Service Learning

Amizade programs are short-term summer programs that integrate study abroad and community service. Past program locations have included Bolivia, Brazil, Germany, Ghana, Mexico, Navajo Nation, Northern Ireland, Poland, and Tanzania.

International Student Exchange Program

The International Student Exchange Program (ISEP) is a worldwide network for international education. ISEP exchanges allow students from the United States and 27 other countries access to programs at member universities for a semester or a year. Students pay WVU tuition, fees, room, board, and an ISEP fee to WVU.

Affiliate Programs

Affiliate programs are study abroad opportunities available to WVU students through our affiliations with various study abroad organizations. Affiliate programs are available during the fall, spring, and summer terms as well as for a complete academic year. Students pay program fees directly to the affiliate organization.

Additional Information

Students must submit application materials to OIP and complete the mandatory pre-departure orientation process for credit approval. Students may enroll in courses to fulfill requirements for their major, minor, or general elective credits (GEC). Students must be in good academic and disciplinary standing before acceptance to WVU programs or to affiliate programs abroad. Participation in these programs also requires a minimum 2.5 grade point average. Exceptions may be made under special circumstances through appeal to OIP, subject to approval of faculty leaders or program coordinators. Financial aid, WVU scholarships, and the WV Promise Scholarship may be used to study abroad. For more information, visit http://www.finaid.wvu.edu.

For more information, please see the OIP website at http://www.wvu.edu/~intlprog or visit the Office of International Programs, room 326, third floor Stansbury Hall.

Residence Requirements

If a student transfers to WVU from another institution of higher learning, he or she should transfer no later than the start of the third year. Under no circumstances will a student who enters WVU after October 1 in any year be allowed to receive a degree at the next commencement. In some special cases, a student can leave WVU at the end of the third year and still receive his/her degree from WVU. He or she must enter another accredited institution with the purpose of taking a combined program that will lead to two degrees or prepare for graduate study. Before the student leaves, he or she must apply to the Academic Standards Committee of his or her college to request permission to do the
work of the fourth year, or a part thereof, at the other institution and still receive the degree from WVU. Upon approval, the student will receive the WVU degree upon presentation of the proper records from the other school.

A transfer student who has completed undergraduate work at another school in the West Virginia system of higher education must complete either his or her last 30 hours of work at WVU or at least 36 hours of work at WVU, of which 16 of the last 32 hours must be on campus. A transfer student whose undergraduate work has been completed outside the West Virginia system of higher education must complete a total of 90 hours or at least the last 30 hours of work in residence at WVU. The student may be required to earn up to 15 hours in the major field, regardless of the number of hours or the nature of the courses transferred.

**Work Done Out of Residence**

WVU's policy is to discourage taking regular residence courses in absentia. If a student begins a course at WVU but fails to complete it due to illness or some other acceptable reason, he or she may receive permission to complete the work in absentia. Permission must be granted by the Academic Standards Committee of the college or school concerned, and the work must be completed under the guidance of a WVU professor. Credit in such cases is allowed only upon a report of a grade of C or better on the final examination. This regulation does not apply to WVU off-campus courses or to courses offered through Extended Learning or Study Abroad.

A student who fails a course (receives a final grade of F) taken at WVU must repeat the course at WVU or at a regional campus to receive credit for that course. The dean of the college or school in which the student is enrolled may authorize an exception to this regulation. If so, then the dean should provide a letter to be placed in the student’s folder, authorizing the exception and explaining its basis.

Students should be aware of the requirements for residence and specific degree requirements described in the catalog when transferring credit from other institutions. For courses taught outside of the West Virginia state system of higher education, WVU will accept credit only for those in which a student earned a grade of D or higher, provided other conditions above have been met. Under no circumstances will grades be transferred from institutions outside the state system.

**WVU Transient Students**

In order to take a course or courses at another school, a student must have written approval from his or her advisor, dean, and director of Admissions and Records or designee. To receive such approval, a student must have an overall 2.0 grade-point average. All approved college-level work is accepted for transfer from accredited institutions, provided the above requirements have been met. To view a list of schools and courses already reviewed, visit http://www.arc.wvu.edu/tes/select_college.php

**Advanced Placement Program (AP)**

WVU encourages you to work to your full capacity and to earn your degree at your own learning speed. As a high school junior or senior, you can take college-level courses at your school in conjunction with the College Entrance Examination Board (CEEB). The Advanced Placement Service administers three-hour examinations to show competency equal to that received by taking the actual college course. The chart on page 35 shows the subject areas, the necessary test scores, and the WVU equivalent courses.

**College Level Examination Program (CLEP)**

If an incoming student has gained a significant level of maturity through life experiences, he or she may receive college credit for those educationally-related experiences through the College Level Examination Program (CLEP) of the CEEB. A policy of the WVU Board of Governors allows University credit to be awarded for successful completion of CLEP subject examinations, except English composition and freshman English. Up to 35 hours of general education or elective credit may be earned for successful performance on the CLEP general examinations. Although this program was designed primarily for adults, exceptionally well-qualified high school seniors may use the CLEP program. The table on
<table>
<thead>
<tr>
<th>Examination</th>
<th>Minimum Score</th>
<th>Credit Hours</th>
<th>Course Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART (Studio)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Studio Art Drawing........ 3</td>
<td>3</td>
<td>ART 111</td>
<td></td>
</tr>
<tr>
<td>Studio Art-2-D Design...... 3</td>
<td>3</td>
<td>ART 121</td>
<td></td>
</tr>
<tr>
<td>Studio Art-3-D Design...... 3</td>
<td>3</td>
<td>ART 123</td>
<td></td>
</tr>
<tr>
<td>ART HISTORY</td>
<td>3</td>
<td>ART 101</td>
<td></td>
</tr>
<tr>
<td>ART HISTORY</td>
<td>3</td>
<td>ART 101</td>
<td></td>
</tr>
<tr>
<td>BIOLOGY</td>
<td>3</td>
<td>8</td>
<td>BIOL 101, 102, 103, 104</td>
</tr>
<tr>
<td>CHEMISTRY</td>
<td>3</td>
<td>8</td>
<td>CHEM 115, 116</td>
</tr>
<tr>
<td>CLASSICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latin: Vergil              3</td>
<td>3</td>
<td>CLAS open credit</td>
<td></td>
</tr>
<tr>
<td>Latin: Literature          3</td>
<td>3</td>
<td>CLAS open credit</td>
<td></td>
</tr>
<tr>
<td>COMPUTER SCIENCE</td>
<td></td>
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<tr>
<td>Computer Science A.......... 3</td>
<td>3</td>
<td>open credit CS</td>
<td></td>
</tr>
<tr>
<td>Computer Science AB ....... 3</td>
<td>6</td>
<td>open credit CS</td>
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</tr>
<tr>
<td>(6 units maximum for both tests)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECONOMICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microeconomics             3</td>
<td>3</td>
<td>ECON 201</td>
<td></td>
</tr>
<tr>
<td>Macroeconomics             3</td>
<td>3</td>
<td>ECON 202</td>
<td></td>
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<tr>
<td>ENGLISH</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Engl. Lit. and Comp.       3</td>
<td>3</td>
<td>ENGL 131</td>
<td></td>
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<tr>
<td>Engl. Lit. and Comp.       4</td>
<td>6</td>
<td>ENGL 131, 132</td>
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</tr>
<tr>
<td>Engl. Lang. and Comp.      3</td>
<td>3</td>
<td>ENGL 101</td>
<td></td>
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<tr>
<td>Engl. Lang. and Comp.      3</td>
<td>3</td>
<td>ENGL 101, 102</td>
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<tr>
<td>(9 units maximum for both tests)</td>
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<td>ENVIRONMENTAL SCIENCE      3</td>
<td>4</td>
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<tr>
<td>FOREIGN LANGUAGE</td>
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<tr>
<td>Chinese Lang. &amp; Culture    3</td>
<td>6</td>
<td>CHIN 101, 102</td>
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<tr>
<td>French Language            3</td>
<td>6</td>
<td>FRCH 101, 102</td>
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<tr>
<td>French Literature          3</td>
<td>6</td>
<td>FRCH 203, 204</td>
<td></td>
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<tr>
<td>German Language            3</td>
<td>6</td>
<td>GER 101, 102</td>
<td></td>
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<tr>
<td>Italian Lang. &amp; Culture    3</td>
<td>6</td>
<td>ITAL 101, 102</td>
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</tr>
<tr>
<td>Japanese Lang. &amp; Culture   3</td>
<td>6</td>
<td>JAPN 101, 102</td>
<td></td>
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<tr>
<td>Russian Lang. &amp; Culture    3</td>
<td>6</td>
<td>RUSS 101, 102</td>
<td></td>
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<tr>
<td>Spanish Language           3</td>
<td>6</td>
<td>SPAN 101, 102</td>
<td></td>
</tr>
<tr>
<td>Spanish Literature         3</td>
<td>6</td>
<td>SPAN 203, 204</td>
<td></td>
</tr>
<tr>
<td>GEOGRAPHY</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Human Geography            3</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>GOVERNMENT AND POLITICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States              3</td>
<td>3</td>
<td>POLS 102</td>
<td></td>
</tr>
<tr>
<td>Comparative                3</td>
<td>3</td>
<td>POLS 101</td>
<td></td>
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<tr>
<td>HISTORY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States              3</td>
<td>6</td>
<td>HIST 152, 153</td>
<td></td>
</tr>
<tr>
<td>European                   3</td>
<td>6</td>
<td>HIST 101, 102</td>
<td></td>
</tr>
<tr>
<td>World                      3</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td></td>
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</tr>
<tr>
<td>Calculus AB                3</td>
<td>4</td>
<td>MATH 129</td>
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<tr>
<td>Calculus AB                4</td>
<td>4</td>
<td>MATH 155</td>
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<tr>
<td>Calculus BC                3</td>
<td>4</td>
<td>MATH 155</td>
<td></td>
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<tr>
<td>Calculus BC                4</td>
<td>8</td>
<td>MATH 155, 156</td>
<td></td>
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<tr>
<td>Statistics                 3</td>
<td>3</td>
<td>STAT 211</td>
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<tr>
<td>MUSIC</td>
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<tr>
<td>Theory                     3</td>
<td>3</td>
<td>MUSC 165</td>
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<tr>
<td>PHYSICS</td>
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<tr>
<td>Physics B                  3</td>
<td>4</td>
<td>*PHYS 101</td>
<td></td>
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<tr>
<td>Physics B                  4</td>
<td>8</td>
<td>*PHYS 101, 102</td>
<td></td>
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<tr>
<td>Physics C Mechanics        3</td>
<td>4</td>
<td>*PHYS 111</td>
<td></td>
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<tr>
<td>Phys. C Elec./Magnet....... 3</td>
<td>4</td>
<td>*PHYS 112</td>
<td></td>
</tr>
</tbody>
</table>
*Students receiving AP credit for these courses must register and complete the corresponding physics lab by special arrangement through the department.

<p>| PSYCHOLOGY                 | 3             | PSYCH 101     |</p>
<table>
<thead>
<tr>
<th>General Examinations</th>
<th>WVU Equivalent</th>
<th>Minimum Score Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition (with essay)</td>
<td>ENGL 101 (3 hr.)</td>
<td>59</td>
</tr>
<tr>
<td>English Composition (multiple choice)</td>
<td>No credit</td>
<td></td>
</tr>
<tr>
<td>Humanities</td>
<td>LSP A non-specified credit</td>
<td>50</td>
</tr>
<tr>
<td>Mathematics</td>
<td>LSP C non-specified credit</td>
<td>50</td>
</tr>
<tr>
<td>Natural Science</td>
<td>LSP C non-specified credit</td>
<td>50</td>
</tr>
<tr>
<td>Social Science and History</td>
<td>LSP B non-specified credit</td>
<td>50</td>
</tr>
</tbody>
</table>

**Subject Tests**

<table>
<thead>
<tr>
<th>Subject</th>
<th>WVU Equivalent</th>
<th>Minimum Score Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Literature</td>
<td>ENGL 241 (3 hr.)</td>
<td>59</td>
</tr>
<tr>
<td>Analysis &amp; Interpret. of Literature</td>
<td>ENGL 131 (3 hr.)</td>
<td>59</td>
</tr>
<tr>
<td>College Composition</td>
<td>No credit</td>
<td></td>
</tr>
<tr>
<td>English Literature</td>
<td>ENGL 262 (3 hr.)</td>
<td>60</td>
</tr>
<tr>
<td>Freshman English</td>
<td>No credit</td>
<td></td>
</tr>
<tr>
<td>College French (levels 1 and 2)</td>
<td>FRCH 101 and 102 (6 hr.)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>FRCH 203 and 204 (6 hr.)</td>
<td>59</td>
</tr>
<tr>
<td>College German (levels 1 and 2)</td>
<td>GER 101 and 102 (6 hr.)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>GER 203 and 204 (6 hr.)</td>
<td>60</td>
</tr>
<tr>
<td>College Spanish (levels 1 and 2)</td>
<td>SPAN 101 and 102 (6 hr.)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>SPAN 203 and 204 (6 hr.)</td>
<td>63</td>
</tr>
<tr>
<td>American Government</td>
<td>POLS 102 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>American History I</td>
<td>HIST 152 (3 hr.)</td>
<td>49</td>
</tr>
<tr>
<td>American History II</td>
<td>HIST 153 (3 hr.)</td>
<td>49</td>
</tr>
<tr>
<td>Western Civilization I</td>
<td>HIST 101 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Western Civilization II</td>
<td>HIST 102 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>General Psychology</td>
<td>PSYC 101 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Human Growth and Development</td>
<td>CD&amp;FS 110 (3 hr.)</td>
<td>51</td>
</tr>
<tr>
<td>Intro. Macroeconomics</td>
<td>ECON 202 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Intro. Microeconomics</td>
<td>ECON 201 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Intro. Sociology</td>
<td>SOCA 101 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>College Math</td>
<td>MATH 121 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>College Algebra</td>
<td>MATH 126 (3 hr.)</td>
<td>48</td>
</tr>
<tr>
<td>Trigonometry</td>
<td>MATH 128 (3 hr.)</td>
<td>54</td>
</tr>
<tr>
<td>College Algebra/Trig.</td>
<td>MATH 129 (4 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Calculus with Elementary Functions</td>
<td>MATH 155 (4 hr.)</td>
<td>49</td>
</tr>
<tr>
<td>General Biology</td>
<td>BIOL 101 and 102 (6 hr.)</td>
<td>49</td>
</tr>
<tr>
<td>(no credit for the labs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Chemistry</td>
<td>CHEM 116 (4 hr.)</td>
<td>70</td>
</tr>
<tr>
<td>Computers and Data Processing</td>
<td>To be determined by the dept.</td>
<td>49</td>
</tr>
<tr>
<td>Intro. to Management</td>
<td>BCOR 370 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Intro. Accounting</td>
<td>ACCT 201 and 202 (6 hr.)</td>
<td>54</td>
</tr>
<tr>
<td>Intro. Business Law</td>
<td>BCOR 320 (3 hr.)</td>
<td>51</td>
</tr>
</tbody>
</table>
page 36 indicates the areas in which WVU grants credit based on the minimum scores required. It should be noted that no student is eligible for CLEP credits after he or she has enrolled at WVU.

A student with at least one year of active military service may receive college-level credit by submitting a copy of his or her DD214 or a SMART or AARTS transcript.

**International Baccalaureate (IB)**

West Virginia University welcomes applications from students who have attended high schools that offer the international baccalaureate program. Credit given varies with level (standard or higher) and with score. The table below shows, for the common subjects, scores needed and WVU equivalents.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Score</th>
<th>Equivalent</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Design</td>
<td>5−7</td>
<td>To be determined by department</td>
<td>Var.</td>
</tr>
<tr>
<td>Biology HL</td>
<td>4−5</td>
<td>BIOL 115</td>
<td>4</td>
</tr>
<tr>
<td>Biology HL</td>
<td>6−7</td>
<td>BIOL 115 and BIOL 117</td>
<td>8</td>
</tr>
<tr>
<td>Biology SL</td>
<td>4</td>
<td>BIOL 101 and BIOL 103</td>
<td>4</td>
</tr>
<tr>
<td>Biology SL</td>
<td>5−7</td>
<td>BIOL 101, BIOL 102, BIOL 103, and BIOL 104</td>
<td>8</td>
</tr>
<tr>
<td>Business &amp; Mgmt.</td>
<td>4</td>
<td>BUSA 101</td>
<td>3</td>
</tr>
<tr>
<td>Business &amp; Mgmt.</td>
<td>5−7</td>
<td>BUSA 101 and ACCT 101</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry HL</td>
<td>5</td>
<td>CHEM 115</td>
<td>4</td>
</tr>
<tr>
<td>Classical Language</td>
<td>5−7</td>
<td>CLAS 204</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science</td>
<td>5−7</td>
<td>ENGR 102</td>
<td>3</td>
</tr>
<tr>
<td>English Lang. (A1)</td>
<td>4</td>
<td>ENGL 131 or ENGL 132 to be determined by the content emphasis of the syllabus</td>
<td>3</td>
</tr>
<tr>
<td>English Lang. (A1)</td>
<td>5−7</td>
<td>ENGL 131 and ENGL 132</td>
<td>6</td>
</tr>
<tr>
<td>Environmental Syst.</td>
<td>4</td>
<td>BIOL 105 and 106</td>
<td>4</td>
</tr>
<tr>
<td>Environmental Syst.</td>
<td>5−7</td>
<td>BIOL 105 and 106 and 4 hrs. of undesignated BIOL credit (BIOL 000)</td>
<td>8</td>
</tr>
<tr>
<td>Geography</td>
<td>5−7</td>
<td>GEOG 102</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>4</td>
<td>3 hrs. of undesignated history credit (HIST 000)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>5−7</td>
<td>HIST 102 and HIST 108</td>
<td>6</td>
</tr>
<tr>
<td>History (Regional Opt.)</td>
<td>5−7</td>
<td>3 hrs. for each regional option completed (contact the department of history for information on particular courses)</td>
<td>Var.</td>
</tr>
<tr>
<td>Islamic History</td>
<td>4</td>
<td>3 hrs. of undesignated history credit (HIST 000)</td>
<td>3</td>
</tr>
<tr>
<td>Islamic History</td>
<td>5−7</td>
<td>6 hrs. of undesignated history credit (HIST 000)</td>
<td>6</td>
</tr>
<tr>
<td>Language A2</td>
<td>5−7</td>
<td>German, French, Russian, or Spanish 302</td>
<td>3</td>
</tr>
<tr>
<td>Language B</td>
<td>5−7</td>
<td>German, French, Russian, or Spanish 301</td>
<td>3</td>
</tr>
<tr>
<td>Math Method SL</td>
<td>5−7</td>
<td>MATH 129</td>
<td>4</td>
</tr>
<tr>
<td>Math Method SL w/h</td>
<td></td>
<td>MATH 150 (Students whose majors require MATH 155 are strongly encouraged to try for extra credit by exam for MATH 155)</td>
<td>3</td>
</tr>
<tr>
<td>Calculus Option</td>
<td>6</td>
<td>MATH 150</td>
<td>3</td>
</tr>
<tr>
<td>Math HL</td>
<td>4−5</td>
<td>MATH 150 (Students whose majors require MATH 155 are strongly encouraged to try for extra credit by exam for MATH 155)</td>
<td>3</td>
</tr>
<tr>
<td>Math HL</td>
<td>6</td>
<td>MATH 156 (Students whose majors require MATH 156 are strongly encouraged to try for extra credit by exam for MATH 156)</td>
<td>4</td>
</tr>
<tr>
<td>Math HL</td>
<td>7</td>
<td>MATH 155 (Students whose majors require MATH 156 are strongly encouraged to try for extra credit by exam for MATH 156)</td>
<td>4</td>
</tr>
<tr>
<td>Music</td>
<td>3</td>
<td>To be determined by the department</td>
<td>Var.</td>
</tr>
</tbody>
</table>
Philosophy ...................... 3–5  
PHIL 101............................................. 3

Philosophy ...................... 6–7  
PHIL 101 and 3 hrs. of undesignated Philosophy credit (PHIL 000) ............... 6

Physics HL ........................ 4–5  
PHYS 105.......................................... 4

Physics HL ........................ 6  
PHYS 101.......................................... 4

Physics HL ........................ 7  
PHYS 101 and PHYS 102............... 8

Psychology SL .................. 5–7  
PSYC 101 and PSYC 202 ............... 6

Psychology HL .................. 5–7  
PSYC 101 and PSYC 202

If a student completes one of the following three option courses, plus one other option course, they can receive credit for one additional (and only one additional) 200-level psychology course, as follows:

(a) The Psychology of Dysfunctional Behavior option course (plus one other option course) would earn credit for PSYC 281 Abnormal Psychology (3 credits), or (b) Lifespan Psychology option course (plus one other option course) would earn credit for PSYC 241 Human Development (3 credits), or (c) Social Psychology option course (plus one other option course) would earn credit for PSYC 251 Social Psychology (3 credits).

Social Anthropology ......... 5–7  
Sociology Open Credit .................... 3

Theatre Arts .................... 5  
To be determined by the department........ Var.

Credit by Examination

A student who is currently enrolled may receive credit for a course or courses upon demonstration of competency in the course content. The department offering the course determines evaluation standards for the student’s competency. If skill and cognitive abilities are components of the course, then both are evaluated. Credit is given only when a satisfactory degree of competency is shown.

A college, school, or department may ask a student to prepare a self-evaluation statement. The purpose of the statement is to determine competency and the methods by which the student achieved it. Any student interested in credit by examination should contact the dean in the college or school offering the course.

500-Level Courses

WVU student: A junior or senior in any class carrying a 500-level course number must have at least a 3.0 cumulative grade point average and written approval on a special form from the instructor and advisor. This form may be obtained from the Office of Admissions and Records.

Non-WVU student: An advanced student who wishes to take an off-campus course numbered 500–599 must submit an undergraduate application for admission and have his or her official transcripts sent to the Office of Admissions and Records from all of the colleges and universities previously attended; the transcript cannot be one sent to the student or by facsimile (fax) transcript. The student must be classified as either a junior or senior and have a cumulative grade point average of at least 3.0 on a 4.0 scale. The special form granting permission to take a 500-level course may be obtained from the student’s advisor.

Graduate Credit via Senior Petition

A student may begin graduate study early through the University’s senior petition policy. A senior petition form may be obtained from the advisor/department and must be signed by the advisor and the dean of the college granting the student’s degree and the dean of the college of the intended graduate degree (if different). An individual from another West Virginia state higher education system school desiring to take a course at WVU must have the form signed by his or her advisor and the registrar. These signatures are necessary to certify that the information contained on the form is correct and that the student has a cumulative 3.0 grade point average. The University has certain policies for a student to enroll in a graduate course for graduate credit. The policies are:
• Senior petition applies only to courses numbered 400–599. Student must be within 12 hours of receiving bachelor’s degree, and grade point average must be at least 3.0 on a 4.0 scale.
• Student can receive only 12 graduate hours through the senior petition.
• Student must have the proper signatures on the senior petition by the time of enrollment in the petitioned courses.

Return the approved senior petition to the Office of Admissions and Records. It is kept on file so that the student receives graduate credit for these courses on the permanent record. The dean of the college or school in which the student is taking graduate courses must approve any exceptions to the policy.

Note: If you receive graduate credit for a course, the credit for that course does not count for your undergraduate degree.

Visitors

Full-time University students may attend classes as visitors. To visit a class, the student must have permission in writing from his or her advisor and the instructor of the course. A member of the administration, teaching staff, or other regular University employees may attend classes as visitors. These individuals must have written permission from their department and the instructor of the class. A visitor does not receive credit for a class and may not apply for credit by exam in a class in which he or she was a visitor.

Auditors

An auditor may register for courses and must pay full fees but does not receive credit for the course. A student who audits a course must let one semester pass before enrolling in the course for credit. A student may change his or her status from audit to grade or grade to audit only during the registration period. Attendance requirements for auditors are determined by the instructor of the course. The instructor may direct the Office of Admissions and Records to remove an auditor from a class list or grade report if attendance requirements are not met.

Summer Sessions

WVU has one summer term, which begins in the middle of May and ends the second week of August. Requirements for admission and work performance for the summer term are the same as for the regular semesters. Courses are offered in a variety of time frames, e.g., one week, three week, six week, and 12 week.

A student may earn credit toward a baccalaureate, master’s, doctoral, or professional degree in the summer term. Summer offerings vary from year to year. For complete information concerning course offerings during the summer term, students should consult the schedule of courses website at http://www.arc.wvu.edu/courses/.

Classification of Students

WVU undergraduates are classified as freshmen, sophomores, juniors, or seniors. These classifications are based upon the number of hours completed. The classifications are as follows:

- Freshman classification 1–28 hours, inclusive
- Sophomore classification 29–58 hours, inclusive
- Junior classification 59–88 hours, inclusive
- Senior classification 89 or more semester hours

Grade Point Average

All academic units of the University have minimum standards of scholastic quality that must be met or exceeded. Grade point average (GPA) is computed on grades earned in courses taken at WVU and institutions in the West Virginia system of higher education only. To be eligible to receive a baccalaureate, a student must have a GPA of at least 2.0 at the time of graduation. Some degree programs require a higher grade point average overall or in the major courses. GPA is based on all work for which a student received a letter grade other than W, WU, and P. See D/F Repeat Policy.
Students are responsible for knowing their grade point standing and can obtain the necessary information from their advisor or the dean of their college or school. GPA is determined according to the method described in the section on grade points.

**Graduation with Honors**

WVU recognizes distinguished academic achievement by awarding degrees cum laude, magna cum laude, and summa cum laude. This distinction can be awarded on initial or second baccalaureates and specified entry-level professional degrees. All candidates for a baccalaureate with a GPA of 3.8 or higher graduate summa cum laude. Those with a grade point average of less than 3.8, but equal to or above 3.6, graduate magna cum laude. Those with a GPA of less than 3.6, but equal to or above 3.4, graduate cum laude.

Grade point average for honors consideration for a baccalaureate is based on baccalaureate-level college work attempted through the next-to-the-last semester or the last semester, whichever GPA is higher. This calculation includes transferable baccalaureate-level college work attempted at all regionally-accredited higher education institutions attended. Credit hours earned with a grade of P or S are not considered in the determination. Grades of F, however, are computed as hours attempted. The GPA for honors consideration for entry-level professional degrees is based on baccalaureate-level and professional-level work attempted through the next-to-the-last semester or through the last semester, whichever GPA is higher. This calculation includes transferable baccalaureate-level and professional-level college work attempted at all regionally accredited higher education institutions attended. Credit hours earned with a grade of P or S are not considered in the determination. Additionally, GPA on WVU work must meet the requirements stated for the level of honors to be designated. If a student’s GPA on WVU work indicates a lower level of honors, then the WVU GPA shall govern the specific designation.

Students entering and completing a second baccalaureate program following completion of the initial degree at the University are eligible to receive the honors designation. Grade point averages for graduation with honors on second baccalaureates shall be computed on the last 80 semester hours of baccalaureate-level work, excluding credit earned with a P or S. At least 30 semester hours must have been completed in the second degree program through the penultimate semester.

A request for an exception to this policy may be made to a student’s dean. After review, the dean will forward all requests for exceptions of this policy to the provost for the final decision.

**Academic Progress**

**Courses**

As a general rule, most courses taught at WVU extend for one semester, although some are taught for eight weeks and others extend for two semesters. Credit is not awarded for a course if a student does not attend the whole course. The only exception to this rule occurs if the Committee on Academic Standards decides to grant such an exception. Grades reported at the end of the first semester in a two-semester course are merely an indication of the quality of the student’s work to that point. Credit is not given for that part of the course completed. Courses taught in the summer term carry the same credit value as fall and spring semester courses.

**Evaluation of Student Progress**

Progress is evaluated by a variety of methods. The measurement and evaluation of learning are consistent with the objectives of the course and provide the opportunity for the student and instructor to evaluate progress. The University discourages evaluation by final examination only. The student is responsible for all materials presented or assigned in scheduled instructional sections. Students who do not complete all assigned work may earn an incomplete (I) or a failing grade (F). A grade of incomplete (I) requires a written contract between the student and instructor and must include a timeline of no more than one semester.
**Finals**
The last week of each semester of the academic year is designated as finals week. Final examinations for the summer term are given on the last day of classes. The website http://www.arc.wvu.edu/courses gives the dates and times for final examinations. (See specific term Course Registration Information link for further information.)

Students who take a section of a multi-section course may be required to take the departmental final examination, given during the regular final examination period.

**Last Week of Classes**
Practical laboratory tests, make-up examinations, and regularly scheduled short quizzes are the only tests permitted for day classes during the week of classes preceding finals week unless the faculty member petitions the associate provost for Undergraduate Academic Affairs and the petition is approved by the beginning of the second week of the semester in which the final exam is to be given. Evening classes have their final exams on the last meeting of the class preceding finals week.

**Grading System**
- A: excellent (given only to students of superior ability and attainment)
- B: good (given only to students who are well above average, but not in the highest group)
- C: fair (average for undergraduate students)
- D: poor but passing (cannot be counted for graduate credit)
- F: failure
- I: incomplete
- W: withdrawal from a course before the date specified in the University calendar
- WU: withdrawal from the University doing unsatisfactory work
- P: pass (see Pass/Fail Grading below)
- X: auditor, no grade and no credit
- CR: credit but no grade
- PR: progress; final grade to be issued at end of the second semester (HSC)
- S: satisfactory
- U: unsatisfactory (equivalent to F)
- H: honors course (medical school courses only)
- INC: permanent incomplete
- IF: incomplete grade not removed by next regular term (computed as an F)
- UF: unforgivable F (not eligible for D/F repeat policy)

**Pass/Fail Grading**
Pass/fail grading encourages students to take elective courses not related to their degree concentrations. Pass/fail grading also facilitates grading in competency-based courses that may be an integral part of an academic program.

**Student Option** Any full-time student who has completed 15 hours or more and who has maintained a 2.0 grade point average may take a maximum of four hours each semester or summer term on a pass/fail basis. Any course taken on a pass/fail basis must be a free elective. Students are limited to a total of 18 hours of pass/fail credit in the collegiate career. Unless otherwise indicated, courses in the major, courses in other subjects that are required by the major, and courses taken to satisfy University, college, school, or departmental requirements are excluded from pass/fail. For example, courses elected to satisfy the General Education Curriculum (GEC) or foreign language requirements may not be taken for pass/fail grading.

**Note:** Only courses numbered 499 or lower may be graded pass/fail. Courses numbered 500 or higher may be graded satisfactory/unsatisfactory (which is included in the normal grading modes).

A course taken on a pass/fail basis is graded as a graded course. The instructor turns in the appropriate letter grade to the Office of Admissions and Records. This letter grade is then converted to a P on the basis of A, B, C, or D for a pass and F for a fail. The grade of P does not affect your grade point average. However, any F grade affects a student’s grade point average whether it is a regular grade or a pass/fail grade.
A student chooses the option of pass/fail grading for a course during the registration period. Once the registration period has ended, he or she may not change the grade status in the course.

**College or School Option** A department or unit may designate any performance- or competency-based course as exclusively pass/fail. To institute this, the college or school must have the approval of the Faculty Senate. Courses offered only as pass/fail are not included in the maximum of 18 hours that may be freely elected as pass/fail under the student option.

**Grade Points**
Each letter grade has a numeric value. Grade points are based on this number value and the credit-hour value of the course.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>U</td>
<td>0</td>
</tr>
</tbody>
</table>

The grade point average is computed on all work for which a student registers, with the following exceptions:

- Courses with a grade of W, WU, P, S, and X carry no grade value. The grade of incomplete (I) initially carries no grade value.
- The grade of I is given when the instructor of the course believes that the work is unavoidably incomplete or that an additional examination is justified. There must be a written contract between the student and instructor, including a timeline for completion of the work. To remove the grade of I, a student does not register for the course again; instead, he or she arranges to submit incomplete or supplemental work to the original instructor of the course.

When a student receives the grade of I and the incomplete grade is later removed, the grade point average is calculated on the basis of the new grade. If the I grade is not removed within the next semester enrolled, the grade is treated as an F (failure). The Academic Standards Committee of the appropriate college or school may allow a student to postpone removal of the I grade if the student can justify a delay.
- If a student is working toward teacher certification, he or she is responsible for every registration in a course in which the grade of A, B, C, D, F, WU, P, X, or I is received.

**GPA Calculations**
Students need to know how to calculate their overall and semester grade point averages. The following example shows how to do it. Assume you are registered for 16 hours and receive the following grades in these courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Grade</th>
<th>Value</th>
<th>Credits x Value</th>
<th>Grade Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101</td>
<td>3</td>
<td>B</td>
<td>3</td>
<td>3 x 3</td>
<td>= 9</td>
</tr>
<tr>
<td>Mathematics 126</td>
<td>3</td>
<td>A</td>
<td>4</td>
<td>3 x 4</td>
<td>=12</td>
</tr>
<tr>
<td>Geology 101</td>
<td>3</td>
<td>C</td>
<td>2</td>
<td>3 x 2</td>
<td>= 6</td>
</tr>
<tr>
<td>Political Science 101</td>
<td>3</td>
<td>B</td>
<td>3</td>
<td>3 x 3</td>
<td>= 9</td>
</tr>
<tr>
<td>Spanish 101</td>
<td>3</td>
<td>D</td>
<td>1</td>
<td>3 x 1</td>
<td>= 3</td>
</tr>
<tr>
<td>Psychology 201</td>
<td>1</td>
<td>P</td>
<td>0</td>
<td>1 x 0</td>
<td>= 0</td>
</tr>
</tbody>
</table>

1. Multiply the credit by the grade value to get the grade points earned for each course.
2. Add the total grade points, in this case, 39.
3. Divide the total grade points earned by the total credit hours with a grade value. Remember that P grades have no grade value, so in this case, there are 15 credit hours for the GPA calculation: 39 divided by 15 = grade point average of 2.6.

D/F Repeat Policy

WVU has a D/F repeat policy for undergraduate students who have not received their initial baccalaureate degree. If a student earns a D or F in a course at WVU or at any school in the WV State System and the course is taken no later than the semester or summer term in which the student completes the sixtieth hour (including any class in which the student earns a grade and transfer classes), the student may “D/F repeat” that course. Academic advisors assist students with completing the appropriate form, which should be filed during the semester in which the student is repeating the course. The course can be repeated only at WVU Morgantown or at one of WVU’s regional campuses. Students have only one opportunity to improve their original grades under the D/F repeat policy. The new grade becomes the grade that counts toward the student’s cumulative GPA and credit hours for graduation, even if the repeated course grade is lower than the original grade in the course. The D/F repeat policy will be enacted any time an eligible course is repeated.

When a course is D/F repeated, the following procedure occurs:

1. The original grade is disregarded for the purpose of determining the overall GPA, it is marked as excluded (E) in the semester that the student originally took the course.
2. The original grade is not deleted from the student’s permanent record.
3. The second grade is entered on the student’s transcript and marked as included (I) in the semester that the course was repeated.
4. Grades of Unforgivable F (UF) are not eligible for D/F Repeat. Such a failure is indicated on the student’s permanent record by an UF and is calculated in the GPA.

Grade Reports

During the seventh week of classes in the fall and spring semesters, instructors submit a grade for all undergraduate students earning grades of D or F in undergraduate courses. These grades are used for counseling, are not recorded on the student’s official transcript, and disappear from the computer system after the semester is completed. These grades are sent first to the Office of Admissions and Records and then to the student via MIX, the student’s advisor, and the dean of the college or school in which the student is enrolled. Final grades are due to Admissions and Records within 48 hours after the end of the University’s final examination and are viewable to students within one week of submission to Admissions and Records. The final grades of all seniors provisionally approved for graduation at the close of each semester or summer term are reported to the deans of the students’ colleges or schools. Special report forms for this purpose are supplied by the student’s dean.

At the end of each semester, grades are available through MIX. If a grade mailer is to be mailed, the student must request it via the Admissions and Records website (http://www.arc.wvu.edu) for each term.

Standards of Satisfactory Academic Progress for Financial Aid

To receive funds administered by the WVU Financial Aid Office, students must be making measurable academic progress toward completion of an eligible degree or certificate program. Federal regulations require evaluation of both quantitative and qualitative academic progress. The policy will be used to evaluate student progress at the conclusion of each fall and spring semester. See http://www.finaid.wvu.edu for the complete policy.

Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 is a federal law which states: (a) that a written institutional policy must be established; and (b) that a statement of adopted procedures covering the privacy rights of students be made available. The law provides that the institution will maintain the confidentiality of student education records.
WVU accords all the rights under the law to students who are declared independent. No one outside WVU shall have access to nor will WVU disclose any information from students’ educational records, without the written consent of students except to personnel within WVU and the West Virginia Higher Education Policy Commission; to persons or organizations providing students’ financial aid; to accrediting agencies carrying out their accreditation function; to persons in compliance with judicial order; to organizations conducting studies for, or on behalf of, education agencies or institutions for the purpose of developing, validating, or administering predictive testing student aid programs, and improving instruction; and to persons in an emergency in order to protect the health or safety of students and or other persons; the victim of an alleged perpetrator of a crime of violence or non-forcible sex-offense (final results of the disciplinary proceeding only); the parent of a student under the age of 21, regarding the violation of any federal, state, or local law or institution policy governing the use or possession of alcohol or controlled substance; or to a student who is the alleged perpetrator of a crime of violence or non-forcible sex offense. All of these exceptions are permitted under the act.

The act also permits disclosure of information from a student’s educational records, without the written consent of students, to parents of a dependent student of such parents, as defined in Section 152 of the Internal Revenue Code of 1954, as amended.

The West Virginia University Policy on the Family Educational Rights and Privacy Act explains in detail the procedures to be used for compliance with the provisions of the act. Copies of the policy can be found in the offices of all deans and directors. The policy also is printed annually in the Daily Athenaeum and can be found at: http://www.arc.wvu.edu/rights.html. The offices of the deans and directors can inform students as to the locations of all records maintained on students by West Virginia University.

**Official Transcripts**

Each copy of an official transcript costs $6.00, payable by cash, check, money order, or credit card. A student may request, in person, an on-the-spot transcript at a cost of $10.00. Transcripts are not available at all times. Because of demand, it may take two or three weeks to process an application for a regular transcript at the close of a semester or summer term. At other times, it is the policy of WVU to process all regular transcript requests within 48 hours of receipt of the request.

A student who owes money or has some other financial obligation to any unit of the University forfeits his or her right to claim a transcript of academic record or diploma until these financial obligations have been met.

When a student applies for a transcript, he or she must furnish his or her last date of attendance and student identification number. The student must indicate the full name under which he or she was enrolled and date of birth. Requests for transcripts must be made in writing to the Office of Admissions and Records, which cannot accept telephone requests because of the risk to the security of the record.

**Final Grade Appeal Procedures (Not Involving Charges of Academic Dishonesty), including Dismissal from an Academic Program**

Students have the right to appeal final course grades which they believe reflect a capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, sex, age, handicap, veteran status, religion or creed, sexual orientation, color, or national origin. The grade appealed shall remain in effect until the appeal procedure is completed or the problem resolved. This procedure provides a mechanism whereby a student may appeal a failing grade or a grade low enough to cause the student to be dismissed from some program or require the repetition of a course. Grade appeals that do not meet this classification are not precluded.

**Step 1.** The student shall discuss the complaint with the instructor involved prior to the mid-semester of the succeeding regular semester, whether the student is enrolled or not. If the two parties are unable to resolve the matter satisfactorily, if the instructor is not available, or if the nature of the complaint makes discussion with the instructor inappropriate, the student shall notify the chairperson of the instructor’s department or division (or,
if none, the dean). The chairperson or dean shall assume the role of an informal facilitator and assist in their resolution attempts. If the problem is not resolved within five academic days from when the complaint is first lodged, the student may proceed directly to Step 2.

Step 2. The student must prepare and sign a document that states the facts constituting the basis for the appeal within five academic days from when the original complaint was lodged. Copies of this document shall be given to the instructor and to the instructor’s chairperson (or, if none, to the dean). If, within five academic days of receipt of the student’s signed document, the chairperson does not resolve the problem to the satisfaction of the student, the student will forward the complaint to the instructor’s dean (see Step 3).

Step 3. Within five academic days of receipt of the complaint, the instructor’s dean shall make a determination regarding the grade, making any recommendation for a grade change to the instructor involved. If the instructor involved does not act on the dean’s recommendation, or if the student disagrees with the decision of the dean, the dean will refer the case to a representative committee, appointed by the dean, for final resolution. This committee shall consist of three or more faculty members, including at least one person outside the instructor’s department.

1. Upon receiving an appeal, the committee will notify in writing the faculty member involved of the grade challenge, which shall include a statement of the facts and evidence to be presented by the student.
2. The committee shall provide to the faculty member involved and the student making the appeal written notification of their right to appear at a hearing to be held before the department, college, or school representative committee, together with the notice of the date, time, and place of the hearing.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. The final decision of this committee shall be forwarded to the instructor and to the dean involved. If the decision requires a change of grade, the instructor shall take action in accordance with the committee’s decision.
5. If the instructor does not act within five academic days, the dean shall make any necessary grade adjustment.
6. In the case of grade appeals, the dean functions as the president’s designee; therefore, implementation of this decision shall end the appeal procedure.

Appeal Procedures for Cases Involving Academic Dishonesty, i.e., Plagiarism, Cheating, and Academic Fraud, Including the Grade of Unforgiveable F (UF)

Academic dishonesty, a serious offense, is defined in West Virginia University Student Conduct Code (Board of Governors Policy 31), which also describes the appeal procedure. Both students and faculty members are responsible for reporting cases of academic dishonesty. Students who suspect academic dishonesty should notify the examination proctor, instructor of the course, or any other appropriate person.

An Unforgiveable F (UF) is a University sanction levied as a result of a violation of the Student Conduct Code Article III (B) 1. Thus, the appeal process for a UF as well as for other cases involving academic dishonesty is different than a standard grade appeal (see above), which follows academic channels that end with a decision by the dean of the college involved. This sanction can be given only after a student has gone through the University student conduct process.

Process to Initiate a Charge of Academic Dishonesty

To initiate and process a charge of academic dishonesty, including plagiarism, cheating, and academic fraud, and/or to begin the process of issuing an Unforgiveable F, the instructor must do the following:

1) Notify the student in writing of the charge and the penalty and schedule a conference within five academic days of discovering the infraction.
2) Meet with the student to discuss the issue, to review all relevant materials, and to complete the Notification of Academic Misconduct (NAM) form (http://facultysenate.wvu.edu) as soon as possible but no longer than five academic days following the discovery of the violation.

If the student accepts responsibility for both the charge and the sanctions, he or she signs the NAM, and the case is closed. Within five academic days of resolution of the case, faculty should make three copies of the NAM form: one for the student, one for faculty records, and one for the Office of Student Judicial Affairs (84 Boreman North, P.O. Box 6430).

If the student does not accept responsibility as charged, he or she may appeal to the chair of the department. If the student and chair reach a resolution, the chair should make three copies of the NAM form: one for the student, one for departmental records, and one for the Office of Student Judicial Affairs (84 Boreman North, P.O. Box 6430). These copies should be distributed within five academic days of resolution of the case.

If the student and the chair do not reach a resolution, the student may appeal to the Student Conduct Board, which is comprised of members of the University Committee on Students Rights and Responsibilities. This appeal must be initiated within five academic days of the student’s meeting with the chair.

4) If the student appeals to the Student Conduct Board, a panel of three faculty and two students or any odd number with faculty comprising the majority will be convened, the case will be examined, and a decision will be reached.

5) If the student disagrees with the decision of the Student Conduct Board, he or she may appeal to the provost, whose decision is final.

Absences

Deadlines

Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer course, or Friday of the second week of a three-week summer course), students may withdraw from individual courses. Deadlines are listed each semester on the Schedule of Courses website: http://www.arc.wvu.edu/courses. If a student follows all established University procedures and withdraws by the published deadline, he or she will receive a W on the transcript. Grade point averages are not affected in any way by this mark; however, the ratio of courses attempted versus courses completed may affect financial aid eligibility.

Procedures

Before withdrawing from individual classes, students should consult an advisor to determine if:

- The course load would be reduced below the minimal requirements set by the student’s college or school. If so, the student must get permission from the Committee on Academic Standards of the college or school.
- The course load would be reduced below the minimal number of hours required to qualify for financial aid, housing, varsity athletic competition, or international full-time student status.
- The courses to be dropped are required to fulfill academic probationary conditions.
- The courses from which the student wants to withdraw might be corequisite with other courses he or she is taking, or prerequisite to other courses required for the next term.

Withdrawal From All Classes for the Term

Deadlines

A student may withdraw from the University any time before the last day of a term on which regular classes are scheduled to meet.

Procedures

- Students who decide to leave WVU during a term should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all financial obligations and for following established procedures. This includes the submission of appropriate information and signature of forms in person at the Office of Admissions and Records.
• Students who are unable to withdraw in person because of illness, accident, or other valid reasons must send notification of their request to withdraw along with all appropriate required information to the Office of Admissions and Records. The request to withdraw must be verified in writing along with a signature. For more information see http://www.arc.wvu.edu.

• If a student is an international student attending WVU on a visa, the student, prior to withdrawing, must first report to the International Student Office, who will give the student a “referral” form to take to the Office of Admissions and Records.

• With the help of their academic advisors, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree, or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.

• Students called to active military duty during any given semester have specific options regarding the credit hours. For more information see http://wvuveterans.wvu.edu.

Financial Aid Refund and Repayment Policy

Federal regulations require that West Virginia University recalculate eligibility for financial assistance for students who completely withdraw, drop out, or are dismissed before completing the enrollment period. Students who receive all unsatisfactory grades (defined as at least one F and no passing grades) at the end of the grading period will be considered as unofficially withdrawn at the semester mid-point unless documentation is available that demonstrates continued class participation. Application of this policy may result in the necessity for a student to return financial aid funds to various Title IV federal aid programs including Federal Pell Grant, Federal SEOG, Federal Perkins Loan, and William D. Ford Federal Direct Student and PLUS loans.

A student earns Title IV federal aid based upon the length of time the student remains enrolled during the enrollment period. Students who withdraw on or before completing more than 60 percent of the semester may be required to return a portion of federal financial assistance. The determination of 60 percent of the term is computed by dividing the total number of calendar days in the term into the number of calendar days completed as of the date of student withdrawal. Scheduled breaks of five consecutive days or more are excluded. The percentage of Title IV assistance which the student has earned is equal to this percentage of the term completed. If the withdrawal occurs after more than 60 percent of the term is completed, the percentage earned is considered to be 100 percent.

If more Title IV aid was disbursed than was earned by the student, WVU is required to return the lesser of (1) the unearned aid percentage of institutional charges or (2) the unearned aid percentage applied to the total Title IV aid received. The student must return unearned aid for which s/he is responsible after subtracting the amount the school will return. Funds are returned in the following priority:

1. Unsubsidized Federal Direct Loan
2. Subsidized Federal Direct Loan
3. Federal Perkins Loan
4. Federal Graduate PLUS Loan
5. Federal PLUS Loan
6. Federal Pell Grant
7. Federal Academic Competitiveness Grant (ACG)
8. Federal SMART Grant
9. Federal SEOG
10. Other Title IV assistance
11. Other federal, state, private, or institutional aid
12. The student

If less Title IV aid was disbursed that was earned by the student, the student is entitled to a post-withdrawal disbursement within 30 days of withdrawal.

The return of financial aid may result in unpaid charges to WVU for tuition/fees and room/board. WVU will bill the student for any balance due. Students who owe a repayment to any federal financial aid program are no longer eligible for financial aid at any post-secondary institution. Eligibility may be regained after repayment is satisfied.
Academic Leave of Absence

WVU offers undergraduate students in good standing, as defined by WVU’s uniform suspension policy and not subject to disciplinary action, the opportunity to request an academic leave of absence. The academic leave of absence is designed for the student who wishes to be away from his or her academic endeavors at WVU for one or more semesters, but intends to return at a later date. Leave of absence status must be requested before the beginning of the semester for which the leave is desired. The academic records of students on an academic leave of absence remain in an active status. While on an academic leave of absence, the student retains the right to use certain campus facilities such as the Study Skills Center and Career Services. When a student decides to return to WVU after his or her academic leave of absence, application fees are waived. If a student attends any institutions of higher education while on leave of absence, an overall average of 2.0 must be obtained on all work attempted in order to be eligible to return. An overall grade point average of 2.0 on all work attempted while on leave combined with the WVU grade point average is also acceptable. While on an academic leave of absence, the student receives communications from WVU. Academic advisors and the Office of Admissions and Records can provide additional details about an academic leave and eligibility requirements.

Other leaves of absence, such as medical, bereavement, or military leave, may be granted during the semester. Please refer to Admissions and Records’ website for more information.

Re-Enrollment After Withdrawal

After you withdraw from WVU in two consecutive semesters (excluding summer term), you may not register for further work without approval of the dean of the college or school in which you want to register, subject to conditions set by that dean.

Committee on Academic Standards

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it. All orders of the committee shall become effective when approved by the dean of the college or school. In exercising its authority, the committee shall not suspend a student during a semester except for willful neglect and in cases where the student’s class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

Probation, Suspension, Readmission, Expulsion Policy

Uniform Probation

Students with a cumulative grade point average below 2.0 may be subject to probation by the dean of their college or school. A unit may require a grade point average above 2.0 or other academic requirements for purposes of determining probation or meeting degree requirements. Students have the right to have the sanction of academic probation reviewed and explained by the academic official who imposed the sanction. Academic probation is not recorded on a student’s permanent record and essentially constitutes a warning to the student of standards that must be met to remain in good academic standing.

Uniform Academic Suspension Regulations

The student whose cumulative GPA falls below 2.0 may be subject to academic suspension by the dean of the college or school, based on the following GPA requirements.
Total Hours Attempted*  | Minimum cumulative GPA*
---|---
10–19  | 0.95
20–24  | 1.13
25–29  | 1.33
30–34  | 1.47
35–39  | 1.57
40–44  | 1.64
45–49  | 1.70
50–54  | 1.75
55–59  | 1.79
60–64  | 1.82
65–69  | 1.85
70–74  | 1.87
75–79  | 1.90
80–84  | 1.91
85 or more  | 1.93

*Includes all hours attempted at institutions in the WV system of higher education. Grades of P are excluded and the D/F repeat policy is applied.

Normally, students are suspended at the end of a semester or summer school term. Deans have the authority to waive suspension in favor of probation if, in their judgment, the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Suspension from the University means that a student will not be permitted to register for any classes, including those in summer term, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is one academic year. A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at WVU upon readmission to the University. Students are not eligible for readmission if they earn less than a 2.0 at other institutions while on suspension from WVU.

After one semester of satisfactory performance at WVU (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer term), the appropriate transfer credit will be entered into the student’s record upon certification by the advisor and dean that the above conditions have been met. A student who has pre-registered and is subsequently suspended shall have his or her registration automatically cancelled.

**Reinstatement After Suspension**

During the semester immediately following the effective date of suspension, suspended students may petition in writing for reinstatement. Colleges and schools establish the terms of reinstatement for successful student petitions. After one calendar year from the effective date of suspension, any student who has been suspended one time may, upon written application, be reinstated to the University. Most students returning from suspension are accepted into the UASC for advising purpose; however, some colleges will accept students returning from suspension. Students interested in returning to WVU from suspension are advised to check with their prior college or school or the UASC for specific instructions.

The college that reinstates the student removes the student’s suspension restriction in Admissions and Records and accepts the student under the terms of probation agreed to by the student and that college. Each college or school shall have the right to establish requirements or performance expectations.

After the second or any subsequent suspension, a student may be reinstated to the University provided that a college or school agrees to reinstate the student. After a student has been reinstated, he or she must apply for readmission through the Office of Admissions and Records.
Fees
Regulations
All West Virginia University fees are subject to change. All fees are due and payable to the Office of Student Accounts prior to the start of classes. Arrangements with the Office of Student Accounts for payment from officially accepted scholarships, loan funds, grants, or contracts must be completed prior to the start of classes.

All students are expected to register on days set apart for registration at the beginning of each semester or summer term of the University. Days are counted from the first day of registration. Any student failing to complete registration on regular registration days is subject to a late registration fee of $50.

Registered students pay the fees shown in the fee charts, plus special fees and deposits as required.

No degree is conferred upon any candidate and no transcripts are issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

It is the policy of WVU to place on restriction students who have outstanding debts to a unit or units of the University. The restriction may include, but is not limited to, the withholding of a student’s registration, diploma, or transcript.

Financial Aid
Students interested in applying for financial aid need to complete a Free Application for Federal Student Aid (FAFSA). This form is the application for all major federal student aid programs and must be received at the federal processing center by March 1 for applicants to receive maximum consideration.

For the summer term a separate WVU Financial Aid Application is also required. Forms are available in the Financial Aid Offices in the Mountainlair, the Health Sciences Center, and the College of Law. The aid that is available in summer is limited and students are encouraged to contact appropriate WVU financial aid staff to obtain information on options for financing summer school costs.

Students can complete a FAFSA on the Internet at http://www.fafsa.ed.gov. Instructions are available at University libraries, computer labs, and in the Financial Aid Offices. It is necessary to submit the FAFSA on an annual basis in order to continue to receive consideration for federal/state student aid programs.

Fees for Extended Learning Courses
Fees for credit hours for off-campus courses are the same as those charged students enrolled in on-campus courses. Extended learning students do not pay the Daily Athenaeum Fee, the Radio Station Fee, Student Recreation Fee, or the Mountainlair Construction Fee. However, all students must pay $40 per credit hour plus a technology fee and library fee per credit hour for each extended learning course taken.

Laboratory Fees
Laboratory fees will be assessed to all students, full-time or part-time, undergraduate or graduate, for each lab section enrolled. Some departments may also have additional fees or rental fees.

Music Fees
Practice Room Fee All music majors must pay a fee of $15 per semester, which entitles them to assigned practice space for one hour per day. Additional space may be available at the rate of $4 per hour.
Instrument Rental $15 per semester.
**Special Fees**

Application for Undergraduate Admission
(Resident) $25.00
(Non-resident) 45.00
Application for Admission (Dentistry and Medicine) 50.00
Application for Admission (College of Law or Graduate Studies) 50.00
Diploma Replacement 35.00
Examination for Advanced Standing 50.00
Graduation 39.00
(Valid by all students at the beginning of the semester or session in which they expect to receive their degrees.)
Late Registration Payment 50.00
(Not charged to students who complete registration during the regular registration days set forth in the University calendar.)
Reinstatement of Student Removed for Non-payment 50.00
Student Identification Card Replacement 20.00
Student Identification Card Replacement (damaged card) 10.00
Official Transcript 6.00
Official Letter 6.00
Statement of Degree Letter, Grade Point Average Letter 6.00
Priority Service (Transcript/Letter) 10.00

**Tuition and Fees**

Undergraduate tuition and fees are listed online at [http://www.arc.wvu.edu/admissions/tuition_fees.html](http://www.arc.wvu.edu/admissions/tuition_fees.html). Costs are subject to change at any time. You also may call Admissions and Records at (304) 293-2121 for more information.

**Non-Sufficient Funds Check Policy and Service Charge**

Payments of tuition, fees, and other charges by check, draft, or money order are subject to WVU's Non-Sufficient Funds Check Policy. A copy of the policy is available in the Office of Student Accounts. A service charge of $25 is collected on each check returned unpaid by the bank upon which it was drawn. A late fee is also assessed. A service charge on unpaid, returned checks is subject to change in accordance with state law.

**Refund of Fees**

A student who officially withdraws from the University is eligible for a refund of tuition according to the published schedule. Every effort is made to process refunds within 30 days. A student who drops one or more classes during the first week of the term will receive a full refund of the dropped class(es). However, classes dropped after the first week of the term will not be eligible for ANY refund of tuition and fees, which includes lab fees.

To withdraw from the University officially and receive a refund, a student must apply at the Office Admissions and Records. Tuition, special fees, the optional health service fee, and certain miscellaneous fees are refundable based upon the date of withdrawal and student status.* Miscellaneous fees that are not refundable include the application fee, transcript fee, graduation fee (if graduating), late registration/payment fee, and reinstatement fee.

**Exceptions**

Students entering the armed services of the United States may be granted full refund of refundable fees (but no course credit) if the call comes before the end of the first three-fourths of the semester. If the call comes after that, full credit for courses may be granted if the student has passing grades at the time of departure.

Students withdrawn due to catastrophic illness or death will be provided a refund as approved by the dean of Student Life or his or her designee.

If a student drops below full-time status (12 hours for undergraduates or nine for graduate students), tuition, special, and certain miscellaneous fees are refundable based upon the date of the course drops. The optional health fee, application fee, transcript fee, graduation fee, late registration/payment fee, and reinstatement fee are not refundable.

*Note:* If you withdraw and are receiving federal financial aid, it is possible that you may have to repay all or a portion of the federal funds received. Please check with the Financial Aid Office for more details.
Refund Schedules for Official Withdrawal from the University
Fall and Spring Semesters

Refund Period    Refund Period
1st Week 100%    9th Week 0
2nd Week 90%    10th Week 0
3rd Week 70%    11th Week 0
4th Week 70%    12th Week 0
5th Week 50%    13th Week 0
6th Week 50%    14th Week 0
7th Week 0    15th Week 0
8th Week 0    16th Week 0

Cost of an Academic Year’s Work (2008–09)

The Student Financial Aid Office estimates that the total cost of attending WVU for a nine-month academic year is $15,388 for single West Virginia residents living on campus, $15,636 for single West Virginia residents living off campus, and $11,380 for those living at home. The total cost for single non-residents living on campus is $26,056; for single non-residents living off campus, $26,304; and for non-residents living at home, $22,048. These typical estimated student budgets include tuition and fees, books and supplies, room, board, transportation, and personal expenses to provide a modest but adequate lifestyle.

Identification Card

An identification card is issued to each student when appropriate fees are paid in full. It admits the owner to certain University athletic events, various activities of student administration, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

Policy on Residency Classification

Section 2. Classification for Admission and Fee Purposes

2.1 Students enrolling in a West Virginia public institution of higher education shall be assigned a residency status for admission, tuition, and fee purposes by the institutional officer designated by the president. In determining residency classification, the issue is essentially one of domicile. In general, the domicile of a person is that person’s true, fixed, permanent home and place of habitation. The decision shall be based upon information furnished by the student and all other relevant information. The designated officer is authorized to require such written documents, affidavits, verifications, or other evidence as is deemed necessary to establish the domicile of a student. The burden of establishing domicile for admission, tuition, and fee purposes is upon the student.

2.2 If there is a question as to domicile, the matter must be brought to the attention of the designated officer at least two weeks prior to the deadline for the payment of tuition and fees. Any student found to have made a false or misleading statement concerning domicile shall be subject to institutional disciplinary action and will be charged the nonresident fees for each academic term theretofore attended.

2.3 The previous determination of a student’s domiciliary status by one institution is not conclusive or binding when subsequently considered by another institution; however, assuming no change of facts, the prior judgment should be given strong consideration in the interest of consistency. Out-of-state students being assessed resident tuition and fees as a result of a reciprocity agreement may not transfer said reciprocity status to another public institution in West Virginia.
Section 3. Residence Determined by Domicile

3.1 Domicile within the state means adoption of the state as the fixed permanent home and involves personal presence within the state with no intent on the part of the applicant or, in the case of a dependent student, the applicant’s parent(s) to return to another state or country. Residing with relatives (other than parent(s)/legal guardian) does not, in and of itself, cause the student to attain domicile in this state for admission or fee payment purposes. West Virginia domicile may be established upon the completion of at least 12 months of continued presence within the state prior to the date of registration, provided that such 12 months’ presence is not primarily for the purpose of attendance at any institution of higher education in West Virginia. Establishment of West Virginia domicile with less than 12 months’ presence prior to the date of registration must be supported by evidence of positive and unequivocal action. In determining domicile, institutional officials should give consideration to such factors as the ownership or lease of a permanently occupied home in West Virginia, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering of motor vehicles in West Virginia, possessing a valid West Virginia driver’s license, and marriage to a person already domiciled in West Virginia. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established. Factors mitigating against the establishment of West Virginia domicile might include such considerations as the student not being self-supporting, being claimed as a dependent on federal or state income tax returns or the parents’ health insurance policy if the parents reside out of state, receiving financial assistance from state student aid programs in other states, and leaving the state when school is not in session.

Section 4. Dependency Status

4.1 A dependent student is one who is listed as a dependent on the federal or state income tax return of his or her parent(s) or legal guardian or who receives major financial support from that person. Such a student maintains the same domicile as that of the parent(s) or legal guardian. In the event the parents are divorced or legally separated, the dependent student takes the domicile of the parent with whom he or she lives or to whom he or she has been assigned by court order. However, a dependent student who enrolls and is properly classified as an in-state student maintains that classification as long as the enrollment is continuous and that student does not attain independence and establish domicile in another state.

4.2 A non-resident student who becomes independent while a student at an institution of higher education in West Virginia does not, by reason of such independence alone, attain domicile in this state for admission or fee payment purposes.

Section 5. Change of Residence

5.1 A person who has been classified as an out-of-state student and who seeks resident status in West Virginia must assume the burden of providing conclusive evidence that he or she has established domicile in West Virginia with the intention of making the permanent home in this state. The intent to remain indefinitely in West Virginia is evidenced not only by a person’s statements, but also by that person’s actions. In making a determination regarding a request for change in residency status, the designated institutional officer shall consider those actions referenced in Section 3. The change in classification, if deemed to be warranted, shall be effective for the academic term or semester next following the date of the application for reclassification.

Section 6. Military

6.1 An individual who is on full-time active military service in another state or foreign country or is an employee of the federal government shall be classified as an in-state student for the purpose of payment of tuition and fees, provided that the person established a domicile in West Virginia prior to entrance into federal service, entered the federal service from West Virginia, and has at no time while in federal service claimed or established a domicile in another state. Sworn statements attesting to these conditions may be required. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.
6.2 Persons assigned to full-time active military service in West Virginia and residing in the state shall be classified as in-state students for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

Section 7. Aliens

7.1 An alien who is in the United States on a resident visa or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia as defined in Section 3, may be eligible for in-state residency classification, provided that person is in the state for purposes other than to attempt to qualify for residency status as a student. Political refugees admitted into the United States for an indefinite period of time and without restriction on the maintenance of a foreign domicile may be eligible for an in-state classification as defined in Section 3. Any person holding a student or other temporary visa cannot be classified as an in-state student.

Section 8. Former Domicile

8.1 A person who was formerly domiciled in the state of West Virginia and who would have been eligible for an in-state residency classification at the time of his or her departure from the state may be immediately eligible for classification as a West Virginia resident provided such person returns to West Virginia within a one-year period of time and satisfies the conditions of Section 3 regarding proof of domicile and intent to remain permanently in West Virginia.

Section 9. Residency Decisions/Appeals

Following is the process for initially determining residency for tuition purposes and how students appeal if they disagree with those decisions. Initial residency decisions are made at the admission level. Any questionable decisions are referred to the designated institutional official who determines whether the student meets the residency requirements or additional information is needed to make the decision. If additional information is needed, the student is requested to submit further documentation. If a student feels he or she has been improperly classified as a non-resident for tuition purposes, he or she should request an application for classification as a resident student at West Virginia University. To request this application write: Residency Officer, Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009, call (304) 293-2121 or go to http://www.arc.wvu.edu/admissions/residency_policy.html.

Once the application and supporting documents are received, a decision is made by the designated institutional official. If the student meets the requirements as outlined by the Higher Education Policy Commission Series 25, the student is granted residency for the upcoming semester. If the student does not meet the necessary requirements, the student is denied in-state residency. If denied, the student has the option of appealing the decision to the WVU Council on Residency. The council consists of faculty and student representatives, whose number shall be at least three. The student representative(s) shall be appointed by the president of West Virginia University Student Administration while the faculty representative(s) shall be selected by the University Faculty Senate. The student contesting a residency decision shall be given the opportunity to appear before the institutional committee on residency appeals.

If the council overturns the initial denial, the student becomes a resident for the semester in question. Should the council uphold the original denial, the student has the option of appealing to the president of WVU and/or the president’s designee. The president and/or his designee, again, may either uphold the original denial or overturn the decision of the council.

Residency appeals shall end at the institutional level.
Courses

Plan for Numbering Courses
For convenience, each course of study is designated by the name of the department in which it is given and by the number of that course. The plan for numbering courses is as follows:

Courses 1–99 Developmental and community college certificate courses (does not require WVU Faculty Senate approval) and undergraduate professional development courses (courses that are designed for professional development and require students to possess a high school diploma but the course would not count toward graduation).

Courses 100 Freshman/Lower Division: Intended primarily for freshmen although they may be taken by upper-division students if needed to complete degree requirements.

Courses 200 Sophomore/Lower Division: Intended primarily for sophomores. These courses may have 100 or 200-level prerequisites.

Courses 300 Juniors/Upper Division: Intended primarily for juniors. These courses may have extensive prerequisites or be limited to specific majors.

Courses 400 Seniors/Upper Division: Intended primarily for seniors and selected graduate students. These courses are typically limited to advance undergraduates within a particular major or degree program and selected graduate students. No more than 40 percent of the credits counted for meeting requirements for a graduate degree can be at the 400 level.

Courses 500 Undergraduate Seniors and Master’s Level: Courses intended for advanced undergraduate and graduate students. Seniors may enter via petition/special permission. Undergraduates in any class carrying a 500-level course number must have a 3.0 cumulative grade point average and written approval on special forms from the course instructor and the student’s advisor(s).

Courses 600 Master’s Level: Courses intended for master’s degree students (no undergraduate enrollment permitted).

Courses 700 Master’s and Doctoral Degree Level: Courses intended for doctoral students, and advanced master’s students (no undergraduate enrollment permitted).

Courses 900 Professional Development: Courses intended for professional development and require students to possess a bachelor’s degree, but the courses do not count toward graduation and are not applicable towards a graduate degree. Grading is S/U only.

Abbreviations Used in Course Listings
I a course given in the first (fall) semester
II a course given in the second (spring) semester
I, II a course given each semester
I and II a course given throughout the year
Yr a course continued through two semesters
S a course given in the summer
Hr credit hours per course
lec lecture period
rec recitation period
lab laboratory period
Conc concurrent registration required
PR prerequisite
Coreq corequisite
consent consent of instructor required
CR credit but no grade
An asterisk (*) following credit hours listed as variable indicates that the course normally carries three credit hours. Exceptions are made only in emergencies and must be approved by the departmental chair and by the professor teaching the course.
**Undergraduate Common Course Numbers**

199. *Orientation to [subject/field]*. 1Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.


490. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience*. I, II, S. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study*. I, II, S. 1-3 Hr. Directed study, reading, and/or research.


494. *Seminar*. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study*. I, II, S. 1-6 Hr. Faculty-supervised study of topics not available through regular course offerings.


498. *Honors*. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.
Degrees Offered

- Bachelor of Science in Business Administration
  - Accounting
  - Finance
  - Management
  - Management Information Systems
  - Marketing
- Bachelor of Science in Economics
- Coordinated Dual Degrees in Business and Foreign Languages (B.F.L.)

Historical Background

The College of Business and Economics was founded in November of 1951 and graduated its first class in the spring of 1953. Since that time, the college has become one of the largest colleges at West Virginia University. In 1954, the College became fully accredited by The Association to Advance Collegiate Schools of Business (AACSB) International, the highest level of business accreditation.

The College of Business and Economics building is located on the site of old Mountaineer Stadium on the downtown campus adjacent to historic Woodburn Hall. The four-story facility houses modern classrooms, including three high technology distance-learning classrooms, two auditoriums, state-of-the-art computer laboratories, and space for the college’s research and service centers.

Mission

The College of Business and Economics, in a student-centered environment, will meet the evolving needs of its constituencies in a global economy through the creation, dissemination and implementation of knowledge. In everything we do, we strive to act with honesty, openness, fairness and integrity. As part of a land-grant institution, we have a special responsibility to the citizens of West Virginia.

Vision

We seek to enhance the effectiveness of business via our educational and research programs thereby providing innovative and valued service to the university, region, and world. We achieve this through fostering a culture of integrity, inclusion, collaboration and respect for diverse ideas. We are committed to maintaining an entrepreneurial culture that encourages innovation. We seek to practice ethical leadership in all we do. As part of this, we are committed to maintaining accreditation by The Association to Advance Collegiate Schools of Business (AACSB) International.

We create knowledge on important business issues through published research, innovative learning experiences, and involvement with the constituents we serve. We seek to be a leader in research through the pursuit of cutting-edge inquiry impacting theory and practice. We seek to build a national reputation in emerging areas of business to complement and expand our expertise in global, entrepreneurship, free markets and forensic business research.
We disseminate knowledge through a commitment to providing a high quality learning environment that allows students, faculty, and staff to exceed their own performance expectations and thereby provide a substantial differential value in all that we do. This learning environment focuses on all dimensions of learning—knowledge, experience, understanding, skills, behaviors, values, and attitudes. We seek to develop professionals capable of applying timely knowledge from business functions, of collaborating effectively across functions, disciplines and cultures, and fostering personal growth.

We implement knowledge through seeking learning partnerships that foster sustainable enterprises and careers. We achieve this through collaborations with alumni, business, educational and community partners, our goal of our service initiatives is to enhance the quality of life of our constituents. Given our location and heritage as a land-grant institution, we place particular emphasis on fueling economic development of West Virginia and the greater Appalachian region.

**Statement of Quality**

The faculty, staff, administrators, and student employees of the College of Business and Economics are committed to being responsive, sensitive, and understanding to the needs of the students and to the needs of each other. Our conduct shall be positive, professional, and supportive to all.

**Accreditation**

Business programs in the College of Business and Economics are accredited by The Association to Advance Collegiate Schools of Business International (AACSB International) at the undergraduate and graduate levels. AACSB International accreditation assures students and prospective employers that our programs adhere to the highest standards of excellence in worldwide recognized business programs. The college has maintained full accreditation in the AACSB International since 1954.

**Honor Societies**

Beta Gamma Sigma Honorary for B.S.B. Ad. candidates of all majors.
Beta Alpha Psi for accounting majors.

**Center for Career Development**

The mission of the Center for Career Development focuses on helping students pursue as many career options as possible, while preparing them to meet challenges in today’s marketplace. The center offers services that include: facilitating employment interviews with corporate representatives from a wide range of firms, developing valuable internship opportunities, organizing seminars, conducting interview workshops, sponsoring corporate networking events, offering counsel and advice to help students clarify and achieve their career goals, publishing a weekly online newsletter with information about full-time and internship opportunities and the latest information about the job market, and instructing a professional development course for students that focuses on the tools of the job search. The center also organizes career fairs and networking events that enable students to interface with potential employers and explore career options. These services are available to all students within the college, both graduate and undergraduate.

**Technology**

The array of technology available to students in the College of Business and Economics is impressive. Through coursework, students develop skills with technology and its application to business. Business students have access to standard and specialized business software, e-mail, and Internet services through two computer labs in the Business and Economics building.
Students use the latest word processing, spreadsheet, database, and presentation software. Each student is encouraged to buy a personal computer; special purchase plans are available through the WVU Technology Service Center. A wireless network provides Internet access from anywhere in the Business & Economics building to students with properly equipped laptop computers. In addition, all general purpose classrooms have multimedia presentation capabilities, and the building houses three fully equipped distance-learning sites.

**Careers**

Students pursuing the degree of bachelor of science in business administration must select an academic major at the time of application to the college. Some career opportunities for each major are indicated in the description of the major in later sections. All majors emphasize scholarly and professional education rather than training for a first position.

**Student Organizations**

Accounting Club; Alpha Kappa Psi; Beta Alpha Psi; Delta Sigma Pi; Economics Club; Entrepreneurship Club, SIFE Club; Finance and Banking Club; Industrial Relations Student Association; MBA Association; MPA Association; MIS Association; SHRM Club; Marketing Club; Thompson’s Economics Club.

**Research Centers and Outreach Programs**

**Bureau of Business and Economic Research**

Founded in 1948, the bureau conducts basic research relating to the West Virginia economy and its economic development. Active programs include: West Virginia Economic Outlook with short- and long-term forecasts of the state and its regional economies; West Virginia Public Finance Program with studies on state and local taxes; special industry studies including energy, chemicals, tourism, and the arts; target industry and labor market studies; strategic planning; statewide and regional economic outlook conferences; and special studies for the executive and legislative branches of West Virginia government as well as the private sector. Publications include the *West Virginia Business and Economic Review*, *County Data Profiles*, and the *Morgantown MSA Economic Monitor*. Undergraduate research assistants assist with many bureau studies. Visit our Website at: http://www.bber.wvu.edu for details.

**Entrepreneurship Center**

Established in 2002, the WVU Entrepreneurship Center serves the entire University community. The WVU Entrepreneurship Center is the premier educational resource in the state of West Virginia that facilitates, supports, and promotes entrepreneurship and the free-market private enterprise system. In 2005 the Center launched a minor in entrepreneurship open to all non-College of Business and Economics majors. This 15-credit minor allows the student to develop key skills essential for success in entrepreneurship. The Entrepreneurship Center hosts the Statewide Collegiate Business Plan Competition in which teams of students from colleges and universities across West Virginia, with the help of trained professionals, develop business plans for their business ideas to be judged by a panel of experts. The winning team receives a grand prize consisting of seed money and business services to help start a new business in the state. Through partnerships, the center also actively participates in a student intern program which provides students with real world experience. The center sponsors the Entrepreneurship Club and is actively involved in outreach promoting entrepreneurship across the state.

**Center for Executive Education**

The goal of the Center for Executive Education is to strengthen businesses, industry clusters, and individual leadership capacity by maximizing human capital. This is accomplished through the development and delivery of innovative executive education and experiential learning programs and comprehensive business services. The center helps decision-makers from all industries become more dynamic leaders, more effective managers, and more valuable team members.
The center uses college and university faculty, augmented by outside subject matter experts, to deliver high-quality programs and business services for businesses and industry clusters using state-of-the-art technology. Examples of business services include executive coaching, facilitation of strategic planning sessions, and mediation services.

**Center for Chinese Business**

The Center for Chinese Business provides management education, research, and business facilitation services focused on the emerging market economy in China. The goals of the center are to advance understanding between the business communities in China and the United States, to educate Chinese leaders on contemporary business and management practices in the U.S. and the global economy, and to increase exposure of U.S. and Chinese businesses to opportunities for mutually advantageous collaboration. In fulfilling its mission the center fosters the development of close relationships between and among academic communities and business and governmental entities in the U.S. and China. Special emphasis is placed on cultivating mutually beneficial ties between China and West Virginia.

**Admission to the College**

**Admission for WVU Students in Morgantown and Regional Campuses**

The College of Business and Economics welcomes applications for admission to its B.S. in business administration and B.S. in economics programs. Students must submit a formal application for admission. Applications are accepted electronically by accessing the college’s Website at www.be.wvu.edu. Undergraduate students will be admitted to the college only in the fall and spring semesters. For fall admissions, the college accepts applications on the first day of spring semester classes through February 15th. Applications received after February 15th will be considered for the next application period. For spring admissions, the College accepts applications on the first day of fall semester classes through September 15th. Applications received after September 15th will be considered for the next application period. First semester WVU transfer students are exempt from the application deadlines.

To apply for admission to the College of Business and Economics, students must have completed 58 or more credit hours including the following courses by the end of the semester of application.

- Six hours of principles of accounting (ACCT 201 and 202) with a C grade or better.
- Six hours of principles of economics (ECON 201 and 202) with a C grade or better.
- Three hours of statistics (ECON 225 or STAT 211) with a C grade or better.
- Three hours of college algebra (MATH 126) with a C grade or better and three hours of calculus (MATH 150) with a passing grade for the B.S. in business administration, or a grade of C or better for the B.S. in economics. MATH 153 and 154 with a C grade or better or a higher level of calculus may be used to satisfy the mathematics requirements.
- Six hours of composition and rhetoric (ENGL 101 and 102) with a C grade or better.
- Four hours of computer applications (CS 101) with a passing grade.

To apply, students must also have at least a cumulative GPA of at least 2.5 at the time of application. Students with cumulative GPAs at or above 2.5 will be considered by descending GPA for admission into the College as space permits. Demand for entry into business programs is cyclical and recently competition has been especially keen. In recent semesters a GPA substantially above 2.5 has been required for admission to the college. Students attending the WVU campus in Morgantown or the regional WVU campuses are welcome to apply for admission during the semester in which they will complete the above requirements. No student with a GPA below 2.5 will be considered for admission.

**Admission for Transfer Students**

Transfer students must have completed all course and grade requirements and must have grade point averages at or above 2.5 to be eligible to apply for admission to the College. The College will admit eligible transfer students with grade point averages at or above the most recent cutoff GPA for on-campus applicants. For this purpose, the grade point average will be calculated using both WVU coursework and all college-level work attempted at other institutions.
Pre-Business and Economics

High school students interested in professional careers in accounting, economics, finance, management, management information systems, or marketing should seek admission into a pre-business and economics program through the Undergraduate Advising Services Center, located in the Student Services Center. Phone (304) 293-5805.

Prerequisites for Non-Business and Economics Students

To enroll in any upper-division, undergraduate business course, except the BUSA survey courses, non-business and economics undergraduate students must meet the requirements for admission to the College of Business and Economics, which include completion of all course prerequisites, possession of junior rank, and attainment of the cumulative GPA required for admission in the specified term.

Recommended Business Courses for Non-B&E Students

Students outside of the College of Business and Economics may earn a minor in business administration by completing the following courses and meeting the requirements as stated below.

<table>
<thead>
<tr>
<th>Course Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>3</td>
</tr>
<tr>
<td>BUSA 310 (Business Law)</td>
<td>3</td>
</tr>
<tr>
<td>BUSA 320 (Management)</td>
<td>3</td>
</tr>
<tr>
<td>BUSA 330 (Marketing)</td>
<td>3</td>
</tr>
<tr>
<td>BUSA 340 (Finance)</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
</tr>
</tbody>
</table>

- BUSA 320 and 340 are offered in fall and summer only. BUSA 310 and 330 are offered in spring and summer only.
- No substitutions are permitted for the above courses.
- To qualify for a minor in business a student must have earned an overall GPA of 2.0 in all courses required.
- This minor is not available to any student seeking a B.S. degree in the College of Business and Economics.

Work Taken at Other Institutions

Students seeking a degree from the College of Business and Economics and wishing to take work at other AACSB-accredited institutions must have their courses approved by the dean of the College of Business and Economics before registering at another institution. Ordinarily, required business courses must be taken at WVU.

Maximum and Minimum Load

A minimum of 12 hours in a semester is required for full-time status in the College of Business and Economics. The maximum load is 19 hours. Exceptions to the minimum or maximum load require approval of the student’s academic advisor before registration. Students seeking to withdraw from individual courses must petition the Academic Standards Committee whenever the remaining load falls below the required minimum, even though all other conditions supporting the request for the individual course withdrawal may be in order.

Undergraduate Advising

Eligible students are admitted into the College of Business and Economics through the Office of Undergraduate Programs and Advising, Room 358, Business and Economics Building. The telephone number is (304) 293-4959. Professional academic advisors assist upper-division business majors with academic planning and career counseling. Course
registration, graduation certification, and senior certification are also administered by this office. Any business student in need of academic advising may make an appointment with an advisor upon request.

Requirements for Bachelor’s Degrees
To qualify for either the bachelor of science in business administration or the bachelor of science in economics, each student must have the following:

- 128 semester hours of coursework with a 2.0 grade point average (C) on all work attempted at WVU and state institutions under the jurisdiction of the West Virginia Higher Education Policy Commission.
- An average of 2.0 (C) or better average on all business and economics coursework attempted.
- An average of 2.0 (C) or better in coursework attempted in the area of concentration (excludes required or elective courses in other disciplines in business or economics).
- At least 30 semester hours in business and economics courses in residence after admission to the college.

All students must satisfy the University’s General Education Curriculum (GEC) requirements. Each student must complete coursework that satisfies the learning objectives for the GEC. They are:

Objective 1: Communication (English 101 and 102); Objective 2: Math and Science (Math 126 or a higher level of math, Computer Science 101, Natural Science, Natural Science with Lab); Objective 3: The Past and Its Traditions; Objective 4: Contemporary Society; Objective 5: Artistic Expression; Objective 6: The Individual in Society, University 101; Objective 7: American Cultural Diversity; Objective 8: Western Culture; Objective 9: Non-Western Culture. Note: Psychology 101 and Sociology 101 are required of all candidates seeking the degree of bachelor of science in business administration.

The American economy is a globally diverse one; therefore, it is highly recommended that pre-business and economics majors consider taking a minimum of six consecutive semester hours of a foreign language. These hours may be counted as part of GEC requirements. Many future jobs and careers may require some foreign language proficiency.

While the preceding constitute the general requirements of the bachelor’s degrees awarded by the College of Business and Economics, course requirements, specific grade requirements, and related academic requirements differ among various programs. Please contact the college for more information.

Bachelor of Science in Business Administration
Admission to the B.S. in business administration degree program requires admission to the College of Business and Economics. These requirements are indicated on previous pages. The requirements for completion of the B.S. in business administration are:

- 56 semester hours outside business and economics.
- 5–8 semester hours of unrestricted courses in or out of the College of Business and Economics.
- 37 hours in the college’s core courses in business and economics.
- 27–30 hours in an area of concentration (accounting, finance, management, management information systems, or marketing). Degree requirements are presented in chart form in subsequent sections.

Since students interested in business careers matriculate in the pre-business and economics programs during their freshman and sophomore years and since they transfer and matriculate in the College of Business and Economics in their junior and senior years, several critical curricular requirements are cited below.

Relative to pass-fail courses and grading, University regulations limit full-time junior and senior students with a 2.0 GPA or higher to a maximum of four semester hours each term. Courses taken for pass-fail grading must be free electives and cannot exceed a total of 18 hours of credit. The college permits pass-fail grading in business and economics courses only in “free” electives and only where the student has met all requirements (including business and economics elective requirements) and only where the course is not necessary to fulfill the various program and 128-semester hour degree requirements.
Students majoring in any of the areas of business must average a 2.0 (C) or better in courses in their areas of concentration (excludes required or elective courses in other disciplines in business or economics).

A maximum of three semester hours earned as a result of proctoring a self-paced undergraduate course, after entering the College of Business and Economics, may be applied towards the 128 credit hours required for a B.S. degree.

<table>
<thead>
<tr>
<th>Degree Requirements</th>
<th>Hrs.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting, Finance, Management, Management Information Systems, and Marketing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-B&amp;E Courses (freshman and sophomore years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective 1: Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English 101</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>English 102</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Objective 2: Math and Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Math 126 or 153 with a grade of C or better</td>
<td>3–4</td>
<td></td>
</tr>
<tr>
<td>Computer Science 101</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Natural Science</td>
<td>3–4</td>
<td></td>
</tr>
<tr>
<td>Natural Science (w/ Lab)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Objective 3: The Past &amp; Its Traditions</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Objective 4: Contemporary Society</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Objective 5: Artistic Expression</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Objective 6: The Individual in Society</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>University 101</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Objective 7: American Cultural Diversity</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Objective 8: Western Culture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Objective 9: Non-Western Culture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>College Math Requirement: Math 150, 154, 155, or 156</td>
<td>3–4</td>
<td></td>
</tr>
<tr>
<td>Other Electives—non-business and economics</td>
<td>8–11</td>
<td></td>
</tr>
<tr>
<td>Psychology 101 and Sociology 101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Unrestricted electives recommended for juniors and seniors</td>
<td>5–8</td>
<td></td>
</tr>
<tr>
<td>(see major program requirements)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core courses in business and economics</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Core courses in area of concentration</td>
<td>27–30</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>128</td>
<td></td>
</tr>
</tbody>
</table>

*The mathematics requirement for all students seeking admission as a business student to the College is the completion of MATH 126 *College Algebra* with a grade of C or better and the completion of MATH 150 *Introduction to Calculus* with a passing grade. A grade of C or better in MATH 154, 155, or 156 would also meet the college’s mathematics requirements.

**Business Core Curriculum**

All bachelor of science in business administration majors must complete the 37 credit-hour business core curriculum. Fifteen hours of the core curriculum are taken in the sophomore year (ACCT 201 and 202; ECON 201, 202, and 225) and 22 hours are taken during the junior and senior years (BCOR 315, 320, 330, 340, 350, 360, 370, and 460). The BCOR courses provide an integrated and cross-functional introduction to the business disciplines and emphasize technology, teamwork and leadership skills, professional development, and communication skills.

<table>
<thead>
<tr>
<th>Required College Core Courses</th>
<th>Hrs.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sophomore year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT 201 and 202 <em>Principles</em></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ECON 201 and 202 <em>Principles</em></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ECON 225 <em>Elementary Business and Economics Statistics</em></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Junior year
BCOR 315 Professional Development ................................................................. 1
BCOR 320 Legal Environment of Business....................................................... 3
BCOR 330 Information Systems and Technology............................................. 3
BCOR 340 Business Finance............................................................................. 3
BCOR 350 Principles of Marketing .................................................................. 3
BCOR 360 Operations Management ................................................................. 3
BCOR 370 Managing Individuals and Teams.................................................... 3

Senior year
BCOR 460 Contemporary Business Strategy.................................................... 3

Subtotal ............................................................................................................ 37

Courses in major field and electives (junior and senior years) ....................... 27–30

Bachelor of Science in Economics

A knowledge of economics is essential for the understanding of a wide range of domestic and international issues. In economics courses the use of resources and the processes involved in production, distribution, and consumption of goods and services in the American and other economic systems are systematically studied. Undergraduate study in economics includes analysis of the development, organization, and functions of the economy. It involves analysis of the behavior of components of the economy such as households, businesses, and governments, as well as the pricing, development, and use of resources, and regional and community development.

The Department of Economics offers courses designed to prepare the student for work in government and industry, for additional study in economics at the graduate level, and for professional studies in areas such as law, business administration, and public administration.

MATH 154 or 155, and 156 are recommended in lieu of MATH 150 for students interested in graduate work in economics. Students are encouraged to take additional mathematics courses beyond MATH 156.

Admission to the B.S. in economics degree program requires admission to the college. These requirements are indicated on previous pages. In addition, admission to economics requires a grade of C or better in calculus and a minimum grade of B and C in Economics 201 or 202.

Students who major in economics must complete 62 credit hours in non-economics and non-business courses. These shall consist of WVU GEC courses and elective courses.

Degree Requirements
Non-Business and Non-Economics Courses

<table>
<thead>
<tr>
<th>Objective 1: Communication</th>
<th>ENGL 101.................................</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>ENGL 102.................................</td>
<td>3</td>
</tr>
<tr>
<td>Objective 2: Math and Science</td>
<td>MATH 126 or 153 with a grade of C or better</td>
<td>3–4</td>
</tr>
<tr>
<td></td>
<td>Computer Science 101....................</td>
<td>4</td>
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<tr>
<td></td>
<td>Natural Science..........................</td>
<td>3–4</td>
</tr>
<tr>
<td></td>
<td>Natural Science (w/Lab)...............</td>
<td>4</td>
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<tr>
<td>Objective 3: The Past &amp; Its Traditions</td>
<td>Economics 201 ............................</td>
<td>3</td>
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<tr>
<td>Objective 4: Contemporary Society</td>
<td>University 101 ............................</td>
<td>1</td>
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<tr>
<td>Objective 5: Artistic Expression</td>
<td>Economics 202 ............................</td>
<td>3</td>
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</tbody>
</table>
Objective 9: Non-Western Culture ................................................................. 3
College Math Requirement: Math 150, 154, 155 or 156 .......................... 3–4
Other Electives (non-Business and Economics) ........................................ 20–23
Subtotal ........................................................................................................ 68
Unrestricted Electives .................................................................................. 6

**B.S. in Economics Required College Core Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACCT 201</td>
<td>Principles of Accounting</td>
<td>6</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics Principles</td>
<td>3</td>
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<tr>
<td>ECON 225</td>
<td>Elementary Business and Economics</td>
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<tr>
<td>ECON 301</td>
<td>Intermediate Microeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 302</td>
<td>Intermediate Macroeconomic Theory</td>
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<tr>
<td>ECON 481</td>
<td>American Economic History</td>
<td>3</td>
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</table>

Grand Total ........................................................................................................ 18

Elective Courses Required in the College

<table>
<thead>
<tr>
<th>Course Type</th>
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<tbody>
<tr>
<td>Economics</td>
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<td>Business</td>
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<tr>
<td>Economics or Business</td>
<td>12</td>
</tr>
</tbody>
</table>

Grand Total ........................................................................................................ 36

*ECON 201 and 202 are required core courses in the B.S. in economics program and may satisfy objectives 4 and 8 of the General Education Curriculum (GEC).

**Multiple and Concurrent Bachelor's Degrees**

If a student seeks to earn two bachelor's degrees simultaneously, and if one of the two is the B.S. in business administration or the B.S. in economics, the student must meet all requirements leading to the undergraduate degree offered by the College of Business and Economics.

The student must complete all University GEC requirements, all College of Business and Economics core requirements, and must satisfy the course requirements of one of the college's curricula. (See Requirements for Degrees.) Students seeking to earn a B.S. in business administration or B.S. in economics and another bachelor's degree simultaneously must earn a minimum of 158 hours, including 30 hours as a resident of the College of Business and Economics. In addition, students seeking the B.S. in business administration or the B.S. in economics and another degree simultaneously must meet all admission requirements in order to be enrolled in the College of Business and Economics.

**International Opportunities**

The College of Business and Economics offers students opportunities to provide an international dimension to their B.S. degree studies by participating in programs that include travel to China, the Czech Republic or Poland, or Italy.

The China program, coordinated by the college's Center for Chinese Business, offers a six-credit-hour program in international business with classes taught by WVU faculty on location in China. The program is offered during the first six weeks of the summer term. Attending the classes will also be Chinese executives who provide a rich perspective on their own country. The program includes corporate visits to American and Chinese companies as well as sightseeing trips to Tiananmen Square, the Great Wall, and the Forbidden City. Besides tuition, students pay a fee to cover their airfare, accommodations, some meals, and other expenses.

The Czech Republic and Poland programs, which alternate each spring semester, are faculty-led and are coordinated by the college's director of the Division of Economics and Finance. Travel to either the Czech Republic or Poland during the spring semester recess is part of a course on the transitional economies of Europe. Students spend ten days in cities in the Czech Republic or Poland and hear lectures from university faculty about the country's economic and social history and the current economic situation. There are several field trips planned. Sightseeing activities are included. Besides tuition, students pay a fee to cover their airfare, accommodations, most meals, and other expenses.
The Italy program is somewhat different. WVU participates in a consortium along with 35 schools for the purpose of providing international study opportunities for their students. The consortium’s classes are held on a campus in Paderno del Grappa, Italy. Paderno is in northern Italy about 30 miles northwest of Venice. Students have the opportunity to attend either for a full semester or for a summer session. All classes are taught in English by faculty from the consortium universities with the students also being from the consortium member schools. Students who attend have the opportunity to take upper-division business, language, culture, and other specialized classes. Students pay tuition and fees as well as room and board to the consortium. The contact person for the Italy program is the college’s coordinator of International Studies.

Coordinated Dual Degrees in Business and Foreign Languages

The coordinated dual degrees in business and foreign languages provide global career opportunities to students seeking both a B.A. with a major in foreign languages and a B.S. in business administration. For details, see Special Programs in this catalog.

Accounting
Timothy Pearson, Ph.D., Division Director, Associate Professor
300 Business and Economics Building

Degree Offered
Bachelor of Science in Business Administration

Objectives
Consistent with the mission of the college, the goal of the Division of Accounting is to meet the evolving needs of its constituencies through teaching, research, and service. This goal is to be accomplished in a globally focused, student-centered, technology-enabled environment. The degree program builds upon a general education curriculum to provide students with a base of academic knowledge in business and accounting. It is designed to integrate basic knowledge with a professional orientation and form a foundation for future learning as well as career and academic success. The program and course offerings are subject to periodic review for timeliness and relevance.

The advanced courses in the program provide both specialized knowledge in accounting and financial reporting and an integrated overview of the economic activities of a business entity. These courses give students the basic educational foundation required for a variety of entry-level positions in accounting, business, government, and not-for-profit organizations. Accounting graduates may pursue careers that lead to positions such as controllers, financial officers, certified public accountants, managerial accountants, internal auditors, tax accountants, public administrative officers, and other executives.

The accounting major is also designed to give students the basic educational background necessary to prepare for the professional examinations that may be required of them in their careers. These examinations include those needed to become a certified public accountant (CPA), certified management accountant (CMA), and certified internal auditor (CIA). Requirements to sit for the Uniform CPA Examination vary by jurisdiction. Many states, including West Virginia, require 150 semester hours of college credit to sit for the exam or to be certified. The College of Business and Economics offers a master of professional accountancy (M.P.A.) degree that meets this requirement while allowing students to earn a graduate degree. The college also offers an innovative graduate certificate in forensic accounting and fraud investigation designed to prepare entry-level accountants and others for forensic accounting and fraud investigative careers.

In 1997, the accounting program received separate accreditation by AACSB International, the Association to Advance Collegiate Schools of Business. As of April 2008, only 169 programs had achieved this distinction. With a strong alumni network and a solid reputation among major accounting firms, the Division of Accounting at WVU has an excellent record of placing students in the profession.
Accounting Program Requirements

In order to be classified as an accounting major, a student must be admitted into the College of Business and Economics and have a minimum grade of B or better in both Accounting 201 and 202. The accounting major is required to complete the following plan of study:

<table>
<thead>
<tr>
<th>Degree Requirements</th>
<th>Hrs.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Non-B&amp;E GEC and Outside Elective Requirements</td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>Unrestricted Electives (in or out of College of B&amp;E)</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Required College Core Courses</td>
<td></td>
<td>37</td>
</tr>
</tbody>
</table>

**Accounting Major Requirements**

ACCT 311 and 312 *Intermediate Accounting* ............................................ 6
ACCT 321 *Introduction to Accounting Systems* ........................................... 3
ACCT 322 *Accounting Systems* ...................................................................... 3
ACCT 431 *Cost Management* .......................................................................... 3
ACCT 441 *Income Tax Accounting* ................................................................. 3
ACCT 451 *Auditing Theory* .............................................................................. 3
ACCT 461 *Accounting for Non Business Entities* or ACCT 473 *Personal Financial Advising* ........................................ 3
BLAW 420 *Law for the CPA* ........................................................................... 3

**Grand Total** ........................................................................................................ 128

A grade of C or better in Accounting 311 is required of all students prior to registering for Accounting 312. To be eligible for graduation, accounting majors must attain a GPA of 2.0 or better on all coursework taken in accounting.

**Recommended Sequence of Courses in Junior and Senior Years**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 311</td>
<td>3</td>
<td>ACCT 312</td>
<td>3</td>
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<tr>
<td>ACCT 321</td>
<td>3</td>
<td>ACCT 322</td>
<td>3</td>
</tr>
<tr>
<td>BCOR 315</td>
<td>3</td>
<td>BCOR 350</td>
<td>3</td>
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<tr>
<td>BCOR 330</td>
<td>3</td>
<td>BCOR 360</td>
<td>3</td>
</tr>
<tr>
<td>BCOR 340</td>
<td>3</td>
<td>Outside Elective</td>
<td>3</td>
</tr>
<tr>
<td>BCOR 370</td>
<td>3</td>
<td>Total</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hrs.</th>
<th>Fourth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 431</td>
<td>3</td>
<td>ACCT 451</td>
<td>3</td>
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<tr>
<td>ACCT 441</td>
<td>3</td>
<td>ACCT 461 or 473</td>
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<tr>
<td>BCOR 320</td>
<td>3</td>
<td>BCOR 460</td>
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<tr>
<td>Unrestricted Electives</td>
<td>3</td>
<td>BLAW 420</td>
<td>3</td>
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<tr>
<td>Outside Elective</td>
<td>3</td>
<td>Unrestricted Electives</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

**Economics**

Clifford Hawley, Ph.D., Interim Division Director
419 Business and Economics Building

**Degree Offered**

*Bachelor of Science*

**Economics Program Objectives**

In the broadest sense, economics is the science of decision-making. In economics, students learn how to identify the costs, benefits, and consequences of a decision. Government economists assess economic conditions in the U.S. and abroad and estimate the economic impact of specific changes in legislation or public policy. Economists in private
industry work largely for marketing research firms, management consulting firms, banks, investment firms, and insurance companies. A degree in economics is also highly desirable for students who plan to attend graduate school or law school. The College of Business and Economics has an excellent record of placing economics students in both. Economics is an excellent major for anybody interested in a career in law, politics, business, foreign service, domestic government service, or banking.

**Economics Program Requirements**

Admission to the B.S. in economics degree program requires admission to the College of Business and Economics. These requirements are indicated on previous pages. However, a student who earns a C in either ECON 201 or ECON 202 must earn a grade of B or better in the other course. In addition, admission to economics requires a grade of C or better in calculus. Upon admission to the College, students interested in the B.S. in economics degree should contact the Department of Economics to request a faculty advisor.

Students who major in economics must complete 62 credit hours in non-economics and non-business courses. These shall consist of WVU General Education Curriculum (GEC) and elective courses.

For graduation, economics majors must attain a minimum cumulative GPA of 2.0 for all economics courses, computed using the last grade earned in each economics course. Economics majors are required to have a grade of C or better in Economics 301 and Economics 302.

Economics majors may take a maximum of nine of their 33 credit hours in economics out of residence. Transfer students must take a minimum of 15 credit hours of upper division economics in residence. The undergraduate advisor can waive this requirement under special circumstances.

**Degree Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-B&amp;E GEC and Outside Elective Requirements</td>
<td>68</td>
</tr>
<tr>
<td>Unrestricted Electives (in or out of College of B&amp;E)</td>
<td>6</td>
</tr>
<tr>
<td>Required B&amp;E Core Courses</td>
<td>18</td>
</tr>
<tr>
<td>Required Economics Electives</td>
<td>15</td>
</tr>
<tr>
<td>Required Business Electives</td>
<td>9</td>
</tr>
<tr>
<td>Required Business and Economics Electives</td>
<td>12</td>
</tr>
<tr>
<td>Grand Total</td>
<td>128</td>
</tr>
</tbody>
</table>

**Recommended Sequence of Courses in Junior and Senior Years**

<table>
<thead>
<tr>
<th>Semester</th>
<th>First Semester Hrs.</th>
<th>Second Semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>ECON 301 ...........3</td>
<td>ECON 302 ...........3</td>
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<td>Economics Elective*3</td>
<td>Economics Elective ....3</td>
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<tr>
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<td>B&amp;E Elective ........3</td>
<td>B&amp;E Elective ........3</td>
</tr>
<tr>
<td></td>
<td>Business Elective ...3</td>
<td>Business Elective .....3</td>
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<tr>
<td></td>
<td>Outside Elective ...3</td>
<td>Outside Elective .....3</td>
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<td></td>
<td>Total ................15</td>
<td>Total ................15</td>
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</table>

<table>
<thead>
<tr>
<th>Semester</th>
<th>Third Semester Hrs.</th>
<th>Fourth Semester Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Third Semester</td>
<td>Economics Elective*3</td>
<td>Economics 481 ........3</td>
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<td></td>
<td>Economics Elective ....3</td>
<td>Economics Elective** ....3</td>
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<td>B&amp;E Elective ........3</td>
<td>B&amp;E Elective ........3</td>
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<td>Business Elective ...3</td>
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<tr>
<td></td>
<td>Total ................15</td>
<td>Total ................15</td>
</tr>
</tbody>
</table>

*Most economics electives should not be taken until the student has completed ECON 301.
**Students interested in graduate work in economics should take ECON 421 and ECON 425.

**Note:** Economics majors take 21 hours of B&E electives of which no more than 12 hours may be additional economics courses.
Finance
Clifford Hawley, Ph.D., Interim Division Director
419 Business and Economics Building

Degree Offered
Bachelor of Science in Business Administration

Finance Program Objectives
Finance is the study of the creation and management of wealth. A finance major learns how to evaluate and control risk. The finance program prepares students for a variety of positions in financial and non-financial enterprises. Career opportunities exist in commercial banking and financial institutions and in the regulatory agencies that oversee them. Additional opportunities exist in corporate finance including positions in financial analysis, cash management, and credit management. Investment-oriented students can explore opportunities in brokerage, bank trust, and institution portfolio management. People with degrees in finance have careers as commercial bankers, investment bankers, loan officers, financial analysts, insurance underwriters, stock brokers, institutional portfolio managers, credit managers, and insurance and risk managers.

Finance Program Requirements
In order to be classified as a finance major, a student must be admitted into the College of Business and Economics and have a grade of B or better in both Economics 201 and 202.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hrs.</th>
<th>Totals</th>
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<tbody>
<tr>
<td>Total Non-B&amp;E GEC and Outside Elective Requirements</td>
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<tr>
<td>Unrestricted Electives (in or out of College of B&amp;E)</td>
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<tr>
<td>Required College Core Courses</td>
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Finance Major Requirements

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>FIN 305 Intermediate Finance</td>
<td>3</td>
</tr>
<tr>
<td>FIN 310 Investments</td>
<td>3</td>
</tr>
<tr>
<td>FIN 320 Financial Statement Analysis</td>
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</tr>
<tr>
<td>FIN 330 Financial Institutions</td>
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</tr>
<tr>
<td>FIN 350 General Insurance</td>
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<td>Finance Electives</td>
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<td>Grand Total</td>
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Recommended Sequence of Courses in Junior and Senior Years

<table>
<thead>
<tr>
<th>Semester</th>
<th>First Semester Hrs.</th>
<th>Second Semester Hrs.</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td></td>
<td>BCOR 315......................1</td>
<td>BCOR 350......................3</td>
</tr>
<tr>
<td></td>
<td>BCOR 330......................3</td>
<td>FIN 305......................3</td>
</tr>
<tr>
<td></td>
<td>BCOR 340......................3</td>
<td>FIN 310......................3</td>
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<td>FIN 330 or 350.............3</td>
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<tr>
<td></td>
<td>FIN 320......................3</td>
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<td>FIN 330 or 350.............3</td>
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<td>Total.....................16</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Third Semester Hrs.</td>
<td>Fourth Semester Hrs.</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>BCOR 320......................3</td>
<td>BCOR 460......................3</td>
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<tr>
<td></td>
<td>BCOR 360......................3</td>
<td>FIN Elective...............3</td>
</tr>
<tr>
<td></td>
<td>FIN Elective.............3</td>
<td>FIN Elective...............3</td>
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<td></td>
<td>FIN Elective.............3</td>
<td>Outside Elective.........3</td>
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<td>Unrestricted Elective....3</td>
</tr>
<tr>
<td></td>
<td>Total..................15</td>
<td>Total..................15</td>
</tr>
</tbody>
</table>

College of Business and Economics
Management
Graham Peace, Ph.D., Division Director
103 Business and Economics Building

Degree Offered
Bachelor of Science in Business Administration

Management Program Objectives
The management program provides the skill and knowledge for students who will assume leadership roles in business. This program prepares them for various managerial positions. Students choose from one of three areas of emphasis in management: human resource management, international business, and small business/entrepreneurship. Students who prefer not to pursue an area of emphasis may complete a general track within management. The general track offers students the opportunity to complete electives in more than one of the areas of emphasis. However, a student may not complete more than two electives in one of the areas of emphasis. Students pursuing the human resource management area of emphasis develop expertise for careers such as compensation analyst, recruiter, training specialist, or human resource manager. Students pursuing the international business area of emphasis are encouraged to study a foreign language and are required to participate in a study abroad program. They develop expertise in international business strategy and they acquire an appreciation of foreign culture and business practices. Students pursuing the small business/entrepreneurship area of emphasis pursue positions such as small business manager, entrepreneur, or franchise owner.

Management Degree Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-B&amp;E GEC and Outside Elective Requirements</td>
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<td>56</td>
</tr>
<tr>
<td>Unrestricted Electives (in or out of College of B&amp;E)</td>
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<td>5</td>
</tr>
<tr>
<td>Required College Core Courses</td>
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<td>37</td>
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<tr>
<td>Required Courses in Option:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT 331 Managerial Accounting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MANG 330 Human Resource Fundamentals</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MANG 360 International Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MANG 420 Business Information Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MANG 422 The Individual and the Organization</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MANG 434 Business Research Methods (spring only)</td>
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<td>Area of Emphasis Electives</td>
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</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>128</td>
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</tbody>
</table>

Recommended Sequence of Courses in Junior and Senior Years

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
<th>Second Semester</th>
</tr>
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<tbody>
<tr>
<td>BCOR 315</td>
<td>1</td>
<td>BCOR 360</td>
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<td>BCOR 320</td>
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<td>MANG 360</td>
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<td>BCOR 340</td>
<td>3</td>
<td>Area of Emphasis Elective</td>
</tr>
<tr>
<td>BCOR 350</td>
<td>3</td>
<td>Outside Elective</td>
</tr>
<tr>
<td>BCOR 370</td>
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<td>16</td>
<td><strong>15</strong></td>
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</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
<th>Fourth Semester</th>
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</thead>
<tbody>
<tr>
<td>ACCT 331</td>
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<tr>
<td>MANG 422</td>
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<td>MANG 420*</td>
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<td>Area of Emphasis Elective</td>
</tr>
<tr>
<td>Area of Emphasis Elective</td>
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<td>Outside Elective</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

*MANG 434 Business Research Methods is offered in the spring semester only.
Management Information Systems
Graham Peace, Ph.D., Division Director
103 Business and Economics Building

Degree Offered
Bachelor of Science in Business Administration

MIS Program Objectives
Students in the management information systems program gain the skills necessary to analyze an organization’s information needs and develop technological solutions to solve business problems. In today’s fast-paced, global environment, technology is a necessary and integral part of business. MIS professionals have the knowledge to understand both the business goals and needs of the organization, and the application of technology to meet those needs. Career opportunities include: systems analysis and design, database management, networking and telecommunications, Web page development, and technology management. This is an excellent major for students who enjoy technology and want to apply their knowledge in a business environment.

MIS Program Requirements
Admission to the MIS program requires admission to the College of Business and Economics. The program is a lock-step program with recommended entry in the fall semester of the junior year. Opportunities to enter in the spring semester are provided, although it may not be possible for the student to complete the program in less than four semesters.

Management Information Systems
Degree Requirements Hrs. Totals
Non-B&E GEC and Outside Elective Requirements .................................................. 56
Unrestricted Electives (in or out of College of B&E) .................................................. 5
Required College Core Courses .................................................................................. 37
Required Courses in Option:
ACCT 331 Managerial Accounting ........................................................................... 3
MANG 351 Data Base Management Systems ......................................................... 3
MANG 352 Business Applications Programming .................................................. 3
MANG 353 Advanced Information Technology ...................................................... 3
MANG 355 Data Communications ............................................................................ 3
MANG 420 Business Information Systems ............................................................... 3
MANG 450 Systems Analysis ..................................................................................... 3
MANG 452 Systems Design and Development ....................................................... 3
MIS Elective .................................................................................................................. 6
Grand Total .................................................................................................................. 128

Recommended Sequence of Courses in Junior and Senior Years

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOR 315</td>
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<td>BCOR 320</td>
<td>3</td>
</tr>
<tr>
<td>BCOR 330</td>
<td>3</td>
<td>BCOR 340</td>
<td>3</td>
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<tr>
<td>BCOR 350</td>
<td>3</td>
<td>BCOR 360</td>
<td>3</td>
</tr>
<tr>
<td>BCOR 370</td>
<td>3</td>
<td>MANG 352 (spring only)</td>
<td>3</td>
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<td>MANG 351 (fall only)</td>
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<td>MANG 355 (spring only)</td>
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</tr>
<tr>
<td>MANG 420</td>
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<tr>
<td>Total</td>
<td>16</td>
<td>Total 12</td>
<td>12</td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hrs.</th>
<th>Fourth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 331</td>
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<td>BCOR 460</td>
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<tr>
<td>MANG 353 (fall only)</td>
<td>3</td>
<td>MANG 452 (spring only)</td>
<td>3</td>
</tr>
<tr>
<td>MANG 450 (fall only)</td>
<td>3</td>
<td>MIS Elective</td>
<td>3</td>
</tr>
<tr>
<td>MIS Elective</td>
<td>3</td>
<td>Outside Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>Total 12</td>
<td>12</td>
</tr>
</tbody>
</table>
Marketing
Graham Peace, Ph.D., Division Director
103 Business and Economics Building

Degree Offered
Bachelor of Science in Business Administration

Marketing Majors
Marketing professionals are involved in planning, promoting, pricing, and distributing products and services. The marketing program is designed to give students a strong understanding of the marketing mix elements used by firms to satisfy customer wants and needs. In addition to the foundations of marketing strategy, the required courses integrate both the global and societal aspects of the marketplace to give students an appreciation of how marketing strategies are used in the globalized economy as well as in the public and not-for-profit sector. Career opportunities include: marketing research, marketing management, product management, distribution and logistics, services marketing, global marketing, sales management, advertising research, promotion, international business, and supply chain management and purchasing.

Degree Requirements
Non-B&E GEC and Outside Elective Requirements ........................................... 56
Unrestricted Electives (in or out of College of B&E) ........................................... 8
Required College Core Courses ........................................................................... 37
Marketing Major Requirements
MKTG 315 Consumer Behavior ........................................................................... 3
MKTG 325 Marketing Research ............................................................................ 3
MKTG 330 Distribution Channels ....................................................................... 3
MKTG 350 Product and Price .............................................................................. 3
MKTG 380 Integrated Promotional Strategies ....................................................... 3
MKTG 480 Service Marketing ............................................................................. 3
MKTG 485 Global Marketing ............................................................................... 3
Marketing Elective ................................................................................................. 3
Business and Economics Elective ....................................................................... 27
Total .................................................................................................................. 128

Recommended Sequence of Courses in Junior and Senior Years

First Semester Hrs. Second Semester Hrs.
BCOR 315 ........................................ 1 BCOR 340 ........................................ 3
BCOR 320 ........................................ 3 BCOR 360 ........................................ 3
BCOR 330 ........................................ 3 MKTG 315 ........................................ 3
BCOR 350 ........................................ 3 MKTG 330 ........................................ 3
BCOR 370 ........................................ 3 Outside Elective ................................ 3
Outside Elective .............................. 3 Total ............................................. 15
Total ............................................ 16

Third Semester Hrs. Fourth Semester Hrs.
MKTG 325 ........................................ 3 BCOR 460 ........................................ 3
MKTG 350 ........................................ 3 MKTG 480 ........................................ 3
MKTG 380 ........................................ 3 MKTG 485 ........................................ 3
MKTG Elective ................................ 3 B&E Elective ...................................... 3
Outside Elective .............................. 3 Unrestricted Elective ......................... 3
Total ............................................ 15 Total ............................................. 15

Marketing 491 Professional Field Experience may not satisfy marketing elective credit.
Degrees Offered

Bachelor of Arts
  Majors: Theatre, Art History, Music

Bachelor of Fine Arts
  Majors: Theatre, Visual Art (with or without certification)

Bachelor of Music

Multi-Disciplinary Studies Degree

Introduction

Creative development in art, music, and theatre is the purpose of the College of Creative Arts of West Virginia University. A distinguished faculty of scholars and artists bring to the college’s outstanding facilities a commitment to a creative process of artistic growth which is shared with each student. Here, in a rich environment of plays, art exhibits, and concerts, we offer students the knowledge, skills, and inspiration necessary for professional success.

College of Creative Arts fine arts grants are available each year in the Divisions of Art & Design, Music, and Theatre and Dance. The Divisions of Art and Design, Music, and Theatre and Dance maintain additional scholarship funds.

Auditions for scholarships in music and theatre and portfolio reviews for scholarships in art are scheduled throughout the school year. For information or an appointment, write to the Recruitment Coordinator, College of Creative Arts, West Virginia University, P.O. Box 6111, Morgantown, WV 26506-6111, or telephone (304) 293-4841 x 3239.

Admission Requirements

The College of Creative Arts uses the admission standards and procedures of the University. In addition, because of the creative nature of our students, we admit some students under the individual consideration clause of the general admission policy. This category allows admission of exceptionally talented students in art, music, and theatre who might not meet the criteria for grade point averages and standardized test scores.

The Division of Theatre and Dance may audition prospective students before an admission decision. All music applicants must audition before consideration for admission to a program in the Division of Music. The Division of Art and Design requires applicants to the B.F.A. studio art program to submit a portfolio for review. Please refer to the specific criteria of the three divisions in their program descriptions.

Students transferring to the College of Creative Arts from other colleges and universities are required to present a minimum grade point average (GPA) of 2.0 in addition to the standard auditions or portfolio reviews. Exceptions may be made in the case of first-semester freshman students.

Graduation Requirements

The Divisions of Art and Design, Music, and Theatre and Dance have specific graduation requirements for their programs. Please refer to the individual program descriptions for this information.

Application for Graduation

Three semesters prior to the anticipated date of graduation, each student should come to the College of Creative Arts Records Office to request an academic records audit to ensure that all program requirements will be fulfilled by the completion of the final semester of study. During the first month of a student’s final semester or summer session (the one in which the student will graduate), each student must apply for graduation and a diploma. If a student does not actually complete all program requirements by the end of the anticipated final semester, it will be necessary to reapply for a later graduation date. No candidate can graduate without this application.
College Scholarship Resources

Drs. Sophia and David Blaydes Creative Arts Endowment
Endowment income is to fund freshman students majoring in art, music, or theatre.

CNG Endowed Scholarship
Endowment income is to fund fine or applied arts majors in art, music, or theatre.

Davis Memorial Scholarships for the CCA
Endowment income is to fund undergraduate or graduate students majoring in art, music, or theatre.

Phil Faini Scholarship
Endowment income is to fund undergraduate students majoring in art, music, or theatre.

Kenneth O. Godwin, Jr. Scholarship
Endowment income is to fund freshman graduates of Grafton High School majoring in art, music, or theatre.

Drs. Paul and Laura Mesaros Scholarship III
Endowment income is to support art or music majors.

Mikki Van Wyk Creative Arts Scholarship
Endowment income is to fund undergraduate students majoring in art, music, or theatre.

Division of Art
Alison Helm, M.F.A. Chair
http://artanddesign.wvu.edu/

Degrees Offered
Bachelor of Arts in Art History
Bachelor of Fine Arts
Majors in Visual Art (with or without teaching certification): Ceramics, Graphic Design, Intermedia, Painting, Printmaking, Sculpture

Nature of Program
The Division of Art is an accredited institutional member of the National Association of Schools of Art and Design. The curriculum of the division is designed to afford the student an opportunity to explore the visual arts. Undergraduate programs offer scholarly and studio experiences to potential artists and teachers. The in-depth instruction is enhanced by the close working relationship between students and faculty, which allows sharing the insights and investigative processes of professional artists and scholars.

A bachelor of fine arts (B.F.A.) degree is conferred upon those students who satisfy all University and departmental requirements, complete the appropriate curriculum, and comply with the general regulations of the University. The art education curriculum (see art education) is a five-year program; it unites the B.F.A. curriculum with the appropriate coursework for teacher certification in art, pre-K–adult.

A degree candidate in the Division of Art must maintain a minimum GPA of 2.0 (C); admission to the teacher certification program requires a 2.5 GPA. Students must earn a grade of C or higher in art studio and/or art history classes in order for the course to fulfill degree requirements. In addition, students may be requested to present a portfolio of selected works for examination and evaluation by a faculty committee. The committee is empowered to make recommendations regarding the student’s status as a major in art and their continuation toward a degree in art.

Transfer applicants in studio art must undergo a portfolio review to gain admittance in the program. Evaluation for advanced standing or transfer credit in studio subjects is not made solely upon the presentation of a transcript but also depends on the evaluation of a portfolio of art work. The Division of Art also requires a portfolio examination for placement in the program.

International Study Opportunities
The Division of Art has established excellent international educational and exchange programs. These include summer study, short term, and semester-long programs. The focus of these international exchanges is with sister institutions in China, Italy, and Mexico.
Additional opportunities in other countries are also available. Students should consult with their advisor about taking language courses and other liberal studies courses that would support international studies.

**Advising**

The College of Creative Arts recommends that all art majors confer regularly with their advisors in order to maintain the correct distribution of coursework and to establish the necessary prerequisites for upper-division instruction. Students will find it difficult to carry more than three studio art classes in one semester. Ultimately it is the student's responsibility to insure that all requirements for graduation are met.

**Audit, Credit by Examination, Pass/Fail, and Non-Art Major Courses**

No studio or art history courses are available on an audit or credit by examination basis. Students enrolled in the Division of Art may not take art classes on a pass/fail basis. Courses designated for non-art majors may not be substituted for art degree requirements unless approved in advance by the chairperson of the Division of Art.

**Student Work**

Every effort is made to protect student work and property. Work displayed in the Mesaros Galleries is insured for the exhibition period. The Division of Art does not accept responsibility for damage or losses under other circumstances. The Division of Art reserves the right to retain certain examples of student work for reproduction and exhibition purposes.

**Art Supplies**

Supplies for classroom presentations, demonstrations, and common use must—for economy and availability—be purchased from a central source and fund. To expect every student individually to supply all materials needed for high consumption courses of instruction would create a situation of excessive financial hardship for most and a complex logistical problem for all. To offset this burden, the Division of Art orders in advance necessary supplies at a bulk rate, and requires each student to share the cost through an art fee assessed each semester. As the art fee is used to purchase supplies for common consumption, students will also need to purchase materials for individual or specialized projects.

**Portfolio Reviews**

The Division of Art requires a portfolio review for all applicants to the bachelor of fine arts program. This evaluation is conducted by the art faculty and is designed to ensure that all students entering the studio program have certain basic competencies and skills. Students are encouraged to apply and complete the portfolio review at the earliest possible date. Applicants should visit the division website: http://www.ccarts.wvu.edu or phone the office at (304) 293-4841 x3139 to receive detailed instructions and portfolio review application materials.

All first-year students in the B.F.A. program are required to participate in the portfolio review which takes place near the end of the spring term. The portfolio must consist of work completed in foundation courses (Art 111 and 112, Art 121 and 122) and, if possible, selections should be reviewed by a student's particular instructor. The portfolio should include ten drawings, three works from 2-D foundations, and three works from 3-D foundations. Transfer students will also be reviewed. Faculty and graduate assistants who teach foundations courses meet to review student work and in some cases may recommend that a student repeat a particular course and resubmit the portfolio for approval to advance in the program.

This portfolio review and exhibition is intended to accomplish the following goals:

- To underscore the fact that the faculty recognizes and values the students as young artists and designers who will compose the future of our program.
- To examine their work relative to the department’s expectations regarding levels of proficiency achieved with respect to foundations area courses.
• To improve retention by identifying students whose work does not meet departmental expectations and give them the opportunity, direction, and encouragement to improve their performance. Students should keep their work in good condition and preserve it for the review. Students wishing to pursue studies in graphic design must submit a portfolio for review during the second semester of their sophomore year. Contact the area coordinator for information regarding the portfolio review for graphic design. The Division of Art also reserves the right to require a portfolio review to determine a student’s retention in a program or studio emphasis.

Scholarships
The College of Creative Arts offers scholarships to currently enrolled art majors at all levels and incoming freshmen. Incoming freshman requirements include portfolios, slides, or CD's, a transcript of grades, and letter of recommendation. The scholarships range from a waiver of tuition for one academic year (fall and spring semesters) to $500.00 awards and are granted on the basis of academic record and artistic merit as determined by the WVU Division of Art faculty. All recipients must reapply if they wish to be considered for the following year. Applications are available in the Division of Art office. The scholarship review process takes place in March each year. Applicants who receive a scholarship must participate in the annual scholarship exhibition and perform up to five hours of service per week to the Division of Art.

Art Scholarship Resources
Division of Art Faculty Award
Drs. Paul & Laura Mesaros Presidential Scholarship
Endowment income to be used for regularly enrolled juniors and seniors majoring in visual arts.
Drs. Paul & Laura Mesaros Scholarship II
Endowment income to be used for regularly enrolled juniors and seniors majoring in visual arts.
Bill & Ella Kronquist Memorial Scholarship
Endowment income to be used for regularly enrolled juniors and seniors majoring in visual arts.
Paul & Laura Mesaros Memorial Scholarship
Endowment income to be used for regularly enrolled juniors and seniors or graduates majoring in visual arts.

Bachelor of Arts Degree
The major in art history provides a scholarly examination of the history of art and architecture in its cultural and theoretical context. Once accepted into the University and into the art history program, the B.A. candidate must complete curriculum requirements in order to graduate. The B.A. curriculum includes required and elective art history courses, studio art courses, cognate courses, and University-established General Education Curriculum requirements. Students are encouraged to study abroad during one summer or semester of the junior year. In the final semester, the student will complete a senior research project on a topic selected by the student with approval of the art history faculty.

Minor in the History of Art
Students who pursue degrees in other disciplines with liberal studies and the arts and humanities may find that the study of the history of art enhances comprehension of their primary field of study and permits them to achieve a broader and deeper understanding of cultural history. Information about the minor in the history of art is available from the coordinator of art history or the Division of Art Office.
Bachelor of Fine Arts (B.F.A.)

The bachelor of fine arts (B.F.A.), a professional degree, is awarded to those persons who have satisfactorily completed the required 129–131 semester credit hours of study and made the expected commitment to the vocation of art. This degree program requires an amount of self-education based on a sound foundation of studio experience. Students in the B.F.A. curriculum may participate in a wide range of studio class work, including drawing, design, painting, printmaking, ceramics, graphic design, intermedia and sculpture, as well as a program of art history. Teacher certification in art, pre-K–adult, may be earned with any area of studio emphasis in the B.F.A. program. Through careful counseling, individual goals are established in keeping with the student’s aims and talents. Six hours of additional art history can also be completed to receive a minor in art history with the BFA or B.F.A. with certification option.

The Division of Art is committed to providing the opportunity and the environment for the best possible education in the visual arts at both the undergraduate and graduate levels. The division’s program of professional education is centered in the studio arts and reinforced with art history and liberal studies. Students are encouraged to take advantage of the broad range of educational possibilities available at the University and to enroll in courses that support their professional goals and enrich their knowledge.

Curriculum Requirements

Once accepted into the University and the art program following a review of the applicants portfolio, the B.F.A. candidate must complete all curriculum requirements in order to graduate. The B.F.A. curriculum includes required and elective art courses, art history courses, and University-established academic (GEC) requirements. During the first two years, the art student must complete a specific sequence of courses in art history, art orientation, drawing, and visual foundations for a total of 19 credit hours. Art electives, which are available in all major studio areas, are designed to provide the basic experience to enable a student to select a major by the beginning of the third (junior) year. The student must complete 12 credit hours of these studio electives and six credit hours of advanced figure/drawing to complete the lower-division requirements of the art program (a total of 37 hours within the Division of Art).

B.F.A. Degree Minimum Credit-Hour Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio (12 credits in drawing; 30 credits in major area)</td>
<td>72</td>
</tr>
<tr>
<td>Art Orientation</td>
<td>1</td>
</tr>
<tr>
<td>Art History (200/300 level)</td>
<td>6</td>
</tr>
<tr>
<td>GEC requirement (including ARHS 120 and ARHS 160)</td>
<td>41–43</td>
</tr>
<tr>
<td>Open Electives</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>129</td>
</tr>
</tbody>
</table>

Ceramics, Graphic Design, Painting, Printmaking, Sculpture, Intermedia

Bachelor of Fine Arts (B.F.A.)

In order to complete the B.F.A. degree program in four years, a student must take 15 to 18 credit hours per semester, or 32 to 36 credits per year. Thirty credit hours are required in the studio major area: six hours of 200-level courses and 24 hours of 300-level and 400-level courses. Additional information is available from the coordinator of the various areas or the divisional academic advisor.

To enter the upper-division major area studio courses, the student must complete the four-semester lower-division program, including at least two semesters (six semester credit hours) of introductory work from the area of intended major.

Lower Division The two-year, lower-division required sequence of courses in drawing, visual foundations, art orientation, art history, and introductory studio prepares the student for advanced study. Idea development, technical ability, and communication skills are taught with equal emphasis by involving the student in a wide range of problems.
The first year of lower-division instruction offers a broad experience in drawing, design, and art history. Emphasis is on basic skills concepts and the development of a common vocabulary with which student objectives can be clearly defined. In the second year, students have the option of selecting introductory courses from three of the six major studio areas which are most suited to their particular interests. Figure drawing and advanced drawing are also required in the second year. Lower-division art requirements are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 111 Drawing</td>
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</tr>
<tr>
<td>ART 112 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 199 Art Orientation</td>
<td>1</td>
</tr>
<tr>
<td>ART 121 Visual Foundation</td>
<td>3</td>
</tr>
<tr>
<td>ART 122 Visual Foundation</td>
<td>3</td>
</tr>
<tr>
<td>ARHS 120 Survey of Art 1</td>
<td>3</td>
</tr>
<tr>
<td>ARHS 160 Survey of Art 2</td>
<td>3</td>
</tr>
<tr>
<td>ART 211 Figure Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 212 Advanced Drawing</td>
<td>3</td>
</tr>
<tr>
<td>Studio Introductory 200-level courses</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>

**Upper Division** The third year of study marks the entry into the upper division. The student begins to concentrate in one area of major studio concern, and to direct and apply the basic skills acquired during the first two years of art instruction. Major areas offered by the Division of Art are ceramics, painting, printmaking, graphic design, sculpture, and intermedia.

During the third and fourth years, the studio major accounts for a minimum of 24 semester credit hours or almost half the credit earned. The remaining credit hours are taken in art history, art electives, and liberal arts. Upper-division art requirements are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 300/400 Studio Major</td>
<td>24</td>
</tr>
<tr>
<td>ART 200/300 Art Electives</td>
<td>18</td>
</tr>
<tr>
<td>ARHS 200/300/400 Art History</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48</strong></td>
</tr>
</tbody>
</table>

**B.F.A. General Education Curriculum Requirements** These requirements are defined by WVU. The undergraduate art student must successfully complete a minimum of 39 semester credit hours of GEC to qualify for graduation. To satisfy this requirement, the following distribution of GEC credits must be achieved.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101 and 102 (or ENGL 103, 3 hr)</td>
<td>6</td>
</tr>
<tr>
<td>MATH</td>
<td>3</td>
</tr>
<tr>
<td>GEC requirement</td>
<td>26–27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35–36</strong></td>
</tr>
<tr>
<td>Open electives</td>
<td>9</td>
</tr>
</tbody>
</table>

**Suggested Curriculum**

**First Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 111 Drawing</td>
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<td>ART 112 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARHS 120 Art History GEC #3</td>
<td>3</td>
<td>ARHS 160 Art Survey GEC #5</td>
<td>3</td>
</tr>
<tr>
<td>ART 121 Visual Foundation</td>
<td>3</td>
<td>ART 122 Visual Foundation</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101 GEC #1</td>
<td>3</td>
<td>ART 199 Orientation</td>
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</tr>
<tr>
<td>GEC Objective</td>
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<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 101 GEC #6</td>
<td>1</td>
<td>GEC Objective #2 (plus lab)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>
### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 211 or ART 212 Drawing</td>
<td>3</td>
<td>ART 211 or ART 212 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 200-Level Studio Major</td>
<td>3</td>
<td>ART 200-Level Studio Major</td>
<td>3</td>
</tr>
<tr>
<td>ART 200-Level Elective</td>
<td>3</td>
<td>ART 200-Level Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 GEC #1</td>
<td>3</td>
<td>GEC #2 Objective—MATH</td>
<td>3</td>
</tr>
<tr>
<td>ARHS 200/300 Art History</td>
<td>3</td>
<td>Total</td>
<td>15</td>
</tr>
<tr>
<td>GEC Objective</td>
<td>3</td>
<td>Total</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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</tbody>
</table>

### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 300 Studio Major</td>
<td>6</td>
<td>ART 300 Studio Major</td>
<td>6</td>
</tr>
<tr>
<td>ART or ARHS Elective 200/300</td>
<td>3</td>
<td>ART or ARHS Electives 200/300</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective</td>
<td>3</td>
<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective 2</td>
<td>3–4</td>
<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15–16</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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### Fourth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 300 Studio Major</td>
<td>6</td>
<td>ART 400 Studio Major</td>
<td>6</td>
</tr>
<tr>
<td>ART or ARHS Elective 200/300</td>
<td>6</td>
<td>ART or ARHS Elective 200/300</td>
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<tr>
<td>Open Elective</td>
<td>3</td>
<td>Open Elective</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Thirty credit hours are required in the studio major area: six hours are 200 level and 24 hours are 300 to 400 level. Additional information is available from the coordinator of the various areas or divisional academic advisor.

### Bachelor of Fine Arts (B.F.A.) with Teacher Certification, Pre-K–20

#### Ceramics, Graphic Design, Painting, Printmaking, Sculpture, Intermedia

Students wanting certification to teach pre-K–12 must complete competency requirements established by the state in addition to Division of Art B.F.A. degree requirements. This unique program allows students to earn teacher certification while emphasizing a content area within the B.F.A. curriculum. Typically, the student’s schedule is reviewed with an area coordinator, and the art education coordinator.

### General Education Curriculum Requirements

These requirements are designed by the certifying agency of the state of West Virginia and WVU. Education requirements are maintained by the state. Undergraduate art students desiring certification should consult with the art education coordinator to be certain of compliance with certification criteria.

### B.F.A. with Certification Curriculum

This variation of the regular B.F.A. program begins after the completion of the freshman year and requires careful selection of both studio and academic courses. With the additional GEC course requirements, four-and-a-half to five years of school work should be anticipated. Students wishing certification to teach pre-K–12 in West Virginia must complete competency requirements established by the state in addition to Division of Art B.F.A. degree requirements. B.F.A. degree with certification requirements and suggested course of study are as follows:

### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 111 Drawing I</td>
<td>3</td>
<td>ART 112 Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>ARHS 120 GEC #3</td>
<td>3</td>
<td>ARHS 160 GEC #5</td>
<td>3</td>
</tr>
<tr>
<td>ART 121 Visual Foundation</td>
<td>3</td>
<td>ART 122 Visual Foundation</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101 GEC #1</td>
<td>3</td>
<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective</td>
<td>3–4</td>
<td>GEC Objective #2 (plus lab)</td>
<td>4</td>
</tr>
<tr>
<td>UNIV 101 GEC #6</td>
<td>1</td>
<td>ART 199 Orientation</td>
<td>1</td>
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<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 211 or 212 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 213/214 Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART 226/227 Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 GEC #1</td>
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</tr>
<tr>
<td>GEC Objective</td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 211 or 212 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 230/231 Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART 240/241 Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>ART 264 Intro. to Art Education</td>
<td>3</td>
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<tr>
<td>GEC Objective</td>
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<td><strong>Total</strong></td>
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### Third Year

<table>
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<tbody>
<tr>
<td>ART 200 Studio Major</td>
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<tr>
<td>ART 223/224 Graphic Design</td>
<td>3</td>
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<tr>
<td>ART 265 or 200-level Art History</td>
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<tr>
<td>EDUC 301 Learning I</td>
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<td>PE or DANC 135</td>
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<table>
<thead>
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<th>Second Semester</th>
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<td>ART 300 Studio Major</td>
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<tr>
<td>ART 266</td>
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<tr>
<td>GEC Objective</td>
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<tr>
<td>MATH</td>
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<tr>
<td>(Art History Minor)</td>
<td>(3)</td>
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<td><strong>Total</strong></td>
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### Fourth Year

<table>
<thead>
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<tbody>
<tr>
<td>ART 300 Studio Major</td>
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<tr>
<td>ART 265 or 200-level Art Hist. (W)</td>
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<tr>
<td>SPED 304</td>
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<tr>
<td>Creative Arts Elective</td>
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<td>(Art History Minor)</td>
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<td><strong>15 (18)</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>SPED 304</td>
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<tr>
<td>GEC Objective</td>
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<tr>
<td>RDNG 422</td>
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### Fifth Year

<table>
<thead>
<tr>
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<th>Hrs.</th>
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<tbody>
<tr>
<td>ARHS 200/300 Art History</td>
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<tr>
<td>ART 365 Art Education</td>
<td>3</td>
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<tr>
<td>ART 400 Senior Project</td>
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<td>SPED 360</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>ARHS 491D</td>
<td>12</td>
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<tr>
<td>C&amp;I 491</td>
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| Grand Total | **154 (160)** |

Requirements subject to change depending on state requirements.

**Proposed course of study: Bachelor of Art in Art History**

### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Studio Art</td>
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<tr>
<td>ARHS 120 GEC Objective #3</td>
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<tr>
<td>Cognate Foreign Language</td>
<td>3</td>
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<tr>
<td>ENGL 101 GEC Objective #6</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective #2</td>
<td>3–4</td>
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<tr>
<td>UNIV 101 GEC Objective #6</td>
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### Second Year

<table>
<thead>
<tr>
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<th>Hrs.</th>
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<tbody>
<tr>
<td>Art History (Classics)</td>
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<td>GEC Objective #2 - MATH</td>
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<tr>
<td>Cognate</td>
<td>3</td>
</tr>
<tr>
<td>Cognate Foreign Language III</td>
<td>3</td>
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<tr>
<td>ENGL 102 GEC Objective #1</td>
<td>3</td>
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<tr>
<td>GEC Objective #7</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>ARHS 240</td>
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<tr>
<td>GEC Objective #2</td>
<td>3</td>
</tr>
<tr>
<td>Art Hist. (West. Europ. Traditions)</td>
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</tr>
<tr>
<td>GEC Objective</td>
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</tr>
<tr>
<td>Cognate Foreign Language IV</td>
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<td>Cognate</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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</table>
### Third Year

<table>
<thead>
<tr>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
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<td>Art History/Mod. Contmp. Studios</td>
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<tr>
<td>Art History ARHS 345</td>
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<td>GEC Objective #8</td>
<td>3</td>
</tr>
<tr>
<td>Cognate (Arts Administration)</td>
<td>3</td>
<td>Cognate (Curatorial Practice)</td>
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</tr>
<tr>
<td>Open Elective</td>
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<td>Art History</td>
<td>3</td>
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<tr>
<td>Studio Art</td>
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<td>Open Elective</td>
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<td>Total</td>
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<td>Cognate</td>
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### Fourth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEC Objective #4</td>
<td>3</td>
<td>Art History/Mod. Contmp. Studios</td>
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</tr>
<tr>
<td>Open Elective</td>
<td>3</td>
<td>Open Elective</td>
<td>3</td>
</tr>
<tr>
<td>Open Elective</td>
<td>3</td>
<td>Art History Capstone</td>
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</tr>
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<td>Art History Seminar</td>
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<td>Total</td>
<td>12</td>
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<tr>
<td>Cognate</td>
<td>3</td>
<td>Total</td>
<td>15</td>
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</table>

Degree requirements subject to change based on West Virginia State Certification policies.

### Summary of Requirements

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio and Art Electives (includes Art Orientation)</td>
</tr>
<tr>
<td>Art History</td>
</tr>
<tr>
<td>LSP GEC Objectives</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

### Division of Music

Keith Jackson, D.M.A., Chair  
Cynthia Anderson, M.M., Associate Chair  
http://music.wvu.edu/

### Degrees Offered

- Bachelor of Music
  - Performance Majors: areas of emphasis in Band Instrument, Orchestra Instrument, or Guitar; Piano (traditional, coaching-accompanying, piano pedagogy, jazz); Voice; Woodwinds
  - Other Majors:  
    - Jazz Studies  
    - Music Composition  
    - Music Education  
- Bachelor of Arts in Music  
- Music Minor

The Division of Music has been an important part of WVU’s cultural and academic life since 1897, when the division’s antecedent, the School of Music, was established. The University has been an institutional member of the National Association of Schools of Music since 1947. The 38-member faculty includes internationally acclaimed artists and scholars who are distinguished teachers as well. The division is part of the College of Creative Arts, the center for the visual and performing arts at WVU and in the state of West Virginia.
Mission

The Division of Music, as part of WVU’s College of Creative Arts, offers professional preparation for careers in composition, performance, and teaching of music as well as the opportunity to study music within a liberal arts curriculum. Its nationally accredited programs, strengthened by creative activity and research, provide an educational environment for the exploration and understanding of music. The music faculty fosters this mission through performances, presentations, recruitment, and service. The division is supported by the resources of a comprehensive land-grant university supplemented by grants and private donations.

Career Prospects

When you complete an undergraduate degree in music from WVU, you will have a variety of occupations from which to choose. In preparing for those, depending upon your interests and aspirations, you may pursue one of two degree programs: the bachelor of music (B.M.) or the bachelor of arts (B.A.).

The B.M. program offers students several specialized courses of study. Those concentrating in music education are prepared to teach vocal, instrumental, and general music in grades pre-K through adult, as well as to pursue graduate study in the same field. Those majoring in performance are prepared for careers as performers or for graduate study to increase their artistry further. Upon completing a major in composition, graduates may either begin careers as composers or continue their studies at the graduate level. The B.A. program is designed for those seeking a broad liberal arts education while majoring in music. Depending upon the courses chosen, one can prepare for graduate study in music or in another field.

Admission Requirements

Acceptance into an undergraduate music degree program is contingent upon admission to WVU as an undergraduate student and a successful performance audition. Auditions are held principally in October, February, and March in Morgantown. Dates for auditions and details concerning them are available from the Division of Music and on the website. Special accommodations may be made by contacting the Division of Music at (304) 293-4841 x3196. The audition is a preliminary assessment of your potential for success in the program. You must audition at a performance level 3 or above to be admitted to most courses of study in music. You must audition at a performance level 6 or above to be admitted to the B.M. degree program in performance. If you are admitted, your standing is confirmed or revised after the first semester of study. You should own your own instrument under normal circumstances (except for piano) and a portable (folding) music stand. If you are a music major, you can change from one music curriculum to another with faculty approval, particularly during the freshman or sophomore years, without great loss of course credit. You are encouraged to explore and follow the curriculum for which you are best qualified and in which you can expect the greatest success. Evaluation of your work by the Division of Music faculty aids these decisions. If you wish a broader, liberal arts-oriented, non-professional program, you may pursue the bachelor of arts (B.A.) degree. In addition to the undergraduate program, courses leading to the following graduate degrees are offered: master of music, doctor of philosophy, and doctor of musical arts.

Music Scholarship Resources

**John R. Barnes Memorial Scholarship Fund**
Endowment income is to provide scholarship aid annually to enrolled students at the WVU College of Creative Arts majoring in instrumental music.

**Clifford and Carolyn Brown Music Alumni Scholarship**
Endowment income is to be used to provide scholarships for regularly enrolled undergraduate or graduate music majors in the Division of Music.

**Helen Canfield Endowed Music Scholarship**
Endowed income shall be used for scholarships for students enrolled in the Division of Music in the College of Creative Arts majoring in piano.

**Toni and Red Cowsert Music Scholarship**
Award is designated for students in the Division of Music with preference for those with disabilities.
Eleanor Tucker Donley Memorial Scholarship  
Endowment income is to be used to provide scholarships for undergraduate or graduate students in the Division of Music.

Herman Godes Scholarship for Piano Majors  
Endowment income is to be used to provide scholarships for undergraduate students in the College of Creative Arts Division of Music majoring in piano.

Susan B. Hardesty Music Scholarships  
Income shall be used for scholarships for undergraduate or graduate students enrolled in the College of Creative Arts Division of Music.

David C. and Susan B. Hardesty Music Scholarship  
Income shall be used annually for scholarships for undergraduate students enrolled in the College of Creative Arts Division of Music.

Susie Jamison Music Scholarship  
Income shall be used for scholarships for undergraduate students enrolled in the College of Creative Arts Division of Music.

John Shields Kramer Endowment Scholarship  
Endowment income is to be used to provide scholarships for deserving bass/baritone students enrolled in the Division of Music.

Elizabeth Traubert Lane Music Scholarship  
Spendable income is to provide scholarship aid annually to enrolled students in the Division of Music. The recipients shall be regularly enrolled students at WVU of junior, senior, or graduate rank and majoring in music education.

Frank E. and Margaret S. Lorince Scholarship  
Endowment income shall be used for scholarships for regularly enrolled freshman or first-year undergraduate or graduate students in music education in the Division of Music.

Loyalty Permanent Endowment Fund  
Scholarships for WV residents provided by the WVU Alumni Association through gifts from various alumni.

Geraldine Hess Lyon Educational Fund  
Endowment income is to be used to provide scholarships for graduates of Lincoln High School in Harrison County, WV, who are enrolled as undergraduate students in the Division of Music with preference given to students majoring in voice.

Music Faculty Recognition Scholarship  
Endowment income is to be used to provide scholarships for talented music students.

Phyllis McCane Osenton Music Scholarship  
Endowment income shall be used for scholarships for regularly enrolled sophomores, juniors, seniors, or graduate students in music education in the Division of Music.

Fine Performing Arts Scholarship  
Scholarship awards made possible through funding from West Virginia University.

Presser Scholarships  
Given yearly to a senior music student based on merit. Award is funded through a grant from the Presser Foundation.

Walter “Dusty” Rhodes Music Scholarship  
Endowment income is to be used to provide scholarships to undergraduate music majors from Monongalia, Marion, or Preston Counties in West Virginia, or Fayette or Greene Counties in Pennsylvania.

Ida Cope Tait Music Endowed Scholarship  
Endowment income is to be used to provide scholarships in the Division of Music.

University Presidential Scholarship  
Scholarship awards made possible through funding from West Virginia University.

Virginia Holden Wellock Music Scholarship  
Endowment income is to be used to provide scholarships for undergraduate or graduate students in the Division of Music.

James C. and Catherine Lemley West Endowed Scholarship  
Endowment income is to be used to provide scholarships for music majors in the Division of Music.
Edith Roberts Williams Music Scholarship
Endowment income is to be used to provide scholarships for undergraduate or graduate students in the Division of Music.

WV Wine and Jazz Festival Scholarship in Jazz Studies
Endowment income is to provide scholarship aid annually to enrolled students in the Division of Music. Recipients shall be regularly enrolled at WVU as undergraduate students majoring in jazz studies.

WVU Music Alumni Associate Scholarship Fund
Endowment income is to provide scholarship aid annually to enrolled students in the WVU College of Creative Arts Division of Music.

Musicale Scholarship Fund
Non-endowed fund to provide general music scholarships.

Philip T. & Michael E. Flach Scholarship II
Spendable income from this fund shall be used for student scholarship aid for residents of Marion County. First preference will be given to music majors.

Iris Lusk Memorial Scholarship Music
Endowment income shall provide undergraduate scholarships for students majoring in music.

Performing Ensembles
One of the hallmarks of the Division of Music is its commitment to the study and performance of high-quality and historically significant music from all stylistic genres. WVU music faculty continue to present highly praised performances, both on and off campus. Faculty performing groups include the Laureate Wind Quintet, the Faculty Jazz Ensemble, the West Virginia Piano Quartet, and the Faculty Chamber Ensemble. WVU student performing groups include a wide range of opportunities in a variety of musical traditions and styles.

The student and community performing groups are open to all qualified WVU students by audition. All groups must be taken for credit unless noted below.

In exceptional cases, high school seniors may perform at a director’s discretion in an ensemble for credit, provided the requirements as specified in this catalog are met. Qualified high school and junior high students may participate in select WVU student performing ensembles as part of the Community Arts Honors Ensemble Program with the permission of the director of the Community Arts Program and the ensemble director. For information contact the director of the Community Arts Program at (304) 293-4841 x3185.

The award-winning Mountaineer Marching Band (“The Pride of West Virginia”) of over 350 members is open by audition to all qualified students in the University. Its activities are confined to the first semester, during which it presents exciting shows at football games and other special occasions throughout the state and the country.

The Wind Symphony is a select group of the finest wind and percussion performers in the University. Membership is earned through competitive auditions. The ensemble presents at least four concerts per year comprised of the finest classical and contemporary wind literature.

The Symphonic Band is a 60-member ensemble open to both music and non-music majors. Membership is through audition. Emphasis is placed on learning and performing standard and modern concert literature. This ensemble rehearses two days per week and performs a concert at the end of each semester.

The Concert Band is open to any student in the University who wishes to continue his/her musical experience. Membership does not require an audition. This ensemble meets during the spring semester only and rehearses one day each week. Concerts include music by some of today’s top wind band composers and arrangers.

The 50-member Pep Band is open by audition to all qualified WVU students. It performs at men’s and women’s home basketball games and also travels to various tournaments.

The University Symphony Orchestra is open by audition to all qualified WVU students and adult residents of the community who are proficient in the playing of an orchestral instrument. The repertoire is that of the standard orchestra, with special emphasis on contemporary American music.
The University Choir is the flagship choral ensemble, numbering 35–40 vocalists selected by audition. This choir studies and performs challenging repertoire from all stylistic genres, accompanied and a cappella. The choir has premiered the music of student composers, participated in several recording projects, and presented major concerts both regionally and internationally.

The Concert Choir, an ensemble of 30–35 voices, specializes in the study and performance of standard choral repertoire from all stylistic genres. Vocalists are selected by audition.

The University Choral Union, a choir of 70–90 voices, studies and performs choral masterworks and other music for large choir. University students and adult community members may participate; an audition is required. Adult community members need not enroll.

In addition to the larger choirs, several vocal chamber ensembles are open by audition to the University community. Mountaineer Singers, a select group of 12–16 singers, studies and performs traditional chamber music including madrigals, partsongs, and contemporary forms. Comprehensive study and performance of traditional and contemporary vocal jazz music is presented in Same Difference, a vocal sextet with rhythm section, and the 16–24 voice Vocal Jazz Ensemble.

Small and large Jazz Ensembles are open by audition to all qualified WVU students. These ensembles perform a wide variety of jazz styles and many original compositions.

The Opera Theatre mounts fully staged productions of standard operatic repertoire and also presents programs of opera scenes each season. A variety of chamber ensembles feature combinations of woodwinds, brass, percussion, and string instruments and include the internationally acclaimed Percussion Ensemble, African Music and Dance Ensemble, and the New Music Ensemble.

General Requirements for the Bachelor of Music and Bachelor of Arts—Emphasis in Music

It is possible to complete any of the curricula described below in eight regular semesters with careful planning. You may elect to take additional courses, lengthening the time spent in your degree program.

Proficiency Levels Before graduation, you must satisfy a proficiency level (specified for each curriculum) in your principal performance area and in piano (not required in the B.A.). In addition to fulfilling the proficiency level requirement in piano indicated in the curriculum, you are required to demonstrate proficiency in keyboard harmony and sight-reading by passing a special examination. Music education majors must satisfy additional proficiencies.

You are required to take applied lessons on your principal performance medium each semester in residence. Proficiency levels in your principal performance medium are awarded at juries, which are usually given at the end of each semester. Jury policies for each principal performance area are given on the Division of Music website or are available from the chair’s office or the area coordinator.

Jury Policy All music majors, music minors, and non-majors if on music scholarship enrolled in Music 106–127, Music 500, or Music 700 in the fall and/or spring semesters must take a jury. Exceptions will be allowed only in the following cases: 1) when an area jury policy has a provision for a waiver, and 2) in the event of illness or injury. Students who miss juries due to illness or injury will receive an incomplete in Applied Study for the semester and must make up the jury during the subsequent semester prior to mid-term.

Students who are unable to make up a missed jury must submit a written petition to the division chair by mid-term of the first semester following the semester of the original missed jury. The petition must include a complete justification for missing the make-up jury and a written statement of support from the applied faculty member.

Major Ensemble Requirement You must register for a major ensemble in your major performance medium each semester of residence. Major ensembles are Music 100, 100A, 100D, 102, 103, 105, 183, and 183A. If you are a scholarship recipient, you may be called upon to render special service (as a participant in particular organizations or ensembles, as a piano accompanist, etc.) as designated by the division chairperson. Students whose major performance medium is percussion must, in addition to a major ensemble, register
for Freshman Percussion Ensemble, Second Percussion Ensemble, or Percussion 2000 each semester in residence. Students whose major performance medium is guitar must take guitar ensemble as a major ensemble.

**Chamber Music Requirement** Courses which satisfy the chamber music requirements for the B.M. and B.A. are Music 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 183B, 183C, 183D, 183E, 183F, 183G, and 183H.

**Recital and Convocation Attendance** If you are a full-time undergraduate music major entering as a freshman, you are expected to register for six semesters of Music 189 **Music Convocation** and to attend five recitals or concerts and five convocation meetings per semester. This requirement is adjusted for transfer students. B.A. students are required to take Music 189 for two semesters.

**Capstone Requirements** Senior-level capstone courses are required for all degree programs in the Division of Music. The required courses are as follows: MUSC 492 for the B.A., MUSC 467 and MUSC 488 for the B.M. in composition, MUSC 487 for the B.M. in music education, MUSC 435 for the B.M. in voice, MUSC 435A for the B.M. in piano, MUSC 488 for the B.M. in performance, and MUSC 488 and MUSC 112 for the B.M. in jazz studies. Details about capstone courses in music may be obtained from the instructors of capstone courses.

**Completion of Degree Requirements** You are responsible for being aware of and correctly fulfilling all graduation requirements. You should review the curriculum requirements both before and after every registration period so that errors or omissions will be detected immediately. If you are a transfer student, you must establish transfer credit from other institutions as early as possible in your WVU study—preferably during the first semester of residence. The degree of bachelor of music or bachelor of arts is conferred if you comply with the general regulations of the University concerning degrees, satisfy division requirements (including expected proficiency levels), and complete an appropriate curriculum with a minimum overall grade point average of 2.0 (C). Music education majors must attain a 2.75 average for graduation and certification.

If you achieve a grade of A in Music 262 **Sophomore Written Theory**, you may elect an upper-division theory analysis course (Music 463 or 464) in place of the Music 264 requirement. If you achieve a grade of A in Music 261 **Sophomore Aural Theory**, you may elect an upper-division theory elective in place of the Music 263 requirement.

**Music Theory and History** Electives Unless specified as a degree requirement, upper-division theory electives are Music 265, 266, 285, 286, 360, 461, 462, 463, 464, 465, 466, 468, 480, 481. Unless specified as a degree requirement, upper-division history electives are Music 470–475.

**Academic Progress** If in the judgment of the faculty, chair, and dean it will be impossible for you to complete graduation requirements in a reasonable length of time, your enrollment in the Division of Music will be terminated. If you are admitted conditionally, you must make up deficiencies as soon as possible. Further information regarding academic progress policies can be obtained from your advisor or the division chair’s office.

**Course Substitutions, Curricular Waivers, or Credit by Examination** Requests for course substitutions, curricular waivers, or credit by examination will need to be made in writing to the chair of music. If the chair endorses the request, it will be forwarded to the dean of the College of Creative Arts for final approval.

**Student Policies** For further information, refer to the current undergraduate student policies on the Division of Music website or at the office of the division chair.

**Bachelor of Music with a Major in Music Education**

Students successfully completing the music education curriculum and all tests required by the West Virginia Department of Education will be qualified for a professional certificate, grades birth through adult, which allows them to teach instrumental, vocal, and general music in West Virginia public schools. Music education students should begin as freshmen at proficiency level three on their principal performance medium (instrument or voice) and must complete proficiency level seven on the medium to be eligible for student teaching. Students must present two solo performances on the major instrument or voice in upper-level recitals before the semester in which they student teach.
**Pre-Professional Requirements** Before enrolling in professional education methods courses (MUSC 380, 381, 382) students must pass the Praxis Skills Test Pre-Professional Skills Tests (PPST), and meet the following GPA requirements: a) an overall GPA of 2.75 in all courses taken at WVU and at any other institution (this includes courses taken at other institutions that are not accepted by WVU); b) a GPA of 2.75 in all music (content area) courses; and c) a GPA of 2.75 in professional education courses and music education methods courses (Music 138, 180, 280, 281, 282, 283, 284, 380, 381, 382, 384; Education 301; SPED 304, 360; Reading 422) with no Ds or Fs in these courses. Also, students must successfully complete the following pre-professional requirements for any music education methods course: MUSC 133 or equivalent (Level 2), 138, 161–164, 177, 180, 200, 261, 262, 270.

In addition to the general pre-professional requirements indicated above, pre-professional requirements for specific music education methods courses are:

**MUSC 380**: MUSC 280 (minimum of two woodwind instrument proficiencies) and recorder proficiency and MUSC 281 (minimum of two brass instrument proficiencies) and guitar proficiency.

**MUSC 381**: MUSC 284 and at least one of the following MUSC 280 (minimum of two woodwind instrument proficiencies) and recorder proficiency; or MUSC 281 (minimum of two brass instrument proficiencies) and guitar proficiency; or MUSC 282 (minimum of two instrument proficiencies); or MUSC 283 (minimum of four percussion instrument proficiencies) and the world music module.

**MUSC 382**: MUSC 280 (minimum of two woodwind instrument proficiencies) and recorder proficiency and MUSC 281 (minimum of two brass instrument proficiencies) and guitar proficiency.

The PPST requirement can be waived for students who have a composite score of 25 (26 enhanced) or above on a single administration of the ACT or a score of 1035 (1125 recentered) or above on a single administration of the verbal and math portions of the SAT.

Requirements to student teach, students must pass all proficiency examinations prior to the semester in which they student teach. In addition to the piano, recorder, world music, and guitar proficiencies listed above, students must pass proficiencies on voice and selected woodwind, brass, string, and percussion instruments. For the piano proficiency, all undergraduate music education majors (non-piano principals) are required to successfully complete Music 133 or its equivalent (level two) as a minimum proficiency in piano. All music education students, including piano principals, must pass a proficiency examination in keyboard harmony and sightreading.

To be eligible to student teach, students must pass the Praxis Series subject area test in music (Music: Content Knowledge [0113]) and meet the following GPA requirements: a) an overall GPA of 2.75 in all courses taken at WVU and at any other institution (this includes courses taken at other institutions that are not accepted by WVU); b) a GPA of 2.75 in all music (content area) courses; and c) a GPA of 2.75 in professional education courses and music education methods courses (MUSC 138, 180, 280, 281, 282, 283, 284, 380, 381, 382, 384; EDUC 301; Special Education 304, 360, Reading 422) with no Ds or Fs in these courses.

To be recommended for certification, students must pass one of the three following professional education tests: Principles of Learning and Teaching K–6, Principles of Learning and Teaching 5–9, or Principles of Learning and Teaching 7–12.

**Student Teaching** Students may indicate a preference to student teach during the fall or spring semester. Ordinarily, preferences will be accommodated, although there may be certain instances in which students will be advised to change semesters. The primary considerations when assigning students to teaching placements are the quality of the placement and the students’ professional goals. Due to the limited number of music placements in the Morgantown area, students should plan to relocate during the semester in which they student teach. Student requests for specific regions, school districts, etc. will not be entertained by the coordinator of the music student teaching program unless the student can demonstrate that she or he is faced with severe personal constraints. Teaching placements will generally be within a 100-mile radius of Morgantown. Students should plan to provide their own transportation during the student teaching semester.
Required Courses

Professional Education (16 Credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 301</td>
<td>3</td>
</tr>
<tr>
<td>SPED 304, 360</td>
<td>6</td>
</tr>
<tr>
<td>Reading 422</td>
<td>3</td>
</tr>
<tr>
<td>Curriculum and Instruction 491</td>
<td>4</td>
</tr>
</tbody>
</table>

Studies in Music (85–91 Credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 189 Convocation (six semesters)</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 177 Introduction to Music Listening</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 270–271 Music Literature</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 180 Introduction to Music Education</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 280–284 Music Pedagogy</td>
<td>10</td>
</tr>
<tr>
<td>MUSC 200–202 Conducting</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 161, 163, 261, 263 Aural Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 Written Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 130–133 Secondary Piano (if piano is not principal)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 138 Voice Class (if voice is not principal)</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 150–183H, 140–149 Chamber Music</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 106–127 Principal Performance Studies</td>
<td>14</td>
</tr>
<tr>
<td>MUSC 380 Instrumental Music Education</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 381 Vocal Music Education</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 382 General Music Education</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 384 Music Arranging for Public School Groups</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 487 Student Teaching Capstone</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 491 Profession Field Experience (student teaching)</td>
<td>10</td>
</tr>
<tr>
<td>Major Ensemble</td>
<td>7</td>
</tr>
<tr>
<td>GEC Requirements</td>
<td>35</td>
</tr>
</tbody>
</table>

Grand Total: 142

Combined Performance/Music Education Curriculum

An optional program can be arranged for outstanding students who desire to meet the requirements of majors in both performance and music education. Admission to this rigorous program is by written consent of the coordinator of the appropriate performance area and the coordinator of music education after the student has completed two semesters. This curriculum satisfies the course requirements of the professional certificate for birth through adult. The numerous possible combinations of performance with music education cannot be listed separately here. When you become a candidate for this degree, your advisors designate the specific courses that must be taken to satisfy the requirements for both a bachelor’s in performance and a bachelor’s in music education. By attending summer sessions, if appropriate courses are available, it may be possible to complete the combined curriculum in four calendar years, although it usually takes longer.

Bachelor of Music with a Major in Performance

The performance curricula are especially designed for students wishing to prepare themselves as performers or as teachers of a particular instrument or voice. The increased interest of society today in the arts is creating many new opportunities for the professional musician and for the private music teacher.

A student in a performance curriculum, if entering as a freshman, should achieve proficiency level six in the principal performance area at the time of audition, and must complete proficiency level ten in that area to be eligible for graduation. In addition to presentation of a senior recital, performance majors also must make three solo appearances on the major instrument in upper-level student recitals or convocations. Exceptions to this policy are noted below.
Performance Curriculum: Band or Orchestra Instrument, or Guitar

Flute, oboe, clarinet, saxophone, bassoon, horn, trumpet, trombone, euphonium, tuba, percussion, violin, viola, cello, double bass, and guitar. A proficiency level of ten and three solo appearances on upper-level recitals are required for graduation.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Area</td>
<td></td>
</tr>
<tr>
<td>MUSC 106–126 Applied Music in a band, orchestra</td>
<td>32</td>
</tr>
<tr>
<td>instrument, or guitar</td>
<td></td>
</tr>
<tr>
<td>MUSC 432–433 Methods and Pedagogy</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 488 Recital</td>
<td>2</td>
</tr>
<tr>
<td>Chamber Music</td>
<td>4</td>
</tr>
<tr>
<td>Major Ensemble</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
</tr>
</tbody>
</table>

Music Supportive Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 189 Convocation (six semesters)</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 177 Introduction to Music Listening</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 200 Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 270–271 Music Literature</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 161, 163, 261, 263 Aural Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 Written Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 130–135 Piano Class</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
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</table>

GEC Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Total</td>
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Music Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Electives (any area)</td>
<td>4</td>
</tr>
<tr>
<td>Theory Electives</td>
<td>6</td>
</tr>
<tr>
<td>Music History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>129</td>
</tr>
</tbody>
</table>

Performance Curriculum: Piano (Traditional Emphasis)

Proficiency level ten and three solo upper-level recitals are required for graduation.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Area</td>
<td></td>
</tr>
<tr>
<td>MUSC 118 Applied Music (piano)</td>
<td>32</td>
</tr>
<tr>
<td>MUSC 432–433 Methods and Pedagogy (piano)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 434–435 Repertoire, (piano)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 488 Recital</td>
<td>2</td>
</tr>
<tr>
<td>Major Ensemble</td>
<td>2</td>
</tr>
<tr>
<td>Chamber Music, (Must be performed on a keyboard instrument.)</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
</tr>
</tbody>
</table>

Music Supportive Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 189 Convocation (six semesters)</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 177 Introduction to Music Listening</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 270–271 Music Literature</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 200 Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 161, 163, 261, 263 Aural Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 Written Theory</td>
<td>8</td>
</tr>
<tr>
<td>Theory Electives</td>
<td>6</td>
</tr>
<tr>
<td>Music History Elective</td>
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GEC Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>35</td>
</tr>
</tbody>
</table>
Electives
Music Electives (from any area) ................................................................. 9
Chamber Music Electives ..................................................................... 2
Major Ensemble or Chamber Music Electives ...................................... 2
Total .................................................................................................... 48–50
Total .................................................................................................... 128

**Performance Curriculum: Piano (Coaching/Accompanying Emphasis)**

Admission only by approval of the piano faculty. Required for graduation: coach and accompany under supervision, two full voice recitals, one string recital, one recital of another instrument (clarinet, flute, oboe, horn, etc.); coach, prepare musically, and accompany in performance two scenes from standard-repertory operas in their original languages (scenes should involve a minimum of two people and have some dramatic development). A proficiency level of ten is required. No solo performances on upper-level recitals are required.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Area</td>
<td></td>
</tr>
<tr>
<td>MUSC 118 Applied Music Piano</td>
<td>32</td>
</tr>
<tr>
<td>MUSC 432–433 Methods and Pedagogy (piano)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 434–435 Repertoire (piano)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 488 Recital</td>
<td>2</td>
</tr>
<tr>
<td>Major Ensemble</td>
<td>2</td>
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<tr>
<td>Total</td>
<td>44</td>
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**Music Supportive Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 189 Convocation (six semesters)</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 177 Introduction to Music Listening</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 270–271 Music Literature</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 200 Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 161, 163, 261, 263 Aural Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 Written Theory</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
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</table>

**Coaching and Accompanying Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 104 Introduction to Opera Theatre</td>
<td>6</td>
</tr>
<tr>
<td>MUSC Chamber Music (as an accompanist)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 169 Diction</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 434–435 Repertoire (voice)</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
</tr>
</tbody>
</table>

**GEC Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>35</td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber Music, (Must be performed on a keyboard instrument.)</td>
<td>2</td>
</tr>
<tr>
<td>Theory Electives</td>
<td>6</td>
</tr>
<tr>
<td>Music History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
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</tbody>
</table>

**Grand Total**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>137</td>
</tr>
</tbody>
</table>

**Performance Curriculum: Piano (Pedagogy Emphasis)**

Admission only by approval of the piano faculty. Required for graduation: proficiency level nine, senior recital, and three solo performances on upper-level recitals.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Area of Performance</td>
<td></td>
</tr>
<tr>
<td>MUSC 118 Applied Music Piano</td>
<td>32</td>
</tr>
<tr>
<td>MUSC 488 Recital</td>
<td>2</td>
</tr>
<tr>
<td>Chamber Music (At least two semesters must be performed on a keyboard instrument.)</td>
<td>4</td>
</tr>
<tr>
<td>Major Ensemble</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
</tr>
</tbody>
</table>
Music Supportive Courses
- MUSC 189 *Convocation* (six semesters) ......................................................... 0
- MUSC 177 *Introduction to Music Listening* ................................................... 1
- MUSC 270–271 *Music Literature* .................................................................. 6
- MUSC 200 *Conducting* .............................................................................. 2
- MUSC 161, 163, 261, 263 *Aural Theory* ....................................................... 8
- MUSC 162, 164, 262, 264 *Written Theory* .................................................... 8

**Total** ............................................................................................................ 25

Pedagogy Courses
- MUSC 382 *Music Education* ....................................................................... 3
- MUSC 492 *Directed Music Studies: Pedagogy Project* ................................. 2
- MUSC 430 *Piano Class Methods and Materials* ......................................... 3
- MUSC 431 *History of Keyboard Pedagogy and Technique* ....................... 3
- MUSC 432–433 *Methods and Pedagogy (Piano)* ......................................... 4
- MUSC 434–435 *Repertoire (Piano)* ............................................................... 4

**Total** ............................................................................................................ 19

GEC Requirements
- **Total** ........................................................................................................... 37

Electives
- Chamber Music ......................................................................................... 2
- Theory Electives ...................................................................................... 6
- Music History Elective ........................................................................... 3

**Total** ............................................................................................................ 11

**Grand Total** ............................................................................................. 130

**Performance Curriculum: Piano (Jazz Emphasis)**

Admission only by approval of the piano faculty. (Limited to those students with experience and a demonstrated ability in the area of jazz improvisation.) Required for graduation: proficiency level nine, senior recital (no more than one-half of program consisting of jazz), and three solo upper-level recital performances.

**Required Courses**

**Hrs.**

Major Area

- MUSC 112 *Applied Music (Jazz)* ............................................................... 8
- MUSC 118 *Applied Music (Piano)* .............................................................. 24
- MUSC 285–286 *Beginning and Advanced Improvisation* ...................... 4
- MUSC 432–433 *Methods and Pedagogy (Piano)* ....................................... 4
- MUSC 434–435 *Repertoire (Piano)* ............................................................. 4
- MUSC 488 *Recital* .................................................................................. 2
- Chamber Music (must perform jazz piano) ............................................... 6
- Major Ensemble ....................................................................................... 2

**Total** ........................................................................................................... 54

Music Supportive Courses

- MUSC 189 *Convocation* (six semesters) .................................................. 0
- MUSC 177 *Introduction to Music Listening* ........................................... 1
- MUSC 270–271 *Music Literature* ............................................................... 6
- MUSC 200 *Conducting* .......................................................................... 2
- MUSC 161, 163, 261, 263 *Aural Theory* .................................................... 8
- MUSC 162, 164, 262, 264 *Written Theory* ................................................ 8
- Theory Electives ..................................................................................... 6
- Music History Elective ........................................................................... 3

**Total** .......................................................................................................... 34

GEC Requirements

- **Total** ...................................................................................................... 35–37

Electives
- Music Electives (from any area) ............................................................. 5

**Grand Total** ........................................................................................... 128
Performance Curriculum: Voice

In addition to the required proficiency level ten in voice, a student completing this curriculum must also achieve proficiency level three in piano before graduation. One year of Italian, French, or German is required. Three solo upper-level recitals are required. Students can take Opera Theatre for credit only during the junior and senior years. Other policies related to this degree program can be found in the Vocal Student Handbook.

Required Courses

Major Area

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 104 Opera Theatre</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 102 or 105 Choral Ensemble</td>
<td></td>
</tr>
<tr>
<td>(or 2 hr. in MUSC 183G–183H MUSC 147–149)</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 127 Applied Music (Voice)</td>
<td>32</td>
</tr>
<tr>
<td>MUSC 169 Diction</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 432–433 Methods and Pedagogy (Voice)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 434–435 Repertoire (Voice)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 488 Recital</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
</tr>
</tbody>
</table>

Music Supportive Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 189 Convocation (six semesters)</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 177 Introduction to Music Listening</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 270–271 Music Literature</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 200 Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 161, 163, 261, 263 Aural Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 Written Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 130–135 Piano</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
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</tbody>
</table>

GEC Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory Electives</td>
<td>6</td>
</tr>
<tr>
<td>Music History Elective</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

Grand Total

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>139</strong></td>
</tr>
</tbody>
</table>

Performance Curriculum: Woodwinds

If you are a performance major whose major instrument is in the woodwind family and you show strong performance ability on another woodwind instrument, you may qualify for the performance curriculum in woodwinds. Approval for admission to this curriculum will not be given by the woodwind faculty until after the first year of study, at which time you must achieve an appropriate level on three of the five woodwind instruments. In addition to the senior recital (which may be given on more than one instrument), you must present three solo upper-level student recital performances, one on each of the three major instruments. Proficiency level requirements for this curriculum are:

- A primary major woodwind instrument—proficiency level nine.
- Two secondary major woodwind instruments—proficiency level seven.
- Two minor woodwind instruments—proficiency level four.
- Piano—proficiency level two.

Required Courses

Major Area

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 106, 108, 110, 115 or 120 Applied Music</td>
<td>42</td>
</tr>
<tr>
<td>MUSC 432–435 Methods and Pedagogy</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 488 Recital</td>
<td>2</td>
</tr>
<tr>
<td>Chamber Music</td>
<td>6</td>
</tr>
<tr>
<td>Major Ensemble</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>
Music Supportive Courses
MUSC 189 Convocation (six semesters) ........................................................................ 0
MUSC 127 Introduction to Music Listening .................................................................. 1
MUSC 270–271 Music Literature .................................................................................. 6
MUSC 200 Conducting .................................................................................................. 2
MUSC 161, 163, 261, 263 Aural Theory ......................................................................... 8
MUSC 162, 164, 262, 264 Written Theory ...................................................................... 8
MUSC 130–135 Piano Class .......................................................................................... 4
MUSC 265 and 266 Instrumentation, Orchestration, Arranging................................. 4
Total .......................................................................................................................... 33

GEC Requirements
Total .......................................................................................................................... 35–37

Electives (9 Credits)
Theory Electives ......................................................................................................... 6
Music History .............................................................................................................. 3
Total .......................................................................................................................... 9

Grand Total ................................................................................................................ 137

Bachelor of Music with a Major in Jazz Studies
Admission only by approval of jazz area faculty. Proficiency level ten in jazz performance and level five in classical performance are required for graduation.

Required Courses

Major Area
MUSC 106–127 Applied Music .................................................................................... 32
MUSC 285 Intro to Jazz Improvisation ........................................................................ 2
MUSC 286 Advanced Jazz Improvisation .................................................................... 2
MUSC 488 Recital ........................................................................................................ 2
Chamber Music (must be in jazz ensembles) ................................................................. 5
Large Ensemble, or Music 149 Chamber Accompaniment ........................................ 3
Total .......................................................................................................................... 46

Music Supportive Courses
MUSC 189 Convocation (six semesters) ........................................................................ 0
MUSC 177 Introduction to Music Listening .................................................................. 1
MUSC 270–271 Music Literature .................................................................................. 6
MUSC 200 Conducting .................................................................................................. 2
MUSC 161, 163, 261, 263 Aural Theory ......................................................................... 8
MUSC 162, 164, 262, 264 Written Theory ...................................................................... 8
MUSC 130–135 Piano Class (not required for keyboard performers) ......................... 8
MUSC 475 History of Jazz ............................................................................................ 3
MUSC 480 Arranging Small Jazz Ensemble ................................................................. 2
MUSC 481 Arranging Large Jazz Ensemble ................................................................. 2
MUSC 468 Jazz Harmony ............................................................................................ 2
Total .......................................................................................................................... 42

GEC Requirements
Total .......................................................................................................................... 35

Electives
Music Electives (in any area) ....................................................................................... 8
Grand Total ................................................................................................................ 131

Bachelor of Music with a Major in Composition
A composition major should enter as a freshman having achieved proficiency level four on the major instrument, and must complete proficiency level eight on that instrument before graduation. If piano is not the major instrument, the student must achieve a level four on piano. The student must reach level four before earning four credits: the remaining credits are treated as free electives. Piano majors reduce total curricular credits by four. At least a B average in the required freshman and sophomore theory courses (MUSC 161–164, 261–264) or the consent of the coordinator of theory/composition is required.
for continuation in this curriculum. The major project (MUSC 467) must be in composition. Majors in this curriculum must present two solo performances on the major instrument in upper-level recitals before graduation.

### Required Courses

**Hrs.**

<table>
<thead>
<tr>
<th>Major Area</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 160 Introduction to Composition</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 265 Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 266 Orchestration and Band Arranging</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 460 Upper Division Composition</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 461–462 Counterpoint</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 463 or 464 Analysis</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 467 Major Project in Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 465–466 Electronic Music</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 488 Recital</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>32</td>
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</table>

**Music Supportive Courses**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 189 Convocation (six semesters)</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 177 Introduction to Music Listening</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 270–271 Music Literature</td>
<td>6</td>
</tr>
<tr>
<td>MUSC 200 Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 161, 163, 261, 263 Aural Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 Written Theory</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 130-135 Secondary Piano (if piano is not principal)</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 183–183H, 100–105 or 140–149</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 106–127 Principal Performance Studies</td>
<td>16</td>
</tr>
<tr>
<td>MUSC 474 Music of the Twentieth Century</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>56</td>
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</table>

**GEC Requirements**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Foreign Language (in one language)</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total (six may come from foreign language study)</strong></td>
<td>35</td>
</tr>
</tbody>
</table>

**Electives**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Electives (from any area)</td>
<td>2</td>
</tr>
<tr>
<td>Music History Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5</td>
</tr>
</tbody>
</table>

**Grand Total**

|                                                 | 128  |

**Bachelor of Arts in Music**

The bachelor of arts in music provides students with the opportunity to major in music while pursuing a broad liberal arts education. Depending upon the courses taken beyond those required for the major, one may prepare for a variety of careers, not just those associated with music. To enter this program, in addition to being admitted to WVU, you must meet audition requirements on one of the following: a band or orchestral instrument, guitar, piano, or voice. Unless otherwise specified, general College of Creative Arts and WVU regulations apply. Three principal areas of coursework are required, as shown in the following outline:

**Required Courses**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GEC Requirements</td>
<td>41–43</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>12</td>
</tr>
<tr>
<td>Non-Major Electives</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>78</td>
</tr>
</tbody>
</table>

**Note:** Foreign language study, consisting of 12 credits in a single language, is in addition to GEC requirements.
Musicianship
- History (MUSC 177, 270, 271 WR) ................................................................. 7
- Theory (MUSC 161, 162, 163, 164, 261, 262, 263, 264) ................................. 16
- Upper-Level Music Electives (in theory, composition, history or lit.) ............... 3–6
- Total .............................................................................................................. 26

Performance
- Ensembles (Music 100–105, 140–149, 150–159, 183–183H) ......................... 8
- Major Performance Area (Music 106-127) .................................................... 16
- Total .............................................................................................................. 24
- Grand Total .................................................................................................. 128

You must attain a proficiency in your major performance area suitable for public performance (at least level seven). Secondary piano proficiency is not required. Two solo upper-level appearances and two semesters of MUSC 189 Music Convocation are required. If you do not make satisfactory progress in achieving the expected performance proficiency, you will be discontinued.

Music Minor
The music minor allows students in any undergraduate major who have competency in music to receive official transcript recognition for their music studies at WVU. The music minor reflects a minimum of 18 hours of study in the areas of music history, theory, and performance.

The intention to declare a minor in music should occur no later than the semester prior to the student’s junior year. Check sheets with the requirements for minors are available in the College of Creative Arts Student Records Office, with the advisor for music minors, or on the Division of Music’s website. It is the responsibility of the student to obtain information about the minor and to complete the required courses.

Admission to this program is based on two criteria: a performance audition (vocal or instrumental), and the availability of teaching time in the particular applied studio. The entering performance level must be at least a level three.

Successful completion of the music minor is based on a minimum 2.5 grade point average in the selected music courses, and improvement in the student’s performance skills as assessed by the music faculty in music juries (performance final examinations).

At the time of application for graduation, the student must request certification for the minor. Successful completion of the requirements for a formal minor in music will be recorded on the student’s official transcript by the student’s major degree program.

Division of Theatre and Dance
Joshua Williamson, M.F.A., Chair
Jerry McGonigle, M.F.A., Associate Chair
http://theatre.wvu.edu/

Degrees Offered
- Bachelor of Arts
- Bachelor of Fine Arts
  - Major in Theatre (Acting, Puppetry/Creative Dramatics, Theatre Design and Technology)

Accreditation
The Division of Theatre and Dance and its programs in theatre are fully accredited by the National Association of Schools of Theatre (NAST).

Nature of Program
The Division of Theatre and Dance offers an intensive training program for the student who seeks artistic growth and development. The four-year course of study, leading to the bachelor of fine arts (B.F.A.) degree, is designed for students who intend to pursue professional theatre careers, or who may enter other fields where theatre skills are desirable.
The theatre major may choose from among several different areas of emphasis, each of which provides a well-rounded knowledge of the art as well as an opportunity to specialize. The various curricula combine formal classes in theory with practical application and experience in the division’s theatre, studio, and laboratory areas. A bachelor of arts degree covering a broad aspect of theatre studies is also available.

Mission Statement
We, the faculty and staff, educate students in the diverse traditions and practices of theatre and dance. We challenge each student to engage and confront—vigorously, honestly, and innovatively—the many processes of collaborative theatre and dance. We exemplify to our students the role of creative artists to develop, to explore, and to contribute meaningfully to the world they inhabit.

Performances
The division annually produces five to seven major productions in its three major performance spaces, the Gladys G. Davis Theatre, Lyell B. Clay Concert Theatre, and the Vivien Davis Michael Theatre. These productions provide practical experience for all theatre students and serve the community audience a balance of classic and contemporary drama.

Young People’s Theatre: Theatre majors, under the direction of a faculty member, operate a complete puppet theatre program. The division’s Puppet Mobile tours the state from September through April. Creative dramatics and children’s theatre are also offered. The division presents one major dance concert each year.

Entrance Requirements
Upon entrance, students must comply with the general regulations of the University concerning degrees, satisfy all entrance and divisional requirements, and complete one of the curricula of the Division of Theatre and Dance with a 2.0 (C) grade point average.

For admission to the junior year of the Division of Theatre and Dance, a student must have established an overall 2.0 (C) grade point average. Transfer students must establish transfer credit from other institutions during the first semester in which they are enrolled in the Division of Theatre and Dance.

Students are responsible for correctly fulfilling all requirements. Each student should review the course requirements both before and after every registration period so that errors or omissions will be detected immediately.

Graduates of the Division of Theatre and Dance are employed in professional theatre, radio, television, and film. Others have chosen careers in fashion design, commercial sales, makeup, lighting design and installation, law, and positions in the public arena. Undergraduates are frequently offered graduate student positions with leading University training programs offering M.F.A. study.

Theatre and Dance Scholarship Resources
Susan Tait Endsley Drama Scholarship
Scholarships for students in theatre

Sam Boyd Jr. Scholarship
Scholarships for students in theatre

Mabel DeVries Tanner Drama Scholarship
Endowment income to be used for drama students enrolled at WVU. First preference will be given to students with financial need from the Morgantown area and secondly to residents of West Virginia.

Charles D. Neel Scholarship
Endowment income to be used for regularly enrolled undergraduate junior or senior students in the bachelor of fine arts program in the Division of Theatre and Dance.

Richard S. Lawrence Memorial Book Scholarship
Income shall be used to provide book scholarships to undergraduate students.

Susan J. Robinson Performing Arts Scholarship
Endowment income to be used for regularly enrolled undergraduate or graduate students majoring in theatre.
Theatre Curricula
Students may select an area of emphasis in acting, theatre design and technology, or creative dramatics/puppetry offered through the bachelor of fine arts degree. General theatre studies are offered through the bachelor of arts degree.

Teacher Certification
Although there is no teacher certification with a specialty in theatre, students planning to teach theatre at the high school level will pursue certification in teacher education, which may include coursework in theatre.

Acting
The first two years of the program are considered probationary. Admission to the junior year (the studio program) is carefully limited to maintain a nucleus of talented actors with balanced skills and abilities. The studio program is structured as a closed program, open only by invitation from the acting faculty, and from which one may be dismissed. Students not chosen for the studio program may transfer to the B.A. program.

Design/Technology
In addition to completing the required coursework, students enrolled in design/technology emphasis program must participate in a portfolio review at the end of each semester of their sophomore and junior years. First-semester seniors must also complete a portfolio review. Furthermore, additional mid-term assessments may be required at the discretion of the division chair or the director of the design and technology program. Students must successfully complete these assessments to be allowed continue in the program.

Theatre Minor/Dance Minor
The Division of Theatre and Dance offers two separate minor programs.

The theatre minor allows students in any undergraduate major who might have an interest in theatre to receive official transcript recognition of their theatre studies at WVU. The theatre minor reflects 19 hours of study in all areas of the theatre including acting, design and technology, creative dramatics, and theatre history and criticism. Courses should be taken as follows in each of three areas: (History and Theory: 6 cr.) THET 101 or 112 and THET 361, 362, 363 or 170; (Performance: 3 cr.) THET 102 or 144; (Production: 3-4 cr.) THET 110, 111, or 314; (Electives: 6 cr.) DANC 102, THET 143, 200, 220, 225, 240, 242, 244, 302, 400, 404, 461, or 462.

The dance minor is intended for any WVU undergraduate major who has an interest in the study of basic dance methods. The dance minor requires 19 structured hours of dance studies in all areas of dance performance. Courses include technique classes in modern, jazz, and ballet, and fundamental classes in production, choreography, and dance history. The following courses must be completed for the dance minor: DANC 102, or 121, 142 or 241, 160, 131 or 132, THET 314, THET 242 or DANC 293/493 or MUSC 492B or DANC 121, DANC 371 and 362.

A student must declare his or her intention to complete a minor in theatre and/or dance at the College of Creative Arts Records Office or at the Division of Theatre and Dance offices. It is the responsibility of the student to obtain information about the minor and to complete all of the required courses. Minors are welcome to audition for and participate in all division productions.

At the time of application for graduation, the student must indicate that he or she wishes to be certified as a minor. Successful completion of the minor will be recorded on the student’s official transcript by the student’s major degree program.

Bachelor of Arts Degree Requirements
Students pursuing the bachelor of arts are those interested in a program that takes them through a more traditional liberal arts degree program. Students are responsible for the same University requirements found in all other degree programs. The B.A. student in theatre is one who chooses not to specialize in any one area of the art form, but prefers instead to pursue as many educational options as possible. Depending upon the student's individual interests, courses may be selected from areas which could provide a basis for future graduate study and/or careers in directing, stage management, playwriting, puppetry and children's theatre, acting, or design and technology, etc. Of these courses, 60 percent
of the B.A. is in general education outside the discipline of theatre and approximately 40 percent of the program falls within the areas of theatre studies, theatre performance, and theatre electives.

**Bachelor of Fine Arts Degree Requirements**

### Acting Emphasis

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>THET 112 Orientation to the Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THET 110 Stagecraft</td>
<td>4</td>
</tr>
<tr>
<td>THET 111 Costuming</td>
<td>4</td>
</tr>
<tr>
<td>THET 143 Freshman Directing Workshop</td>
<td>1</td>
</tr>
<tr>
<td>THET 221 Theatre Make-up</td>
<td>3</td>
</tr>
<tr>
<td>THET 230 Text Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

**Theatre History Courses (three from the following):**

- THET 170 World Drama, THET 361, 362, 363 *Theatre History* | 9 |

**Performance Courses:**

- THET 144, 244, 344, 444 *Acting courses* | 12 |
- THET 345, 445 *Acting Studio courses* | 6 |
- THET 240, 340, 440, 441 *Voice courses* | 10 |
- THET 242, 342, 442, 443 *Stage Movement courses* | 10 |
- THET 447 (x2) *Scene Study* | 2 |
- THET 493A (x2) *Acting Modules* | 6 |

**Practicum Courses:**

- THET 200 (x2) *Sophomore Crew* | 2 |
- THET 400 (x3) *Theatre Rehearsal/Performance Lab* | 3 |
- THET 401 Capstone Experience (or THET 445) | 3 |

**Open electives** | 9 |

**University GEC Requirements** | 38–43*

**Grand Total** | 130*

* Actual number of credits will be determined by the number and level of the elected GEC courses.

### Design Technology Emphasis

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>THET 112 Orientation to the Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THET 302 Directing</td>
<td>3</td>
</tr>
<tr>
<td>THET 327 &amp; 328 <em>Costume History &amp; Decor</em></td>
<td>3</td>
</tr>
</tbody>
</table>

**Theatre History Courses:**

- THET 170 *World Drama*, THET 361, 362, 363 *Theatre History* | 12 |

**Design/Tech Foundation Courses:**

- THET 102 or 144 *Acting course* | 3 |
- THET 110 Stagecraft | 4 |
- THET 111 Costuming | 4 |
- THET 113 *Stage Management* | 1 |
- THET 220 *Fundamentals of Lighting* | 3 |
- THET 222 *Scenographic Techniques* (drafting) | 3 |
- THET 225 & 226 *Introduction to Stage Design* | 6 |
- THET 329 *CAD for the Stage* | 3 |

**Intermediate Technical Courses (Two from the following):**

- THET 221 *Theatre Make-up* | 3 |
- THET 310 *Stagecraft 2* | 3 |
- THET 330 *Rendering* | 3 |
- THET 425 *Adv Costume Construction* | 3 |
- THET 433 *Model Building* | 3 |
Advanced Technical Courses (Three from the following):
THET 321 Stage Properties.........................................................3
THET 423 Costume Crafts..........................................................3
THET 424 Adv. Technical Production.........................................3
THET 427 Lighting Technology.................................................3
THET 428 Scene Painting..........................................................3
THET 429 Sound Seminar..........................................................3

Design Courses (Three from the following):
THET 325 Lighting Design..........................................................3
THET 421 Lighting Techniques...................................................3

Practicum Courses:
THET 200 (x2) Sophomore Crew .............................................2
THET 400 (x3) Theatre Rehearsal/Performance Lab......................3
THET 401 Capstone Experience................................................3

Open electives...........................................................................9–13*
University GEC Requirements..................................................38–43*

*Actual number of credits will be determined by the number and level of the elected GEC courses.

Puppetry/Creative Dramatics Emphasis

Required Courses

Hrs.

Theatre Studies Courses:
THET 112 Orientation to the Theatre.........................................3
THET 302 Directing.....................................................................3
THET 404 Playwriting..................................................................3

Theatre History Courses:
THET 170 World Drama, THET 361, 362, 363 Theatre History........12

Design/Technical Courses:
THET 110 Stagecraft.................................................................4
THET 111 Costuming.................................................................4
THET 113 Stage Management....................................................1
THET 220 Fundamentals of Lighting.........................................3
THET 221 Theatre Make-up......................................................3
THET 321 Stage Properties.........................................................3

Performance Courses:
THET 144 Fundamentals of Acting............................................3
THET 242 Fundamentals of Movement.......................................3
THET 403 Advanced Directing.................................................3
THET 461 Creative Dramatics....................................................3
THET 462 Puppetry for Educators.............................................3
THET 463 Children’s Theatre....................................................3

Non-Theatre Courses:
MUSC 181 Music Skills............................................................2
LS 403 Children’s Literature....................................................3
C&I 411 Early Childhood Education..........................................3

Practicum Courses:
THET 200 (x2) Sophomore Crew .............................................2
THET 400 (x3) Theatre Rehearsal/Performance Lab....................3
THET 401 Capstone Experience................................................3

Open electives...........................................................................9–16*
University GEC Requirements..................................................38–43*

Grand Total.............................................................................128*

Bachelor of Arts Degree Requirements

Required Courses

Hrs.

Theatre Studies Courses:
THET 112 Orientation to the Theatre.........................................3
THET 113 Stage Management....................................................1

College of Creative Arts
Multidisciplinary Studies Bachelor of Arts Degree

The College of Creative Arts multidisciplinary studies (MDS) degree program is comprised of at least two minors from the College of Creative Arts and one minor another related discipline. Students also have the option of selecting three minors from the College of Creative Arts. Because the MDS program allows for an individualized curriculum and a focused path to graduation, students can pursue their own individual educational interests while still graduating in a timely fashion.

For example, a student might choose minors in arts administration, music, and advertising with the goal of pursuing a career in the music and recording industry. Depending upon the individual's interests and needs, a broad number of minors can be combined to create a customized course of study that still allows the student to earn a degree from the College of Creative Arts.

The College of Creative Arts multidisciplinary studies (B.A.) degree program includes the following requirements:

Curriculum

- Completion of the University's General Education Curriculum
- Completion of English 101 and 102, or 103
- Completion of a writing (W) course in addition to English 101 and 102, or 103
- Completion of a mathematics course in addition to any additional math requirements of the selected minors
- Completion of three minors (two of which must be from the College of Creative Arts) in which none of the courses has been used to satisfy General Education Curriculum requirements
- A grade of C or better in all minor coursework
- Completion of at least 60 credit hours of 200-level or above coursework. Of the 60 hours, 30 must be 300–400 level coursework
- Completion of a 492 capstone course in one of the college's three divisions
- Achievement of a cumulative grade point average of at least 2.0

Admission Requirements for College of Creative Arts Minors

- Admission to the music minor program is based on a successful audition.
- There are no special admission requirements for the minors in art history, arts administration, dance, theatre, or visual arts.
Degrees Offered

- Bachelor of Science in Aerospace Engineering
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Science
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Biometric Systems
- Bachelor of Science in Industrial Engineering
- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Mining Engineering
- Bachelor of Science in Petroleum and Natural Gas Engineering

Dual Degrees Offered

- Aerospace Engineering and Mechanical Engineering
- Civil Engineering and Mining Engineering
- Computer Engineering and Electrical Engineering
- Computer Engineering and Biometrics Systems
- Computer Science and Computer Engineering
- Electrical Engineering and Biometric Systems
- Mining Engineering and Geology

Nature of Program

The College of Engineering and Mineral Resources (CEMR) undergraduate degree programs are administered through seven academic departments: chemical engineering; civil and environmental engineering; computer science and electrical engineering; industrial and management systems engineering; mechanical and aerospace engineering; mining engineering; and petroleum and natural gas engineering. All undergraduate programs are recognized by industry as providing excellent preparation for the engineering profession. The curricula are planned to give students a balanced background in the basic sciences, engineering sciences, engineering analysis, the humanities, and the social sciences. In addition, each curriculum features creative programs in engineering synthesis and design. This blend of science and practice gives students the tools to solve today’s problems and the background to develop the expertise needed for their future success in the profession. Our graduates enjoy a multitude of career opportunities in our nation’s most vital industries.

The college is committed to providing high-quality programs of engineering science education for all undergraduate students so that graduates of the college will:

- be proficient in their chosen field;
- develop and maintain professional ethics and understand the comprehensive impact of engineering solutions on a diverse and global society; and
- continue in their education on a life-long basis through both formal study and self-directed inquiry.

The faculty uses modern teaching techniques including programmed material, guest lectures by visiting authorities, team projects, and in-house industrial assignments to provide a breadth of training experiences. Teaching laboratories are equipped with modern instruments, machines, and tools to improve and enrich the student's understanding of engineering principles and problems. Numerous computer laboratories and facilities are available for classroom work.
College programs are geared to provide graduates with a sound background upon which to enter the industrial workforce or to pursue graduate study in engineering, medicine, law, or business. A number of industries in West Virginia and the region provide meaningful and financially rewarding summer employment for students. These training opportunities often lead to professional positions upon graduation.

Accreditation
The Accreditation Board for Engineering and Technology (ABET) is recognized by the U.S. Department of Education and the Council on Postsecondary Accreditation (COPA) as the sole agency responsible for accreditation of educational programs leading to degrees in engineering. ABET accomplishes its accreditation mission through one of its commissions, the Engineering Accreditation Commission (EAC). ABET is concerned with the enhancement of the status of the engineer and the engineering profession, and the establishment of criteria and standards for accreditation of engineering programs at colleges and universities. All baccalaureate engineering programs in the College of Engineering and Mineral Resources at WVU are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Admission Requirements
The College of Engineering and Mineral Resources will admit freshmen students to study under one of three distinct programs: engineering; general engineering or pre-computer science. Admission is based on a combination of high school grade point average (unweighted 4.0 scale) and standardized ACT/SAT test scores. The objective of having two engineering programs is to be able to provide a freshman curriculum suitably tailored to the level of academic preparation of the student. This maximizes the chance to complete a successful freshman experience. Each program provides students the coursework necessary to meet coursework requirements to move into their intended major.

Students interested in pursuing a degree in biometrics systems should apply to the engineering or general engineering program as appropriate for your high school GPA and ACT or SAT test scores.

The following table summarizes the admission requirements for each program.

<table>
<thead>
<tr>
<th>Program</th>
<th>Residents</th>
<th>High School GPA</th>
<th>ACT Composite</th>
<th>Math</th>
<th>SAT Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>West Virginia</td>
<td>3.0</td>
<td>24</td>
<td>27</td>
<td>620</td>
</tr>
<tr>
<td></td>
<td>Out-of-State</td>
<td>3.0</td>
<td>24</td>
<td>27</td>
<td>620</td>
</tr>
<tr>
<td>General</td>
<td>West Virginia</td>
<td>2.5</td>
<td>22</td>
<td>23</td>
<td>540</td>
</tr>
<tr>
<td>Engineering</td>
<td>Out-of-State</td>
<td>2.5</td>
<td>22</td>
<td>23</td>
<td>540</td>
</tr>
<tr>
<td>Pre-Computer</td>
<td>West Virginia</td>
<td>3.0</td>
<td>24</td>
<td>27</td>
<td>620</td>
</tr>
<tr>
<td>Science</td>
<td>Out-of-State</td>
<td>3.0</td>
<td>24</td>
<td>27</td>
<td>620</td>
</tr>
</tbody>
</table>

In addition, students must have high school credits for:

- Four units of English (including grammar, composition, and literature).
- Three units of social studies (including U.S. history).
- Three units of college preparatory mathematics (algebra I and II and geometry).
- Two units of laboratory sciences (including physics, chemistry, biology, or other laboratory courses).

First-Year Engineering Program Curriculum
The engineering program curriculum is designed for students who have similar math and science backgrounds so they can effectively work in teams, solve problems, and undertake challenging projects in the Freshman Engineering Design course (ENGR 101).
## Engineering Program

### First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Hrs.</th>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>MATH 155</td>
<td>Calculus I</td>
<td>4</td>
<td>Spring</td>
<td>MATH 156</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 115</td>
<td>Fundamentals of Chemistry</td>
<td>4</td>
<td></td>
<td>Chem 116</td>
<td>Fundamentals of Chemistry**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGR 101</td>
<td>Engr. Prob. Solving I</td>
<td>2</td>
<td></td>
<td>GEC Elective</td>
<td></td>
<td>3(3)</td>
</tr>
<tr>
<td></td>
<td>ENGR 199</td>
<td>Orientation to Engr.</td>
<td>1</td>
<td></td>
<td>ENGR 102</td>
<td>Engr. Prob. Solving II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGL 101 Comp. and Rhetoric</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>PHYS 111 General Physics</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>GEC Elective*</td>
<td></td>
<td>3</td>
<td></td>
<td>Total</td>
<td>17-18</td>
<td></td>
</tr>
</tbody>
</table>

* Students intending to pursue a mining engineering degree or dual civil and mining engineering degrees should take GEOL 101 and 102 in place of one GEC elective. Students pursuing dual mining engineering and geology degrees need to take GEOL 101, 102, 103, and 104 in place of both GEC electives. Students intending to pursue a petroleum and natural gas engineering degree should take GEOL 101 in place of one GEC elective.

** Students intending to pursue a chemical engineering degree or petroleum and natural gas engineering degree must take CHEM 116. Students intending to pursue a civil engineering or industrial engineering degree can take either PHYS 112 (taken in sophomore year) or CHEM 116, but do not need both. Students wishing to pursue an aerospace, computer, electrical, mechanical, dual aerospace and mechanical, or dual electrical and computer degrees do not need CHEM 116.

### First-Year General Engineering Program Curriculum

The general engineering program curriculum is tailored for those students who are not ready to take the calculus (MATH 155) course and the Fundamentals of Chemistry course (CHEM 115). Based on standardized test scores or the Math Placement exam scores, students will be placed in algebra and trigonometry courses, or a pre-calculus course and are advised to achieve a grade of C or better in each class to move into calculus (Math 155).

### General Engineering Program

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Hrs.</th>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>MATH 126 and 128</td>
<td></td>
<td>6</td>
<td>Spring</td>
<td>MATH 155</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENGR 100 Intro. to Engr. Apps</td>
<td></td>
<td>3</td>
<td></td>
<td>CHEM 115</td>
<td>Fundamentals of Chemistry**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGR 199 Orientation to Engr.</td>
<td></td>
<td>1</td>
<td></td>
<td>ENGR 101 Engr. Prob. Solving I</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGL 101 Comp. and Rhetoric</td>
<td></td>
<td>3</td>
<td></td>
<td>GEC Elective</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>GEC Elective*</td>
<td></td>
<td>3</td>
<td></td>
<td>Total</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Spring</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 156 Calculus II</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEM 116 Fundamentals of Chem.**</td>
<td></td>
<td>4(3)</td>
<td></td>
</tr>
<tr>
<td>or GEC elective</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GEC Elective*</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGR 102 Engr. Problem Solving II</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS 111 General Physics</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>17-18</td>
<td></td>
</tr>
</tbody>
</table>

* Students intending to pursue a mining engineering degree or dual civil and mining engineering degrees should take GEOL 101 and 102 in place of one GEC elective. Students pursuing dual mining engineering and geology degrees need to take GEOL 101, 102, 103, and 104 in place of both GEC electives. Students intending to pursue a petroleum and natural gas engineering degree should take GEOL 101 in place of one GEC elective.

** Students pursuing a mining engineering degree should take GEOL 101 and 102. Students pursuing a petroleum and natural gas engineering degree should take GEOL 101 in place of the GEC elective.
Admission to a Discipline Major

During the second semester of the engineering program, all freshman engineering students are encouraged to choose an engineering major. To be admitted into an engineering major, at a minimum a student must successfully complete MATH 155, with a grade of C or better, CHEM 115, ENGR 101, ENGR 199, ENGR 102, ENGL 101, and earn a cumulative GPA of at least 2.0. Each department will assign a faculty advisor to help these students achieve their academic goals. Students not accepted into an engineering major by the end of a prescribed time will be transferred out of the college. Students will not be permitted to enroll in upper-division engineering courses until they have been accepted into a major.

Early Advancement to Discipline Major

Freshman students having outstanding academic performance during their first semester may elect to move into their selected major at the end of the first semester and substitute a departmentally approved course for ENGR 102. Advancement can be based on the following prior credit and academic performance:

- Have seven credit hours or more of AP or prior college credit including at least four credit of MATH 155, CHEM 115–116, PHYS 111, or PHYS 112; and
- Pass all first semester MATH (≥155) and science courses (CHEM 115 or 116; PHYS 111 or 112; or GEOL 101, 102) plus ENGR 199 and ENGR 101 with a C or better, and
- Achieve an overall GPA ≥ 3.0.

Or advancement can be based on the following exceptional performance:

- Pass all first semester MATH (≥155) and science courses (CHEM 115 or 116; PHYS 111 or 112; or GEOL 101, 102) plus ENGR 199 and ENGR 101 with a C or better; and
- Achieve an overall GPA ≥ 3.5.

Transfer Students

Students wishing to transfer into the engineering or pre-computer science program from other programs must have a GPA of at least 2.0 in all college work attempted. Students who meet the freshman admission requirements to the engineering program (shown in the table) are eligible to transfer into the college at any time. Others must have completed at least one semester of college work and present evidence that they are eligible to enroll in MATH 155 Calculus. Students wishing to transfer into a major must have a GPA of at least 2.0 and have completed ENGR 101, ENGR 199, ENGR 102, MATH 155, with a grade of C or better, CHEM 115, and ENGL 101.

Admission Petitions

Students not meeting the minimum admission and transfer requirements as described above may request to be admitted to the college by written petition to the dean.

Scholarships

The College of Engineering and Mineral Resources and its constituent departments offer numerous competitive scholarships to undergraduate students of any rank. Typically scholarships are based both on academic performance and financial need and are awarded on a one year basis unless the scholarship award specifies otherwise. Scholarship awards are typically made in June for the upcoming academic year. Certain scholarships for freshman require the recipient to be pursuing a specific major. In these cases, the student must be taking freshman courses consistent with those required for entry into that specific major.

Curricula

During the first two years, students acquire fundamental knowledge in mathematics, basic sciences, and introductory engineering topics. Engineering design, computer-based experience, and communication skills are integrated throughout the curriculum. In the third and fourth years, the curriculum builds upon the fundamental engineering concepts toward an integrated educational experience, preparing students to pursue a successful professional career and life-long learning. Study in humanities and social sciences are also an
integral part of the engineering education, enabling students to understand and appreciate the technological, social, and cultural changes that challenge the world.

**Cooperative (Co-op) Education and Internship Programs**

The co-op program is available to any student attending a college or university in West Virginia. The co-op opportunity is available to any qualified student interested in pursuing a degree in any of nine engineering majors or computer science. The five-year professional development experience combines practical on-the-job experience with the classroom education of a four-year engineering curriculum. Internships are arranged with an employer for various work periods and may involve an academic semester or summer term.

**Dual Degree Majors**

The college has formal programs for students wishing to receive two undergraduate degrees simultaneously. Currently those programs are in:

- aerospace and mechanical engineering;
- biometrics and computer engineering or electrical engineering
- civil and mining engineering;
- electrical and computer engineering;
- computer engineering and biometrics;
- computer science and computer engineering;
- electrical engineering and biometrics; and
- mining engineering and geology.

Each dual-degree program requires at least one semester of additional work over and above that required for a single degree. Please refer to the actual curriculum of each dual program to determine the additional time requirement.

**Academic Minor**

The College of Engineering and Mineral Resources offers a minor in computer science to all undergraduate students. A student must consult with his or her major advisor to develop a scheduling plan for courses that satisfy the requirements for the computer science minor. The requirements for the minor in computer science can be found under the computer science program description. The completed minor will be recorded on the student’s permanent transcript.

**International Exchange Programs**

The college participates in two international exchange programs for undergraduates as well as the International Student Exchange Program (ISEP). These exchanges are with the University of Hertfordshire in England and the University of Aalborg in Denmark. Both of these universities have international reputations for the strength of their instruction in the area of engineering design. Program details vary, but WVU engineering students can obtain full credit for their junior year while studying abroad. Students pay normal WVU tuition, but housing costs to their host institution are not included. At present, the college has organized exchanges for students in civil, computer, electrical, industrial, mechanical engineering, and computer science.

**Undergraduate General Education Curriculum**

All engineering undergraduate students must satisfy the University General Education Curriculum (GEC) requirements. Students and advisors should consult the latest Schedule of Courses for the most current list of courses included in the GEC Program.

**Time to Completion of Degree**

All undergraduate degree programs in the college are structured so that they can be completed in eight semesters of full-time study. However, students who are not prepared to enter MATH 155 Calculus or CHEM 115 in their first semester may not be able to complete an engineering degree within eight semesters. Engineering applicants are strongly urged to take the required prerequisites to calculus and chemistry in the summer before entering WVU or plan on attending summer school after their freshman year in order to avoid delays in their graduation.
Degree Requirements
To be eligible to receive a bachelor’s degree, a student is required to complete satisfactorily the number of semester hours of work as specified in the curriculum of the program leading to the degree for which the student is a candidate. Students must achieve an overall 2.0 grade point average and a 2.0 grade point average (2.25 in mining engineering, and petroleum and natural gas engineering) in all courses completed within the student’s major department.

Probation and Suspension from the College
Students with a cumulative grade point average below 2.0, determined by either their overall University grade point average or their grade point average in their academic major, may be subject to probation. Students on probation may be subject to suspension if their cumulative grade point average remains below required University standards by either their overall University grade point average or their grade point average in their academic major. Students suspended from the college may be eligible to continue enrollment in other academic programs of the University

Department of Chemical Engineering
Dady B. Dadyburjor, Ph.D., Chair
403 Engineering Sciences Building
E-mail: dady.dadyburjor@mail.wvu.edu
http://www.che.cemr.wvu.edu

Degree Offered
Bachelor of Science in Chemical Engineering

Curriculum in Chemical Engineering
The chemical engineering curriculum is designed to give graduates a broad background in chemical engineering processes and to prepare them to become practicing engineers. Graduates are prepared for positions in operation, development, design, construction, and management of chemical, environmental, life-science, materials, and other industrial plants. These industries subject raw materials to chemical and physical changes to produce economically desirable products. Students with this background are also prepared for graduate school in engineering and science as well as for any professional school.

The program objectives of the chemical engineering curriculum are:

• Graduates will be successful in their professional careers, and/or post graduate training as demonstrated by their abilities to solve traditional chemical engineering problems, to solve problems in extended applications of chemical engineering (especially biological) as well as non-related fields, and to develop new and valuable ideas.

• Graduates will be able to work competitively in diverse professional environments, as demonstrated by their abilities to work on teams, to work independently, to provide leadership, to mentor junior coworkers, and to communicate effectively.

• Graduates will possess professional character, as exhibited by their ethical behavior, their pursuit of professional registration, their pursuit of life-long learning opportunities, their commitment to responsible safety practices, and their ability to articulate the environmental impact of their work.

The program outcomes of the chemical engineering curriculum are as follows:

• Graduates will understand and be able to analyze entire chemical processes, including those with life-science applications.

• Graduates will be proficient in the oral and written communication of their work and ideas.

• Graduates will be proficient in the use of computers, recent computer software, and computer-based information systems.

• Graduates will have the ability to learn independently but will also be able to participate effectively in groups.

• Graduates will be able to design effective laboratory experiments, to perform laboratory experiments, to gather data, to analyze data, and to test theories.
• Graduates will be prepared for a lifetime of continuing education.
• Graduates will understand the safety and environmental consequences of their work as chemical engineers and will be able to design safe processes.
• Graduates will understand their professional and ethical responsibilities.
• Graduates will have the broad education necessary to understand the impact of engineering solutions in a global and societal context.

These outcomes are achieved via rigorous individual courses in all basic areas of chemical engineering, the natural and life sciences, mathematics, humanities and social sciences. A flexible electives program allows specialization in areas such as environment and safety, polymers and materials, biological applications, and coal processes.

Practical work on process and product design and synthesis is incorporated into all chemical engineering classes. One element is the series of group design projects that require sophomores and juniors to use their knowledge as it is gained. Another element is the series of individual design projects that require seniors to synthesize their knowledge of chemical engineering and to correct any deficiencies in their knowledge of chemical engineering, and which provide faculty a method of assessing the success of the sophomore and junior years. The third element is a group project in which seniors work under the direction of a student chief engineer on a year-long, comprehensive design. In conjunction with these projects, there are required written and oral presentations and required computer applications integrated throughout the curriculum. Completion of these projects also trains students to work in groups of all sizes and gives them experience in self-directed learning. Additionally, in the senior year, elements of professional practice, ethics, and safety are introduced in the classroom.

The chemical engineering curriculum also contains a significant laboratory component aimed at reinforcing the knowledge gained in the classroom. In addition to basic chemistry and physics laboratories, the chemical engineering laboratories involve simple laboratory experiments or demonstrations in the junior year followed by a two-semester laboratory sequence in the senior year in which the principles of experimental design, laboratory and safety procedures, data analysis, and report writing are stressed.

The chemical engineering department uses an outcomes-assessment plan for continuous program improvement. The design projects, in conjunction with yearly interviews and surveys, plus follow-up surveys after graduation to alumni and employers, provide the measures of learning outcomes. These outcomes-assessment results provide feedback to the faculty to improve teaching and learning processes.

To receive a degree of bachelor of science in chemical engineering, a student must take all of the courses indicated below and must obtain a grade point average of 2.0 or better for all required chemical engineering courses. (If a course is repeated, only the most recent grade received is considered in computing this grade point average. Chemical engineering courses used to satisfy technical or engineering electives are not considered in this grade point average.) This requirement helps assure that the student has demonstrated overall competence in the chosen major. To complete the B.S. degree program in four years, a student must complete approximately 16.5 credit hours per semester.

A typical program which completes B.S. degree requirements in four years is as follows.

**Chemical Engineering**

*First year*
Common first year as listed on the middle of page 103.

**Second Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td>MATH 261 Elem. Differential Equat.</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 233 Organic Chem.</td>
<td>3</td>
<td>CHE 202 Matrl. &amp; Energy Bal. 2</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 235 Organic Chem. Lab.</td>
<td>1</td>
<td>CHE 230 Numerical Methods</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td>GEC Electives</td>
<td>6</td>
</tr>
<tr>
<td>CHE 201 Matrl. &amp; Energy Bal. 1</td>
<td>3</td>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
<tr>
<td>ENGL 102 Comp. &amp; Rhetoric</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Third Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 310 Proc. Fluid Mechanics</td>
<td>3</td>
<td>CHE 312 Separation Process</td>
<td>4</td>
</tr>
<tr>
<td>CHE 311 Proc. Heat Trans.</td>
<td>3</td>
<td>CHE 315 ChE Transport Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CHE 320 ChE Thermodynamics</td>
<td>3</td>
<td>CHE 325 Chem. React. Phenom.</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Science Elective</td>
<td>4</td>
<td>CHE 326 Chem. Reaction Phenom.</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>Engineering Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

## Fourth Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 435 Chem. Process Control</td>
<td>3</td>
<td>CHE 451 Unit Operations Lab. 2</td>
<td>2</td>
</tr>
<tr>
<td>CHE 450 Unit Operations Lab. 1</td>
<td>2</td>
<td>CHE 456 Chem. Process Design 2</td>
<td>3</td>
</tr>
<tr>
<td>CHE 455 Chem. Process Design 1</td>
<td>4</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>Advanced Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**Grand Total** | **133**

### Note:
Electives in junior and senior years must be selected to complete requirements of non-technical electives (21 hrs.), technical electives (six hrs.), engineering science electives (six hrs.), and advanced science electives (seven hrs.). All electives must be selected from a list approved by the Department of Chemical Engineering. A 2.0 grade-point average in required chemical engineering courses is necessary before a student can register for CHE 310, 311, 320, 435, 450, or 455.

## Biomedical Engineering Certificate offered in Chemical Engineering

The Department of Chemical Engineering administers a certificate program in biomedical engineering. The program is open to all students with appropriate prerequisites, which are: basic biology (BIOL 115), mathematics through MATH 261 (differential equations), CHEM 115 and CHEM 116 and a working knowledge of organic chemistry, specifically the naming conventions for, and a knowledge of charge distribution in, organic molecules. Currently, the certificate program consists of six courses listed below: four required core courses and two electives. As other courses are added in the biomedical engineering area, more choices of elective courses will be made available.

### Core Courses (must take all four)
- Human Physiology – BIOL 235 (3 hr.)
- Human Phys: Quantitative Laboratory – BIOL 236 (1 hr. - lab)
- Introduction to Biomedical Engineering – ChE 381 (3 hr.)
- Biomaterials – ChE 382 (3 hr.)

### Elective Courses (pick any 2)
- Applied Molecular Modeling in Biology – ChE 481 (3 hr.)
- Tissue Engineering – ChE 482 (3 hr.)

For chemical engineering undergraduates, the certificate program can be completed with the addition of five additional credit hours (138 hours total). In addition, chemical engineering students with the biomedical certificate will satisfy all the prerequisites for medical school.
Degree Offered
Bachelor of Science in Civil Engineering

Curriculum in Civil Engineering

Civil engineering historically encompassed all engineering endeavors not associated with military activities. Because of its origin and history, civil engineering still embraces a wide variety of technological areas. These include environmental engineering, hydro-technical engineering, geotechnical engineering, transportation engineering, and structural engineering.

Civil engineers work with problems that directly impact the health and economic vitality of people and communities. These problems include waste disposal, environmental pollution, transportation systems analysis and design, water resource development, and the design, construction, and rehabilitation of constructed facilities such as dams, bridges, buildings, and highways. Thus, the challenges and opportunities for a civil engineer lie in combining technical competence with a human concern for the applications of technology. To help students to understand their role in the community, to be effective in working with design teams involving other engineers and other professionals, and to be effective in written and spoken communications, the curriculum attempts to give a meaningful educational experience in the humanities, social studies, English, and economics.

The goal of the undergraduate curriculum in civil and environmental engineering is to prepare graduate civil engineers to meet the present and the future infrastructure and environmental needs of society. This requires an education based on scientific and engineering fundamentals as well as one that incorporates experience in engineering design using modern technology. Because the systems they design impact the public directly, civil engineers must be aware of the social and environmental consequences of their designs. Graduates must be prepared to work and communicate with other professionals in a variety of associations and organizations. Ethics and life-long learning are essential components in the education of civil engineers. During the course of study, civil engineering students are given a solid grounding in mathematics, physics, and chemistry. Added to this is extensive development of the fundamentals of materials science, environmental, soils, hydro-technical, structural, and transportation systems engineering. This broad base of knowledge is provided to insure that civil engineers are educated in all branches of the profession and to permit continuous learning throughout a professional lifetime. Throughout the program, each student works with an academic advisor in the selection of electives. Specialization in one or more of the branches of civil engineering is possible by selection of a sequence of technical electives during the junior and senior years.

Following are the program educational objectives for graduates:

- Have a strong understanding of basic engineering principles. This includes a sound knowledge of the fundamentals of mathematics, computing, basic science, engineering science, and economics.
- Have a strong understanding of the fundamental principles, scope, and techniques of the major areas of civil engineering.
- Have an appreciation for the relationship of the civil engineering profession to society, industry, government, and the environment, as well as for the basic concepts of professionalism and ethics.
- Have the ability to compete for positions in civil engineering, to achieve professional registration, and to engage in life-long learning.
- Have the ability to work productively in teams developing solutions to engineering problems employing creative thinking, analysis, design, evaluation, and communications.
• Have the ability to communicate at a professional level using oral and written prose and engineering graphics.

To be eligible for graduation in civil engineering, a student must attain a grade point average of 2.0 or better for all civil engineering courses attempted, except for those courses in which a grade of W or WU was received. If a course is repeated, only the last grade received is counted in computing the grade point average, and the course credit hours are counted only once. This requirement assures that the student has demonstrated overall competence in the chosen major.

Undergraduate Student Minimum Performance Policy

All civil and environmental engineering students matriculating at WVU, including transfer students and second-degree students, must complete each tracking course with a grade of C or better, with the exception that one D among them is permitted. Tracking courses are identified as: Math 155, 156, 251, and 261; Chemistry 115; Physics 111; and MAE 241, 242, and 243. Any tracking course transferred from outside of WVU must be a C or better.

All tracking courses must be completed collectively before taking any 300-level or higher civil engineering course. However, as an exception to the collective prerequisite requirement, environmental engineering (CE 347) and transportation engineering (CE 332) may be taken before completing all tracking courses.

Second-degree students may petition for a waiver to the collective prerequisite requirement for 300-level or higher civil engineering courses, but must meet individual course prerequisites. The petition must include a plan for completing the tracking courses and be approved by the student’s academic advisor and the department chairman. When a course is repeated, the last grade earned in that course will be used for determining compliance with this minimum performance policy.

A typical program which completes B.S. degree requirements in four years is as follows.

Civil and Environmental Engineering

First Year
Common first year as listed on the middle of page 103.

Second Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>MAE 243 Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 Calculus</td>
<td>4</td>
<td>MAE 242 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>CE 210 CAD</td>
<td>2</td>
<td>GEC Elective*</td>
<td></td>
</tr>
<tr>
<td>CE 201 Introduction to</td>
<td>1</td>
<td>MATH 261 Differential Equations</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 102 Comp. and Rhetoric</td>
<td>3</td>
<td>CE Core Class CE 332 or CE 347</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 112/CHEM 116/BIOL</td>
<td>4</td>
<td>Total</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 321 Fluid Mechanics</td>
<td>3</td>
<td>CE Core Class**</td>
<td>4</td>
</tr>
<tr>
<td>CE Core Class**</td>
<td>4</td>
<td>CE Core Class**</td>
<td>4</td>
</tr>
<tr>
<td>STAT 215 Statistics</td>
<td>3</td>
<td>CE 301 Eng. Professional Dev.</td>
<td>1</td>
</tr>
<tr>
<td>ECON 201 Prin. of Micro</td>
<td>3</td>
<td>GEC Elective*</td>
<td>3</td>
</tr>
<tr>
<td>IENG 377 Eng. Economics</td>
<td>3</td>
<td>CE Design Elective†</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>ENGL 305 Sci. and Tech. Writing</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Curriculum for a Dual Major in Civil and Mining Engineering

Students can simultaneously pursue B.S. degrees in civil engineering and mining engineering by completing additional courses. The dual degree program requires satisfactory completion of 161 credit hours. A suggested schedule for the dual curriculum in civil engineering and mining engineering is shown below.

A typical program which completes both B.S. degree requirements in five years is as follows.

#### Civil Engineering/Mining Engineering (Dual)

**First Year**

Common first year as listed on the *middle* of page 103.

**Second Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 201 <em>Introduction to CE</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 <em>Multivariate Calculus</em></td>
<td>4</td>
</tr>
<tr>
<td>MINE 201 <em>Mine Surveying</em></td>
<td>3</td>
</tr>
<tr>
<td>MINE 205 <em>Undergrad. Mining Syst.</em></td>
<td>3</td>
</tr>
<tr>
<td>MINE 261 <em>Engineering CAD</em></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 102 <em>Comp. and Rhetoric</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 242 <em>Dynamics</em></td>
<td>3</td>
</tr>
<tr>
<td>MATH 261 <em>Elem. Differential Equat.</em></td>
<td>4</td>
</tr>
<tr>
<td>MINE 206 <em>Surface Mining Systems</em></td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

**Third Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 342 <em>Structural Geology</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 243 <em>Mechanics of Materials</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 320 <em>Thermodynamics</em></td>
<td>3</td>
</tr>
<tr>
<td>STAT 215 <em>Statistics</em></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE Core*</td>
<td>4</td>
</tr>
<tr>
<td>MINE 331 <em>Mine Ventilation</em></td>
<td>3</td>
</tr>
<tr>
<td>MINE 427 <em>Coal Preparation</em></td>
<td>4</td>
</tr>
<tr>
<td>MINE 480 <em>Interdis. Team Project</em></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

**Fourth Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE Core*</td>
<td>4</td>
</tr>
<tr>
<td>MINE 306 <em>Mining Explor. &amp; Eval.</em></td>
<td>3</td>
</tr>
<tr>
<td>MINE 382 <em>Mine Power System</em></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE Seminar</td>
<td>1</td>
</tr>
<tr>
<td>CE Core*</td>
<td>4</td>
</tr>
<tr>
<td>MINE 322 <em>Hydrotechnical Eng.</em></td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>IENG 377 <em>Engineering Economy</em></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>
Fifth Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEC Elective</td>
<td>......</td>
<td>CE Technical Elective††</td>
<td>......</td>
</tr>
<tr>
<td>GEC: ECON 201</td>
<td>Prin. of Microec.</td>
<td>3</td>
<td>CE 479 Integrated Design</td>
</tr>
<tr>
<td>MINE 411 Rock Mech.</td>
<td>&amp; Grd Cont.</td>
<td>4</td>
<td>GEC Elective</td>
</tr>
<tr>
<td>MINE 471 Mine &amp; Safety Mgmt</td>
<td>......</td>
<td>3</td>
<td>GEC Elective</td>
</tr>
<tr>
<td>MINE 483 Mine Dsgn-Exploration</td>
<td>......</td>
<td>2</td>
<td>MINE 484 Mine Dsgn-Rpt. (W)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

Total Credit Hours for the dual major in civil and mining engineering program: 161

Notes:
1. Discipline substitutions are:
   a) MINE 306 fulfills requirement of CE engr/math/sci elective 1
   b) MINE 411 fulfills requirement of CE engr/math/sci elective 2
   c) MINE requirement for AGRN 455 is fulfilled through CE 322 and CE 351
   d) MINE 382 fulfills requirement of CE engineering elective outside CE
   e) MINE 461 is fulfilled by CE 322
   f) MINE 484W fulfills CE requirement of ENGL 305
   g) MINE requirement for STAT 211 is fulfilled by CE requirement of STAT 215
   h) CE 321 fulfills MINE requirement for MAE 331
   i) MINE technical elective and MINE eng/sci technical elective requirements are fulfilled by any two of the following; CE 332, 347, or 361.
   j) GEOL 342 fulfills requirement of CE basic science elective
   k) MINE 261 substitutes for CE 210

2. *CE Core Classes are: CE 332 Introduction to Transportation Engineering; CE 347 Environmental Engineering; CE 351 Introductory Soil Mechanics; CE 361 Structural Analysis I

† CE design electives – Any approved CE 400 level design course – see adviser for approved list

†† CE open electives – Any approved CE 300 or CE 400 level course – see advisor for approved list

3. For the most recent list of approved courses in the GEC program, visit the GEC site (http://www.arc.wvu.edu/coourses/gec.html) at WVU Admissions and Records.

Lane Department of Computer Science and Electrical Engineering
Brian Woerner, Ph.D., Chair, and Lane Professor
825 Engineering Sciences Building
E-mail: brian.woerner@mail.wvu.edu
http://www.lcsee.cemr.wvu.edu

Degrees Offered
- Bachelor of Science in Biometric Systems
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Science
- Bachelor of Science in Electrical Engineering

The department offers undergraduate degrees in computer science, computer engineering, and electrical engineering. It also houses the biometric systems major of the University-level bachelor of science in forensic identification.

Curriculum in Biometric Systems
Biometric systems are composed of complex hardware and software designed to measure a signature of the human body, compare the signature to a database, and render a decision for a given application based on the identification achieved from this matching process. Uses of biometric systems for positive personal identification are experiencing rapid growth in such areas as law enforcement, access control, banking, and a wide range of business and administrative systems. In an even broader application context, biometric systems are having a revolutionary impact on health care and the enhancement of the human computer interface including in vivo identification of specific human conditions via implantable devices and the automated administration of life-saving medical therapies.
The continued rapid advance of integrated sensor, signal/image processing, computer, and mass storage technology promises to extend these applications further into our daily lives with even the most inanimate objects able to identify, interact with, and assist their users.

Biometric systems for personal identification are based upon fundamental biometric features which are typically unique and time invariant, such as features derived from fingerprints, faces, irises, retinas, and voices. Biometrics for biomedical, human computer interface, and other applications may include these but will necessarily extend to a wide range of physiological signals which possess identifiable patterns that may change in time, albeit predictably. The spectrum of usable biometrics is defined by human physiology, the bioengineering implied by their measurement, and the application. As biometric system capabilities and applications evolve, biometrics will extend to any known measurement of the human body.

Biometric identification is a highly interdisciplinary field mixing traditional engineering with the forensic sciences. As a result, the engineering design and development of biometric systems requires knowledge of the biometric as well as the engineering disciplines. Designers work with the physics of the sensor to obtain measurements of the biometric defined by human physiology. Signal and image processing techniques are applied to the sensor signal to extract features usable for identification. Databases combined with artificial intelligence enable rapid storage, retrieval, and pattern matching while decision theory supports the mechanisms whereby systems can provide the needed identification results. Underlying the entire system is a foundation of statistics and mathematics which provides the language for implementing and evaluating biometric technology and systems.

Overview of the Major

The biometric systems major at WVU will provide students with a firm foundation in electrical and computer engineering and computer science meshed with an understanding of biology, physiology, forensics, and the interaction between living and nonliving materials and systems necessary to design, implement, and evaluate biometric systems. This foundation is built on a strong framework of mathematics, statistics, and physical sciences appropriate to biometric systems and complemented by an appropriate general studies component. Areas of emphasis established through choice of specific course sets in the junior and senior year enable students to tailor their degree to follow their interests in key areas of biometric system development. Emphasis areas currently include sensors and circuits, signal processing, statistics, and software systems. Engineering design experiences will be a central part of many of the curriculum’s courses beginning in the very first semester of the major and concluding with a capstone design course in the senior year. This enables the students to integrate their understanding through application of their core and emphasis area coursework knowledge to realize biometric systems and subsystems of their own design.

Areas of Emphasis

Presently, four specialization paths have been identified for the biometric systems curriculum. Each emphasis area enables students to develop an in-depth technical background in an area of their own choosing which is central to biometric system development. Currently designated areas of emphasis are sensors and circuits, signal processing, statistics, and software systems. Each emphasis area is fulfilled by the successful completion of three courses. Students may obtain at most one emphasis area designation from this four-course set in their degree curriculum. Each emphasis area curriculum is defined by three courses chosen from a set of classes prescribed for that area. At least one of these three courses is a required course. Successful completion of an emphasis area’s requirements is designated on the student’s transcript. Students may elect not to choose an emphasis area in which case no transcript designation is received and students complete three courses from the collective list of classes from all emphasis areas.

Dual Majors

Dual majors are available in which a student may obtain a B.S. in biometric systems and a B.S. in either computer engineering or electrical engineering in four and one-half years.
Curriculum

The required curriculum of the bachelor of science degree in biometric systems is given below in the form of a recommended four-year sequence. The total credit hours required of the major is 133. Four courses (or 12 credits) are devoted to the emphasis areas selected by individual students based upon their educational objectives. Six of the credit hours required to satisfy the University GEC requirements have been devoted to economics in order that students may develop an understanding of system engineering economics.

A typical program which completes B.S. degree requirements in four years is as follows.

First Year
Fall Semester Hrs. Spring Semester Hrs.
BIOL 115 Intro. to Biology* ..................4 CHEM 115 Fund. of Chemistry........4
MATH 155 Calculus I..................4 MATH 156 Calculus II.................4
ENGR 101 Fresh. Design. Engr........2 CS 110 Intro. to Comp. Science......4
ENGR 199 Orientation to Engr........1 PHYS 111 General Physics...........4
ENGL 101 Comp. and Rhetoric........3 BIOL 493 DNA to Diversity*.........3
GEC Elective..........................3 Total............................................19

Total ..................................17

Second Year
Fall Semester Hrs. Spring Semester Hrs.
CS 111 Intro. to Data Structures........4 ENGL 102 Comp. and Rhetoric.....3
EE 221/222 Intro. Elec. Eng............4 EE 223/224 Circuits*..................4
MATH 251 Multivariable Calculus....4 MATH 261 Elem. Differential Equat..4
PHYS 112 General Physics...........4 STAT 215 Prob. and Statistics.......3
CPE 271/272 Intro. Digital Log.......4 Total............................................18

Total ..................................16

Third Year
Fall Semester Hrs. Spring Semester Hrs.
CPE 310/311 Microproc. Systems ....4 EE 465 Image Processing*..........3
STAT 316 Forensic Statistics*.........3 MATH 375 Applied Mod Algebra.....3
EE 327 Signals & Systems 1* ..........3 Assigned GEC Elective*..............3
BIOM 426 Biometric Systems........3 Emphasis Course 1.....................3
CS 350 Computer Syst. Concepts....3 Emphasis Course 2.....................3
Total ..................................16

Total ..................................15

Fourth Year
Fall Semester Hrs. Spring Semester Hrs.
BIOM 480 Senior Design Seminar....2 BIOM 481 Senior Design Project....3
EE 425 Bioengineering*...............3 Emphasis Course 3....................3
CS 465 Computer Security*...........3 ECON 202 Macroeconomics.........3
ECON 201 Microeconomics...........3 GEC Elective..........................6
GEC Elective..........................3 Total.........................................15
Free Elective..........................3
Total ..................................17

Grand Total ..................................133

*Offered once per year in the semester shown.
**One from the following list: POLS 210, PSYC 101, SOCA 101, or SOCA 232.
 May be deferred

Curriculum in Computer Engineering

Computer engineers design, develop, test, and oversee the manufacture and maintenance of embedded computer hardware and software. As such, the computer engineer is part electrical engineer and part computer scientist. Embedded computer systems include applications in the automotive, communications, radio and television, consumer electronics, aircraft, robotics, and health-care industries. In addition, computer engineers design,
develop, test, manufacture, and maintain complex systems including digital communications systems such as cell phone networks, computer networks such as the Internet, and system-level software such as operating systems and applications software.

The objective of the bachelor's degree program in computer engineering is to produce graduates who have the knowledge, skills, and attitudes that will ensure success in professional positions in business, industry, research, government service, or graduate study as well as professional schools. We carry out this mission by providing our students with a sound education in mathematics and the sciences, a broad foundation in the fundamentals of engineering, elective opportunities to develop expertise in one or more emphasis areas, and the general education necessary to put technical knowledge into perspective. Theoretical work is complemented by an emphasis on the practice of engineering, and design activity is integrated throughout the curriculum. The computer engineering program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

It is our goal that by the time they graduate, B.S. computer engineering students will achieve the following learning outcomes:

• Have the ability to apply knowledge of math, engineering, and science.
• Have the ability to design and conduct experiments on both hardware and software.
• Have the ability to analyze and interpret data.
• Have the ability to design a system, component, or process to meet desired needs, including the planning, specification, detail design, implementation, and evaluation to meet most of the following needs: cost, environmental, performance, safety, and quality requirements.
• Have the ability to function on multi-disciplinary teams.
• Have the ability to identify, formulate, and solve a range of computer engineering problems.
• Have an understanding of professional and ethical responsibility.
• Have the ability to communicate effectively, i.e., to convey technical material through formal written papers/reports which satisfy accepted standards for writing style, and to convey technical material through oral presentation and interaction with an audience.
• Have the broad education necessary to understand the impact of engineering solutions in a global and societal context.
• Have a recognition of the need for, and an ability to engage in life-long learning.
• Have knowledge of contemporary issues.
• Have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice (including computer-based tools, for analysis and design).
• Have knowledge of the breadth and depth across the range of computer engineering topics.
• Have knowledge of mathematics through differential and integral calculus, basic sciences, computer science, and engineering sciences necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components.
• Have knowledge of probability and statistics.
• Have knowledge of discrete mathematics.

Fundamental courses in the computer engineering areas of hardware and software are taken during the second year with general fundamental engineering courses included. The third and fourth years in the curriculum concentrate on areas of computer engineering in both software and hardware, with technical electives provided to allow the student to acquire more depth in a preferred area of expertise.

The computer engineering technical electives must be taken from 400-level CPE regular courses. The other technical electives should be selected from 400-level regular courses in electrical engineering, computer engineering, or computer science. However, students with special career objectives can petition the department through their advisors for prior written permission to select technical electives from upper-division courses in mathematics, the sciences, or other areas of engineering.

To be eligible for graduation in computer engineering a student must attain a grade point average of 2.0 or better for all required computer engineering, electrical engineering,
and computer science courses. If a required CPE, EE, or CS course is repeated, only the hours credited and the grade received for the last completion of the course are used in computing the grade point average. It is important for students to take courses in the order specified as much as possible; all pre- and co-requisites must be observed.

A total of five humanities and social science electives (GEC electives) must be selected. The humanities and social science electives must be chosen so as to meet the University General Education Curriculum requirements and Accreditation Board for Engineering and Technology accreditation guidelines.

To complete the B.S. degree program in four years, a student must take approximately 17 credit hours per semester.

A typical program which completes B.S. degree requirements in four years is as follows.

First Year
Common first year as listed on the middle of page 103.

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 221 Intro. to EE Lec.</td>
<td>3</td>
<td>EE 223 Electrical Circuits Lec.*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EE 222 Intro. to EE Lab</td>
<td>1</td>
<td>EE 224 Electrical Circuits Lab*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CPE 271 Int. Dig. Logic Dsgn. Lec.</td>
<td>3</td>
<td>EE 251 Digital Elect. Lec.*</td>
<td>3</td>
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<tr>
<td>CPE 272 Digital Logic Lab</td>
<td>1</td>
<td>EE 252 Digital Elect. Lab*</td>
<td>1</td>
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<tr>
<td>MATH 251 Multivar. Calculus</td>
<td>4</td>
<td>MATH 261 Elem. Diff. Equat.</td>
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<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td>ENGL 102 Comp. and Rhetoric</td>
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<tr>
<td>CS 110 Intro. to Computer Sci.</td>
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Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 327 Signals &amp; Syst. 1 Lec.*</td>
<td>3</td>
<td>CS 350 Comp. Sys Concepts</td>
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<tr>
<td>MATH 375 Applied Modern Algebra</td>
<td>3</td>
<td>CPE 312 Mcrcmpl Strc/Intrfng.*</td>
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<tr>
<td>CPE 310 Micropr. Sys. Lec.</td>
<td>3</td>
<td>CPE 313 Mcrcmp Strc/Int Lab*</td>
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<tr>
<td>CPE 311 Microprocessor Lab</td>
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<td>STAT 215 Intro. Prob. &amp; Stat.</td>
<td>3</td>
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<tr>
<td>EE 355 Analog Elec. Lec.*</td>
<td>3</td>
<td>CS 230 Intro. Software Engr.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EE 356 Analog Elec. Lab.*</td>
<td>1</td>
<td>ECON 201 Microeconomics</td>
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<tr>
<td>CS 111 Intro. Data Structures</td>
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Fourth Year

<table>
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<tr>
<th>Course</th>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>ECON 202 Macroeconomics</td>
<td>3</td>
<td>CPE 481 Senior Design Project</td>
<td>3</td>
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<tr>
<td>GEC Elective</td>
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<td>Engr. Science Elect.</td>
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<tr>
<td>Tech. Elective</td>
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<td>CPE Tech. Elect.</td>
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<tr>
<td>CPE 480 Senior Dsgn Seminar</td>
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<td>GEC Elective</td>
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<td>CS 450 Oper. Syst. Struct.</td>
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<td>133</td>
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</table>

*Offered once per year in the summer shown.

Curriculum in Computer Science

Computer science is a discipline that involves the understanding and design of computational processes. The discipline ranges from a theoretical study of algorithms and information processing in general, to a practical design of efficient and reliable software that meets given specifications. This differs from most physical sciences, engineering included, that separate theoretical underpinnings of the science from applications within it.

Partly because of the broad nature of computer science, and partly because students need flexibility in choosing a plan that best fits their needs, the department offers two tracks in the B.S. degree program: one track is with the College of Engineering and Mineral Resources (CEMR), and one track is with the Eberly College or Arts and Science (ECAS).
The B.S.C.S. track through CEMR introduces students to engineering principles through Engineering 101/199 and required courses in computer engineering. Chemistry and a two-semester sequence in physics is also required, but the student gains flexibility in choosing senior-level computer science (CS) courses, which leaves open the opportunity to explore much of software engineering or other areas. This option is well-suited for freshman engineering students who meet pre-computer science entrance requirements, and for engineering students who want to double major in computer science and computer engineering.

The B.S.C.S. track through ECAS offers flexibility in choosing more of a liberal education that could include courses, even dual majors, offered in many colleges: Eberly College of Arts and Sciences, Business and Economics, Creative Arts, or any others for which course prerequisites are satisfied. The required two-semester sequence in science can be fulfilled through a variety of science disciplines, but a few requirements on selection of senior level CS courses lean to the theoretical side of the discipline. This track is best suited for students who want a more liberal education with the opportunity to pursue minors or double majors outside of engineering.

A typical program which completes B.S. degree requirements in four years is as follows.

CEMR Track for B.S.C.S.

First Year

Fall Semester       Hrs.       Spring Semester       Hrs.
CS 110 Intro. Computer Science* .............. 4       CS 111 Intro. Data Structures* .............. 4
MATH 155 Calculus I* ......................... 4       MATH 156 Calculus II* ......................... 4
CHEM 115 Fundamentals Chem.* ................ 4       PHYS 111 ....................................... 4
ENGL 101 Comp. and Rhetoric ................... 3       GEC Elective ..................................... 3
ENGR 101 Fresh. Engr. Design .................. 2       GEC Elective ..................................... 3
ENGR 199 Orientation to Engr. ................. 1       Total ............................................. 18
Total ............................................. 18

Second Year

Fall Semester       Hrs.       Spring Semester       Hrs.
CPE 271 Dig Logic Design* ..................... 3       CPE 310/311 Microprocessor Sys* ........... 3
CPE 272 Dig. Logic Design Lab* ................ 1       CPE 311 Micropro. Sys. Lab* ................. 1
PHYS 112 Gen. Physics* .......................... 4       ENGL 102 Comp. and Rhetoric ................. 3
CS 220 Discrete Mathematics* ................ 3       CS 230 Intro. Software Engr. ................. 4
MATH 251 Multivariable Calculus* .......... 4       Total ............................................. 18
Total ............................................. 18

Third Year

Fall Semester       Hrs.       Spring Semester       Hrs.
CS 310 Prin. Program Language* ........... 3       CS 4XX Technical Elective* ................ 3
CS 350 Comp. Sys. Concepts* ................. 3       CS 4XX Technical Elective* ................ 3
STAT 215 Intro. Prob. & Stat* ............... 3       Discipline Elective 1 ........................ 3
GEC Elective ..................................... 3       GEC Elective ..................................... 3
GEC Elective ..................................... 3       Total ............................................. 15
Total ............................................. 15

Fourth Year

Fall Semester       Hrs.       Spring Semester       Hrs.
CS 480 Sr. Design Project* .................. 2       CS 481 Sr. Design Project* ................ 3
CS 4XX Technical Elective* .................. 3       CS 4XX Technical Elective* ................ 3
Discipline Elective 2 .......................... 3       2XX level or above Elective .................. 3
GEC Elective ..................................... 3       2XX level or above Elective .................. 3
Extra GEC Elective .............................. 3       2XX level or above Elective .................. 3
Total ............................................. 14
Grand Total ..................................... 15

Grand Total ..................................... 128

*Course must be completed with a grade of C or better.
### ECAS Track for B.S.C.S.

#### First Year

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<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>CS 110 Intro. Computer Science*</td>
<td>4</td>
<td>CS 111 Intro. Data Structures*</td>
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</tr>
<tr>
<td>MATH 155 Calculus I*</td>
<td>4</td>
<td>MATH 156 Calculus II*</td>
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<tr>
<td>UNIV 101 Orientation</td>
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<td>ENGL 101 Comp. &amp; Rhetoric*</td>
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<td>GEC Elective</td>
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<td>GEC Elective</td>
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#### Second Year

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<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>CS 220 Discrete Mathematics*</td>
<td>3</td>
<td>CPE 272 Digital Logic Design Lab*</td>
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<tr>
<td>ENGL 102 Comp. &amp; Rhetoric II</td>
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<td>CS 221 Analysis of Algorithms*</td>
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<tr>
<td>Laboratory Science, sequence 1</td>
<td>4</td>
<td>CS 230 Intro. Software Engr.*</td>
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<tr>
<td>MATH 251 Multivariable Calculus*</td>
<td>4</td>
<td>GEC Elective</td>
<td>3</td>
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<tr>
<td><strong>Laboratory Science, sequence 2</strong></td>
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<td><strong>Total</strong></td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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#### Third Year

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<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310 Prin. Program Language*</td>
<td>3</td>
<td>CS 4xx Tech. Elect., syst. group*</td>
<td>3</td>
</tr>
<tr>
<td>CS 350 Comp. Sys. Concepts*</td>
<td>3</td>
<td>CS 4xx Technical Elective*</td>
<td>3</td>
</tr>
<tr>
<td>STAT 215 Intro. Probability &amp; Stat.*</td>
<td>3</td>
<td>Laboratory Science, sequence 3</td>
<td>4</td>
</tr>
<tr>
<td>CS 4xx Tech. Elect., theory group*</td>
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<td>GEC Elective</td>
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<tr>
<td>GEC Elective</td>
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<td><strong>2xx level or above Elective</strong></td>
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<td><strong>Total</strong></td>
<td>16</td>
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#### Fourth Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 480 Sr. Design Project (W)*</td>
<td>2</td>
<td>CS 481Sr. Design Project*</td>
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<tr>
<td>CS 4xx Technical Elective*</td>
<td>3</td>
<td>Discipline Elective 2</td>
<td>3</td>
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<tr>
<td>CS 4xx Tech. Elective</td>
<td>3</td>
<td>Discipline Elective 3</td>
<td>3</td>
</tr>
<tr>
<td>(or approved equivalent)*</td>
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<td><strong>2xx level or above Elective</strong></td>
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<tr>
<td>Discipline Elective</td>
<td>3</td>
<td>Extra GEC Elective</td>
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</tr>
<tr>
<td><strong>2xx level or above Elective</strong></td>
<td>3</td>
<td><strong>Total</strong></td>
<td>15</td>
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<tr>
<td><strong>Total</strong></td>
<td>14</td>
<td><strong>Grand Total</strong></td>
<td>128</td>
</tr>
</tbody>
</table>

*Course must be completed with a grade of C or better.

### Transfer Students

Students wishing to transfer into pre-computer science or computer science must satisfy admission requirements and must petition the Lane Department of Computer Science and Electrical Engineering for admission. If petitioning:

- In person, come to the department’s office and ask for the undergraduate coordinator. Bring a transcript of all college-level coursework attempted.
- By mail, be sure to include a transcript of all college-level coursework attempted and an indication of when the transfer is desired. On the envelope in the lower-left corner write: Transfer petition for UG CS. Mail to Lane Department of Computer Science and Electrical Engineering, WVU, P.O. Box 6109, Morgantown, WV 26506-6109.
- Transfer students are expected to meet the following requirements:
  - A grade point average of at least 3.0 in all college-level work attempted.
  - A grade of C or better in any transfer course that will count as pre-CS or CS.

The number of transfer students accepted is governed by the enrollment capacities of each of the degree tracks. First admission priority is given to those students currently matriculated at WVU; second priority, to students enrolled in computer science curricula at external colleges and universities; third priority, to students enrolled in other degree programs at WVU; and fourth priority, to students enrolled in other degree programs at other institutions.
programs at external colleges and universities. Within the last two priorities, preferential admission is in the following order: West Virginia residents, U.S. citizens or permanent residents, and international students.

**Minor in Computer Science**

Any student may complete a minor in computer science by taking the following courses and making a C or better. The symbol “/” means sequence courses:

- CS 110 / 111.
- Pick one from: CS 210, CS 220, or CS 230.
- CS 310 and 350.
- At least one CS 400-level course.

**Curriculum in Electrical Engineering**

Electrical engineers design, develop, test, and oversee the manufacture and maintenance of equipment that uses electricity. Electrical equipment includes power generating and transmission equipment, motors, machinery controls, instrumentation in cars and aircraft, robots, computers, communications equipment, and health-care equipment.

The objective of the bachelor’s degree program in electrical engineering (EE) is to produce graduates who have the knowledge, skills, and attitudes that will ensure success in professional positions in business, industry, research, government service, or graduate study as well as professional schools.

We carry out this objective by providing our students with a sound education in mathematics and the sciences, a broad foundation in the fundamentals of engineering, elective opportunities to develop expertise in one or more emphasis areas, and the general education necessary to put technical knowledge into perspective. Theoretical work is complemented by an emphasis on the practice of engineering, and design activity is integrated throughout the curriculum. The electrical engineering program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

We expect that all students in the B.S.E.E. program at WVU will have achieved the following outcomes by the time they graduate:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct engineering and scientific experiments.
- An ability to analyze and interpret engineering and scientific data.
- An ability to design, including the planning, specification, detail design, implementation, and evaluation of components, processes, or systems to meet performance, cost, safety, and quality requirements.
- An ability to function on multi-disciplinary teams.
- An ability to identify, formulate, and solve a range of electrical engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to convey technical material through formal written papers/reports which satisfy accepted standards for writing style.
- An ability to convey technical materials through oral presentations and interactions with an audience.
- Knowledge of the wisdom represented by the humanities and fine arts.
- A recognition of the need for, and an ability to engage in, life-long learning.
- Knowledge of contemporary social issues necessary to understand the impact of electrical/computer engineering solutions in a global and societal context.
- An ability to use modern engineering techniques and tools, including computer-based tools, for analysis and design.
- Knowledge of electrical engineering fundamental concepts, with advanced knowledge in at least one sub-discipline of electrical engineering.
- Knowledge of mathematics through differential and integral calculus, basic sciences, and engineering sciences necessary to design complex electrical and electronic devices and systems containing hardware and software components.
- Knowledge of probability and statistics, including electrical engineering applications.
- Knowledge of differential equations and other advanced mathematics such as linear algebra, complex variables, or discrete mathematics.
In the first two years of electrical engineering, coursework is limited to those subjects which are essential as preparatory courses for more technical courses in the third and fourth years. Fundamental courses in electrical engineering are introduced in the second year. In the third and fourth years, the curriculum provides advanced instruction through required courses and electives. These electives are included in the curriculum to allow the student to acquire additional depth in the student's selected field of electrical engineering. Five technical electives are required for a total of 15 credits. At least three must come from one of the electrical engineering emphasis areas. Two additional technical electives may be selected from upper-division engineering, science, or math areas. However, a student with special career objectives may petition the Lane Department through his/her advisor for prior written permission to select one upper division course meeting those objectives.

The mathematics/science elective and engineering science elective are selected from department-approved lists. Students should consult with their advisors to select a course from this list. To be eligible for graduation in electrical engineering a student must attain a grade point average of 2.0 or better for all required electrical engineering courses. If a required EE course is repeated, only the hours credited and the grade received for the last completion of the course is used in computing the grade point average. It is important for students to take courses in the order specified as much as possible; all pre- and co-requisites must be observed.

A total of five humanities and social science electives (GEC electives) must be selected. The humanities and social science electives must be chosen so as to meet University General Education Curriculum requirements and Accreditation Board for Engineering and Technology accreditation guidelines. To complete the B.S. degree program in four years, a student must take approximately 17 credit hours per semester.

A typical program which completes B.S. degree requirements in four years is as follows.

First Year
Common first year as listed on the middle of page 103.

Second Year
Fall Semester Hrs. Spring Semester Hrs.
EE 221 Intro. to EE Lec.* ............3 EE 223 Electrical Circuits Lec.* ........3
EE 222 intro. to EE Lab* ............1 EE 224 Electrical Circuits Lab* ..........1
CPE 271 Intro. Dig. Log. Design ......3 MATH 261 Elem. Differential Equat.. .....4
CPE 272 Dig. Log. Lab...................1 CS 110 Intro. to Computer Science.. ....4
MATH 251 Multivariable Calculus.....4 ENGL 102 Comp. & Rhetoric..........3
PHYS 112 General Physics............4 EE 251 Digital Elect.* .................3
EE 252 Digital Elect. Lab* ..........1

Total ........................................16 Total ........................................19

Third Year
Fall Semester Hrs. Spring Semester Hrs.
EE 335 Elec. Enrgy Conv. & Sys.* ....3 EE 329 Signals and Systems 2* .......3
EE 336 Elec. Enrgy Conv. Lab*........1 EE 328 Signals and Systems Lab* ....1
EE 345 Engr. Electromagnetics* ......3 CPE 310 Microprocessors Sys..........3
EE 327 Signals & Systems 1* ...........3 CPE 311 Microprocessors Lab*......1
EE 355 Analog Elec.* ..................3 Engr. Science Elective..................3
EE 356 Analog Elec. Lab* ..........1 ECON 201 Microeconomics................3

Total ........................................17 Total ........................................17
## Fourth Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>ECON 202 Macroeconomics</td>
<td>3</td>
<td>EE 481 Senior Design Project</td>
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<tr>
<td>Technical Elective</td>
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<td>GEC Elective</td>
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<tr>
<td>Technical Elective</td>
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<td>Free Elective</td>
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<tr>
<td>EE 480 Senior Design Seminar</td>
<td>2</td>
<td>Technical Elective</td>
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<tr>
<td>GEC Elective</td>
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<td><strong>Total</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

*Offered once per year in semester shown

## Curriculum for a Dual Major in Electrical and Computer Engineering

Students can simultaneously pursue B.S. degrees in two majors within the department by completing a small number of additional classes. The student must satisfactorily complete at least 159 credits and meet all the requirements for both degrees.

A typical program which completes both B.S. degree requirements in five years is as follows.

### Electrical/Computer Engineering (Dual Major)

#### First Year
Common first year as listed on the middle of page 103.

#### Second Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>EE 221 Intro. to EE Lec.</td>
<td>3</td>
<td>EE 223 Electrical Circuits Lec.</td>
<td>3</td>
</tr>
<tr>
<td>EE 222 Intro. to EE Lab</td>
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<td>EE 224 Electrical Circuits Lab</td>
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<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td>ENGL 102 Comp. &amp; Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>CPE 271 Intro. Dig. Log Design</td>
<td>3</td>
<td>EE 252 Digital Elect. Lab</td>
<td>1</td>
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<tr>
<td>CPE 272 Dig. Log Lab</td>
<td>1</td>
<td>EE 251 Digital Elect.</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td>MATH 261 Elem. Differential Equat</td>
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<tr>
<td>Free Elective***</td>
<td>3</td>
<td>CS 110 Intro. Comp Science**</td>
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<td><strong>Total</strong></td>
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<td>19</td>
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#### Third Year

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<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>EE 327 Signals &amp; Systems 1*</td>
<td>3</td>
<td>CPE 312 Micro. Struc. &amp; Interface</td>
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<tr>
<td>CPE 310 Microprocessor Sys.</td>
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<td>CPE 313 Micro. Struc. &amp; Inter. Lab</td>
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<tr>
<td>CPE 311 Microprocessor Lab</td>
<td>1</td>
<td>CS 350 Computer Sys. Concepts</td>
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<tr>
<td>MATH 375 Applied Mod Algebra</td>
<td>3</td>
<td>CS 230 Intro. Software Engr.</td>
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</tr>
<tr>
<td>CS 111 Intro. Data Structures**</td>
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<td>EE 328 Signals &amp; Systems Lab</td>
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<tr>
<td><strong>Total</strong></td>
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<td>ECON 201 Microeconomics</td>
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#### Fourth Year

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<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>EE 355 Analog Elect. Lec.*</td>
<td>3</td>
<td>CPE 480 Senior Design Seminar</td>
<td>2</td>
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<tr>
<td>EE 356 Analog Elect. Lab*</td>
<td>1</td>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>EE 335 Elect. Energ Conv. &amp; Sys.*</td>
<td>3</td>
<td>Engr. Science Elective</td>
<td>3</td>
</tr>
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<td>EE 336 Elect. Energ Conv. Lab*</td>
<td>1</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>EE 345 Engr. Electromagnetics*</td>
<td>3</td>
<td>ECON 202 Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>CS 450 Operating Sys. Structures</td>
<td>3</td>
<td>Technical Elective</td>
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<td>CPE Technical Elective</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>
**Fifth Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CPE 481 Senior Design Project</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Free Elective**</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Free Elective**</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>159</td>
</tr>
</tbody>
</table>

*Only taught once per year, in the semester shown.*

** Students may wish to schedule CS 110 and CS 111 in the first year and move the GEC electives to the later years.

*** Nine hours of any University scheduled course(s).

**Technical Electives**

Five technical electives are required. At least three must come from one of the electrical engineering emphasis areas other than computers. One additional technical elective must be a 400-level computer engineering course, and one technical elective may be selected from upper-division engineering, science, or math areas. However, a student with special career objectives can petition the department through his or her advisor for prior written permission to select one upper-division course meeting his or her career objectives.

**Department of Industrial and Management Systems Engineering**

Wafik Iskander, Ph.D., P.E., Chair
321 Mineral and Energy Resources Building
E-mail: wafik.iskander@mail.wvu.edu
http://www.imse.cemr.wvu.edu

**Degree Offered**

*Bachelor of Science in Industrial Engineering*

**Industrial Engineering**

Industrial engineering is the discipline of engineering concerned with the design, improvement, and installation of integrated systems of people, material, information, equipment, and energy to assure performance, reliability, maintainability, schedule adherence, and cost control. Industrial engineers look at the “big picture” of an operation or system and bridge the gap between management and operations. They deal with and motivate people as well as determine what tools should be used and how they should be used. Industrial engineers use computers and sophisticated software as tools to solve complicated problems to design, quantify, predict, and evaluate the performance of all types of complex technologies and systems.

The mission of the industrial engineering program at WVU is to advance the industrial engineering profession through innovative and high-quality academic programs, relevant research, and professional services that address the needs of West Virginia, the nation, and the world. The industrial and management system engineers at WVU are taught to draw upon specialized knowledge and skills in the mathematical, physical, and social sciences, together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the results to be obtained from such systems. They are introduced to state-of-the-art software in their coursework for data analysis, information management, scheduling, quality control, optimization, and other practices and procedures used by the industrial engineering profession in highly evolving industries of the early 21st century.
The discipline of industrial engineering has a rich, ever-increasing diversity of applications. Traditionally, industrial engineers have been employed by manufacturing companies to do facilities and plant design, plant management, quality control, ergonomics, and production engineering. Today, however, industrial engineers are employed in almost any type of industry, business, or institution. Because of their skills, industrial engineers are more widely distributed and in greater demand among more industries than any other engineering discipline.

As an industrial engineer educated at WVU you can expect to have employment opportunities in manufacturing companies, insurance companies, banks, hospitals, technical sales, pharmaceutical companies, retail organizations including e-business, airlines, government agencies, consulting firms, construction, transportation, public utilities, social service, electronics, digital and wireless communications, etc. The diverse orientation of industrial engineering coupled with the skills and training you receive at WVU make you a prime source of management talent that offers unique professional advancement opportunities.

The industrial engineering program at WVU devotes considerable attention to the individual needs of the student. It is committed to develop student strengths in technical abilities, personal development, problem solving, and practical experience preparing them for careers in industry, business, government, or advanced professional degrees. One of the defining attributes in the success of the department is the dedication and talent of its faculty and staff. The aggregate careers of our faculty and staff represent nearly 300 years of service to students at WVU. In these 300 years of service are embodied the wisdom and experience to successfully prepare industrial engineers for the 21st century.

The faculty works extensively with our 200 sophomore, junior, and senior students in such areas as communication skills, personal growth and development, creation of summer internship opportunities, senior capstone project experience, and permanent job opportunities. As faculty and staff we are committed to provide for our students:

- A friendly, open-door collegial environment.
- Personable faculty mentoring students.
- Teaching concepts and techniques for today’s demands.
- Quality courses that are innovative and challenging.
- Placement in the jobs they want.
- Notable lifelong successes.

As a graduate of the industrial engineering baccalaureate program at WVU, you will be prepared to:

- Practice industrial engineering and initiate and develop leadership roles in business, industry, and/or government.
- Continue professional development and life-long learning and contribute to the advancement of the industrial engineering profession.
- Interact in society and business in a professional, ethical manner and embrace diversity.
- Be proficient in written and oral communication and utilize people-oriented skills in individual and team environments.
- Apply the skills from industrial engineering to be proficient in your chosen field or graduate studies.

To be eligible for graduation with a bachelor of science in industrial engineering a student must attain a grade point average of 2.0 or better for all industrial and management systems engineering courses attempted. If a course is repeated, only the last grade received is counted in computing the grade point average, and the course credit hours are counted only once. This requirement assures that the student has demonstrated overall competence in the chosen major.

To complete the B.S. degree program in four years, a student must take approximately 17 credit hours per semester. A typical program that completes B.S. degree requirements in four years is as follows.
### Industrial and Management Systems Engineering

**First Year**
Common first year as listed on the middle of page 103.

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td>MATH 261 Elem. Differential Equat</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 116 or PHYS 112</td>
<td>4</td>
<td>MAE 243 Mech. of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>IENG 213 Engineering Statistics</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Comp. &amp; Rhetoric</td>
<td>3</td>
<td>IENG 377 Engineering Economy</td>
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<td>IENG 200 Fundamentals of IE</td>
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<td>GEC Elective</td>
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<tr>
<td>IENG 220 Re-Engineering</td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 201 Microeconomics</td>
<td>3</td>
<td>ECON 202 Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>IENG 304 Materials and Costing</td>
<td>3</td>
<td>IENG 302 Mfg. Processes</td>
<td>2</td>
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<tr>
<td>IENG 350 Intro. Oper. Research</td>
<td>3</td>
<td>IENG 316 Ind. Quality Cont.</td>
<td>3</td>
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<tr>
<td>IENG 360 Human Factors Engr.</td>
<td>3</td>
<td>IENG 331 Computer Appl. IE</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>EE 221 Basic Electric Eng.</td>
<td>3</td>
<td>IENG 472 Design Prod. Systems</td>
<td>3</td>
</tr>
<tr>
<td>EE 222 Basic Electric Lab</td>
<td>1</td>
<td>IENG Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>IENG Technical Elective</td>
<td>3</td>
<td>IENG 446 Plant Layout/Mat'l Hand</td>
<td>3</td>
</tr>
<tr>
<td>IENG 455 Simula. Digital Meth.</td>
<td>3</td>
<td>Select 2 of the following courses</td>
<td>6</td>
</tr>
<tr>
<td>IENG 471 Design Productive Sys.</td>
<td>3</td>
<td>IENG Technical Elective</td>
<td></td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>MAE 242 Dynamics</td>
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<td><strong>Total</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Spring Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>MAE 242 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 320 Thermodynamics</td>
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</tr>
<tr>
<td>MAE 331 Fluid Mechanics</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

| Grand Total                               | **129**|

### Department of Mechanical and Aerospace Engineering

Ever Barbero, Ph.D., Chairperson  
323 Engineering Sciences Building  
E-mail: ever.barbero@mail.wvu.edu  
www.mae.cemr.wvu.edu

**Degrees Offered**
- Bachelor of Science in Mechanical Engineering  
- Bachelor of Science in Aerospace Engineering

**Aerospace Engineering**
Aerospace travel, space exploration, and flight of manned or unmanned vehicles continue to gain significance. Aerospace engineering is involved with the science and technology of advanced vehicles, including aircraft, rockets, missiles, and spacecraft. Although a specialized branch of engineering, it is also diverse. Aerospace technology has expanded to include design and development of new earthbound vehicles such as ground-effect machines, hydrofoil ships, and high-speed rail-type systems.
Objectives
The Department of Mechanical and Aerospace Engineering is highly committed to provide a foundation in aerospace engineering so that graduates will meet the following objectives:

- Graduates will be proficient in aerospace engineering.
- Graduates will be prepared to meet the varying demands of the workforce in the technological arena.
- Graduates will be prepared for the pursuit of lifelong learning.

The curriculum consists of a judicious combination of fundamentals, including mathematics and sciences, and practical laboratory experience which provides modern engineering tools. Aeronautical engineering subjects are to be the focus of the discipline along with significant exposure to space-related topics. The graduate will be able to critically analyze aerospace engineering problems and execute practical solutions. In addition to being able to function independently, it is expected that the graduate will be able to function with effective written and oral communication within a multidisciplinary team and be equipped with several factors such as environmental, social, and economic considerations due to a thorough education in the humanities, social sciences, ethics, safety, and professionalism.

The aerospace engineering curriculum includes studies in the disciplines encountered in the design of aerospace vehicles, missiles, rockets, and spacecraft. Undergraduate students extensively study the basic principles of fluid dynamics, solid mechanics and structures, stability and control, and thermal sciences and propulsion. The senior year includes a capstone flight vehicle design course.

The student is involved in both theoretical and experimental studies, and trained to integrate knowledge with practical engineering design. With the breadth and depth of education in aerospace engineering, the student becomes a versatile engineer, competent to work in many areas. The curriculum may serve as a terminal program by incorporating design-oriented courses for technical electives, or it may be used as a preparatory program for advanced study by the selection of science-oriented courses.

While the undergraduate curriculum is sufficiently broad to permit the graduate to select from a wide variety of employment opportunities, it contains sufficient depth to prepare a student to enter a graduate school to pursue an advanced degree. As modern science and engineering become more complex, the desirability of graduate-level preparation is being recognized by most advanced industries and government agencies.

Students can simultaneously pursue B.S. degrees in both aerospace engineering and mechanical engineering by completing additional courses. Information on this 155 credit-hour, four-and-one-half-year option can be seen at the end of this department description.

Students who plan a career in medicine, dentistry, or related areas, but who desire an aerospace engineering degree before entering the appropriate professional school, may substitute eight hours (from a combination of biology and organic chemistry courses) for the required six hours of technical electives. This selection will help the student satisfy admission requirements to the professional schools in the health sciences.

The aerospace engineering program at WVU is administered by the faculty of the Department of Mechanical and Aerospace Engineering.

Minimum Grade Point Average Requirement for Graduation (B.S.A.E.)
A requirement for graduation in aerospace engineering is a departmental grade point average of at least 2.0 in all required mechanical and aerospace engineering departmental courses. If a required MAE course is repeated, only the hours credited and the grade received for the last completion of the course will be counted in computing the student’s departmental grade point average.

It is important for students to take courses in the order specified as much as possible; all prerequisites and concurrent requirements must be observed. To complete the B.S.A.E. degree program in four years, a student must take approximately 16 credit hours per semester.

A typical program which completes B.S. degree requirements in four years is as follows.
Aerospace Engineering

First Year
Common first year as listed on the middle of page 103.

Second Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 215 Intro. to Aerospace Engr.</td>
<td>3</td>
<td>MAE 242 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>MAE 243 Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td>MAE 244 Dynam. and Strength Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td>MATH 261 Elem. Differential Equat.</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 102 Comp. &amp; Rhetoric</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>Total</td>
<td>14</td>
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</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
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<tbody>
<tr>
<td>MAE 316 Analy. of Engr. Sys.</td>
<td>3</td>
<td>EE 221 Basic Electrical Engr.</td>
<td>3</td>
</tr>
<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>EE 222 Basic Electrical Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAE 335 Incompressible Aerodyn.</td>
<td>3</td>
<td>MAE 336 Compress. Aerodyna</td>
<td>3</td>
</tr>
<tr>
<td>MAE 343 Intermed. Mech. of Matls.</td>
<td>3</td>
<td>MAE 345 Aerospace Structures</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>MAE 365 Flight Dynamics</td>
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</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
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<td>16</td>
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</table>

Fourth Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 426 Flight Vehcl Propulsion</td>
<td>3</td>
<td>MAE 423 Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>MAE 434 Experimental Aerodyn.</td>
<td>2</td>
<td>MAE 460 Automatic Controls</td>
<td>3</td>
</tr>
<tr>
<td>MAE 456 CAD/Finite Elem. Anal.</td>
<td>3</td>
<td>MAE 476 Space Flight and Sys</td>
<td>3</td>
</tr>
<tr>
<td>MAE 460 Automatic Controls</td>
<td>3</td>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
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<td>Total</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grand Total</td>
<td>125</td>
</tr>
</tbody>
</table>

Note: The six hours of technical electives must be selected from a list of approved aerospace engineering technical electives after consulting with the advisor; the courses selected should form a clear and consistent pattern according to the career objectives of the student. The 12 hours of General Education Curriculum (GEC) courses must be selected to meet the University and college GEC requirements.

Mechanical Engineering

Mechanical engineering is a broad technical discipline. It integrates knowledge of the physical sciences and mathematics for the design, construction, and manufacture, testing, analysis, use, and operation of a device, structure, a machine, a process, or a system in service to mankind. Its development parallels the growth of industry. Modern society needs mechanical engineers who have broad and deep training in the fundamentals of engineering and related sciences, and have developed a versatility in analyzing and solving complex problems. The mechanical engineer must not only possess a high level of professional expertise but also have an appreciation for vital human and economic considerations.

Mechanical engineers are problem-solvers who are scientifically informed and mathematically minded. The mechanical engineering curriculum prepares students to deal effectively with a broad range of engineering problems rather than with narrow specialties. Graduates find employment in a wide range of industries, government agencies, and educational institutions where they are concerned with many functions: the use and economic conversion of energy from natural sources into useful energy for power, light, heating, cooling, and transportation; the design and production of machines to lighten the burden of human work; the planning and development of systems for using energy machines and resources; the processing of materials into products useful to mankind; and the education and training of specialists who deal with mechanical systems.
Objectives

The Department of Mechanical and Aerospace Engineering is highly committed to provide a foundation in mechanical engineering so that graduates will meet the following objectives.
• Graduates will be proficient in mechanical engineering.
• Graduates will be prepared to meet the varying demands of the workforce in the technological arena.
• Graduates will be prepared for the pursuit of lifelong learning.

The curriculum consists of a judicious combination of fundamentals, including mathematics and sciences, and practical laboratory experience which provides modern engineering tools. Mechatronics, which is a study of the interdependence between mechanical engineering and electrical/electronics engineering, is a key part of the mechanical engineering curriculum. The graduate will be able to critically analyze mechanical engineering problems and execute practical solutions. In addition to being able to function independently, it is expected that the graduate will be able to function with effective written and oral communication within a multidisciplinary team and be equipped with several factors such as environmental, social, and economic considerations due to a thorough education in the humanities, social sciences, ethics, safety, and professionalism.

While the undergraduate curriculum is sufficiently broad to permit the graduate to select from a wide variety of employment opportunities, it contains sufficient depth to prepare a student to enter a graduate school to pursue an advanced degree. As modern science and engineering become more complex, the desirability of graduate-level preparation is being recognized by most advanced industries and government agencies.

Students can simultaneously pursue B.S. degrees in both aerospace engineering and mechanical engineering by completing additional courses. Information on this 155 credit-hour, four-and-one-half-year option can be seen at the end of this section.

Students who plan a career in medicine, dentistry, or related areas, but who desire a mechanical engineering degree before entering the appropriate professional school, may substitute eight hours (from a combination of biology and organic chemistry courses) for the required six hours of technical electives. This selection will help the student satisfy admission requirements to the professional schools in the health sciences.

The mechanical engineering program at WVU is administered by the faculty of the Department of Mechanical and Aerospace Engineering.

Minimum Grade Point Average Requirement for Graduation (B.S.M.E.)

A requirement for graduation in mechanical engineering is a departmental grade point average of 2.0 or better for all required mechanical and aerospace engineering (MAE) courses. If a required MAE course is repeated, only the hours credited and the grade received for the last completion of the course is used in computing the grade point average.

It is important for students to take courses in the order specified as much as possible; all prerequisites and concurrent requirements must be observed. To complete the B.S.M.E. degree program in four years, a student must take approximately 16 credit hours per semester.

A typical program which completes B.S. degree requirements in four years is as follows.
First Year
Common first year as listed on the middle of page 103.

Second Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 211 Mechtron. or GEC Elect</td>
<td>3</td>
<td>MAE 242 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>MAE 243 Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td>MAE 244 Dynam. &amp; Strength Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td>MATH 261 Elem. Differential Equat.</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 102 Comp. and Rhetoric</td>
<td>3</td>
<td>MAE 211 Mechtron. or GEC Elect</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td><strong>Total</strong></td>
<td>14</td>
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Third Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 316 Analy. of Engr. Sys</td>
<td>3</td>
<td>MAE 321 Applied Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>MAE 322 Thermal and Fluids Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAE 343 Intermed. Mech. Mats</td>
<td>3</td>
<td>MAE 331 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>EE 221 Basic Electrical Engr.</td>
<td>3</td>
<td>MAE 342 Dynamics of Machines</td>
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</tr>
<tr>
<td>EE 222 Basic Electrical Lab</td>
<td>1</td>
<td>IENG 302 Manufacturing Process</td>
<td>2</td>
</tr>
<tr>
<td>GEC Elective</td>
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<td>IENG 303 Manf. Process Lab</td>
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<tr>
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<td><strong>Total</strong></td>
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</table>

Fourth Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 454 Machine Design &amp; Mfg</td>
<td>3</td>
<td>MAE 411 Advanced Mechatronics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 456 CAD/Finite Elem. Ana</td>
<td>3</td>
<td>MAE 423 Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>or MAE 423 Heat Transfer</td>
<td></td>
<td>or MAE 456 CAD/Finite Elem. Ana.</td>
<td></td>
</tr>
<tr>
<td>MAE 471 Prin. of Engr. Design</td>
<td>3</td>
<td>MAE 460 Automatic Controls</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td>Technical Elective</td>
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</tr>
<tr>
<td>GEC Elective</td>
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<td><strong>Total</strong></td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
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<td>124</td>
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</tbody>
</table>

Note: The six hours of technical electives must be selected from a list of approved mechanical engineering technical electives after consulting with the advisor; the courses selected should form a clear and consistent pattern according to the career objectives of the student. The 21 hours of General Education Curriculum (GEC) courses must be selected to meet the University and college GEC requirements.

Dual Major in Aerospace Engineering and Mechanical Engineering
In the modern technical marketplace, college graduates must attain every competitive edge possible to enhance their career opportunities. One way to do this is with a master’s degree following the bachelor’s degree; however, this often results in more specialization than may be desired, and may take an additional two years. Another option is to broaden the undergraduate experience, thus opening more opportunities for the graduate. The dual B.S.A.E./B.S.M.E. program awards both the aerospace engineering and mechanical engineering degrees at the completion of a planned curriculum.

Students under this option pursue the B.S.A.E. and B.S.M.E. degrees simultaneously. This can be accomplished by declaring intentions as a freshman requesting admission to the programs, or by informing an MAE advisor of the dual-degree preference. Maximum scheduling flexibility will result when this decision is made as early as possible in the student’s academic career. Dual-degree students must take all courses listed in the 155-hour dual curriculum below and satisfy the other requirements of the two individual programs.

The state of West Virginia is a member of a group of Academic Common Market (ACM) states. WVU allows residents of states within the ACM to enroll in the dual B.S.A.E./B.S.M.E. program on an in-state tuition basis. Application must be made through the higher education authority of the state of residence.
A typical program which completes both B.S. degree requirements in five years is as follows.

**First Year**
Common first year as listed on the middle of page 103.

**Second Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 215 <em>Intro. Aerospace Engr.</em></td>
<td>3</td>
<td>MAE 211 <em>Mechatronics</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 241 <em>Statics</em></td>
<td>3</td>
<td>MAE 242 <em>Dynamics</em></td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 <em>Multivariable Calculus</em></td>
<td>4</td>
<td>MAE 243 <em>Mechanics of Materials</em></td>
<td>3</td>
</tr>
<tr>
<td>PHYS 112 <em>General Physics</em></td>
<td>4</td>
<td>MAE 331 <em>Fluid Mechanics</em></td>
<td>4</td>
</tr>
<tr>
<td>ENGL 102 <em>Comp. and Rhetoric</em></td>
<td>3</td>
<td>MATH 261 <em>Elem. Differential Equat.</em></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

**Third Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 316 <em>Analysis of Eng. Sys.</em></td>
<td>3</td>
<td>MAE 244 <em>Dynamics &amp; Strength Lab.</em></td>
<td>1</td>
</tr>
<tr>
<td>MAE 320 <em>Thermodynamics</em></td>
<td>3</td>
<td>MAE 322 <em>Thermal &amp; Fluids Lab</em></td>
<td>1</td>
</tr>
<tr>
<td>MAE 335 <em>Incompressible Aerody.</em></td>
<td>3</td>
<td>MAE 336 <em>Compressible Aero.</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 343 <em>Intermed. Mech of Mat.</em></td>
<td>3</td>
<td>MAE 342 <em>Dynamics of Machines</em></td>
<td>3</td>
</tr>
<tr>
<td>EE 221 <em>Basic Electrical Engr.</em></td>
<td>3</td>
<td>MAE 345 <em>Aerospace Structures</em></td>
<td>3</td>
</tr>
<tr>
<td>EE 222 <em>Basic Electrical Lab.</em></td>
<td>1</td>
<td>MAE 365 <em>Flight Dynamics</em></td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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</tbody>
</table>

**Fourth Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 426 <em>Flight Vehicle Propulsion</em></td>
<td>3</td>
<td>MAE 411 <em>Advanced Mechatronics</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 434 <em>Experimen. Aerodyna.</em></td>
<td>2</td>
<td>MAE 423 <em>Heat Transfer</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 456 <em>CAD/Finite Elem Anal.</em></td>
<td>3</td>
<td>MAE 460 <em>Automatic Controls</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 475 <em>Flight Vehicle Design</em></td>
<td>3</td>
<td>MAE 476 <em>Space Flight and Sys.</em></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td>IENG 302 <em>Mfg. Processes</em></td>
<td>2</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td>IENG 303 <em>Mfg. Process Lab.</em></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**Fifth Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 454 <em>Machine Design &amp; Mfg.</em></td>
<td>3</td>
</tr>
<tr>
<td>MAE 471 <em>Prin. of Engr. Design</em></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>2</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>155</strong></td>
</tr>
</tbody>
</table>

**Note:** Six hours of technical electives must be selected from a list of approved aerospace engineering technical electives and other six hours from a list of approved mechanical engineering technical electives after consulting with the advisor; the courses selected should form a clear and consistent pattern according to the career objectives of the student. The 12 hours of General Education Curriculum (GEC) courses must be selected to meet the University and college GEC requirements.
Department of Mining Engineering
Christopher J. Bise, Ph.D., Chair
365-A Mineral and Energy Resources Building
E-mail: Chris.Bise@mail.wvu.edu
http://www.mine.cemr.wvu.edu

Degree Offered
Bachelor of Science in Mining Engineering

Curriculum in Mining Engineering
Mining engineering deals with discovering, extracting, processing, marketing, and utilizing mineral deposits from the Earth's crust. The role of the mining engineer may be quite diversified, and the field offers opportunities for specialization in a large number of technical areas. The trained professional in this field is well versed in mining and geology and also in the principles of civil, electrical, and mechanical engineering as applied to the mining industry. With the present trend toward the use of engineers in industrial management and administrative positions, the mining engineer's training also includes economics, business, personnel management, and the humanities.

The educational objectives of the B.S.Min.E. program have been established to produce graduates who are thoroughly prepared to meet the operational and engineering challenges of the mining industry and to continue their studies in graduate programs. The program of study is designed to assure that:

• Graduates are well prepared in the application of mathematics, science, and engineering.
• Graduates are well prepared to design and conduct experiments, as well as to analyze and interpret data.
• Graduates are well prepared to design a system, component, or process to meet desired needs.
• Graduates have an ability to function on multidisciplinary teams.
• Graduates have an ability to identify, formulate, and solve engineering problems.
• Graduates have an understanding of professional and ethical responsibility.
• Graduates have an ability to communicate effectively.
• Graduates have the broad education necessary to understand the impact of engineering solutions in a global and societal context.
• Graduates have a recognition of the need for, and an ability to engage in life long learning.
• Graduates have knowledge of contemporary issues.
• Graduates have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
• Graduates have an understanding of the importance of economics, environmental, health, and safety issues in the operations of modern mines.
• Graduates have an ability to learn independently.

Professional technical courses include surface and underground mining systems, engineering principles of blasting, materials handling, ventilation, roof control, rock mechanics, mining equipment, coal and mineral preparation, plant and mine design, geology, and water control. In addition, students receive a foundation in the managerial, financial, environmental, and social aspects of the operation of a mining enterprise.

In the fourth year, the student may specialize in such career areas as coal mining, ore mining, or other phases of mining engineering through the proper selection of design problems and electives. Local mines and preparation plants provide extensive opportunity for research, instruction, and field work in a real-world situation.

A typical program which completes B.S. degree requirements in four years is as follows.
### First Year
Common first year as listed on the middle of page 103.

### Second Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINE 205 Undergrd. Mining Syst.</td>
<td>3</td>
<td>MINE 206 Surface Mining Systems</td>
<td>4</td>
</tr>
<tr>
<td>MINE 201 Mine Surveying</td>
<td>3</td>
<td>MAE 242 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MINE 261 Engineering CAD</td>
<td>2</td>
<td>MATH 261 Elem. Differential Equat.</td>
<td>4</td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>PHYS 112 General Physics</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 342 Struct. Geol. for Engr.</td>
<td>3</td>
<td>MAE 331 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td>Total</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

### Third Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINE 306 Mining Expl. and Eval</td>
<td>3</td>
<td>MINE 331 Mine Ventilation</td>
<td>3</td>
</tr>
<tr>
<td>MINE 382 Mine Power System</td>
<td>3</td>
<td>MINE 427 Coal Preparation</td>
<td>4</td>
</tr>
<tr>
<td>Mine 461 Appl. Min. Comp. Meth.</td>
<td>3</td>
<td>Engl 102 Comp. &amp; Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>MAE 243 Mech. of Materials</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

### Fourth Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINE 411 Rock Mechanics</td>
<td>4</td>
<td>MINE 484 Mine Design-Report</td>
<td>4</td>
</tr>
<tr>
<td>MINE 483 Mine Design-mapping</td>
<td>2</td>
<td>AGRN 455 Recl. of Disturbed Soils</td>
<td>3</td>
</tr>
<tr>
<td>MINE 471 Mine &amp; Safety Mngmt</td>
<td>3</td>
<td>Mine 480 Multidisciplin. Team Prjt</td>
<td>1</td>
</tr>
<tr>
<td>Technical Elective*</td>
<td>3</td>
<td>Eng/Sci Technical Elective**</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>GEC Elective</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>134</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Technical elective options are MINE 407, MINE 414, or other courses from mining engineering approved by the department.
** Eng/Sci technical elective may be selected from non-mining engineering/science courses, or mining engineering courses approved by the department.

For the most recent list of approved courses in the General Education Curriculum, visit the GEC site at WVU Admissions and Records.

### Curriculum for a Dual Major in Mining and Civil Engineering

Students can simultaneously pursue B.S. degrees in mining engineering and civil engineering by completing additional courses. The dual degree program requires satisfactory completion of 161 credit hours.

A typical program which completes both B.S. degree requirements in five years is as follows.

### First Year
Common first year as listed on the middle of page 103.

### Second Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 201 Introduction to CE</td>
<td>1</td>
<td>ENGL 102 Comp. &amp; Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>MAE 242 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 Multivariate Calculus</td>
<td>4</td>
<td>MATH 261 Elem. Differential Equat.</td>
<td>4</td>
</tr>
<tr>
<td>MINE 201 Mine Surveying</td>
<td>3</td>
<td>MINE 206 Surface Mining Systems</td>
<td>4</td>
</tr>
<tr>
<td>MINE 205 Undergrd. Mining Syst.</td>
<td>3</td>
<td>PHYS 112 General Physics</td>
<td>4</td>
</tr>
<tr>
<td>MINE 261 Engineering CAD</td>
<td>2</td>
<td>Total</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Third Year
Fall Semester  Hrs.  Spring Semester  Hrs.
CE 321 Fluid Mechanics ..........3  CE Core† ........................................ 4
GEOL 342 Structural Geology ..........3  CE Core† ........................................ 4
MAE 243 Mechanics of Materials ....3  MINE 331 Mine Ventilation ..........3
MAE 320 Thermodynamics ..........3  MINE 427 Coal Preparation ..........4
STAT 215 Statistics ..............3  MINE 480 Interdis. Team Project ....1
Total ............................................... 15  Total ............................................... 16

Fourth Year
Fall Semester  Hrs.  Spring Semester  Hrs.
CE Core† ........................................ 4  CE Seminar .................................... 1
CE Core† ........................................ 4  CE Design Elective* ....................... 3
MINE 306 Mining Explor. & Eval. ....3  CE Design Elective* ....................... 3
MINE 382 Mine Power System ....3  CE 322 Hydrotechnical Engr. ..........3
MINE 306 Mining Explor. & Eval. ....3  GEC Elective .................................... 3
MINE 382 Mine Power System ....3  IENG 377 Engineering Economy ....3
Total ............................................... 14  Total ............................................... 16

Fifth Year
Fall Semester  Hrs.  Spring Semester  Hrs.
GEC Elective .................................... 3  CE Technical Elective** ............... 3
GEC: ECON 201 Prin. of Microec ....3  CE 479 Integrated Design ..........3
MINE 411 Rock Mech. & Grd. Cont. ....4  GEC Elective .................................... 3
MINE 471 Mine & Safety Mgmt. ....3  GEC Elective .................................... 3
MINE 483 Mine Design-Exploration ..2  MINE 484 Mine Design-Report (W) ...4
Total ............................................... 15  Total ............................................... 16

Total Credit Hours for the BS CE & MINE Double Major Program: 161

Notes:
1. Discipline substitutions are:
   a. MINE 306 fulfills requirement of CE Engr/Math/Sci elective 1
   b. MINE 411 fulfills requirement of CE Engr/Math/Sci elective 2
   c. MINE requirement for AGRN 455 is fulfilled through CE 322 and CE 351
   d. MINE 382 fulfills requirement of CE engineering elective outside CE
   e. MINE 461 is fulfilled by CE 322
   f. MINE 484W fulfills CE requirement of ENGL 305
   g. MINE requirement for STAT 211 is fulfilled by CE requirement of STAT 215
   h. CE 321 fulfills MINE requirement for MAE 331
   i. MINE technical elective and MINE eng/sci technical elective requirements are fulfilled by any two of the following; CE 332, 347 or 361.
   j. GEOL 342 fulfills requirement of CE basic science elective
   k. MINE 261 substitutes for CE 210
2. † CE core classes are: CE 332 Introduction to Transportation Engineering; CE 351 Introductory Soil Mechanics; CE 347 Environmental Engineering; CE 361 Structural Analysis I
   * CE design electives may be selected from civil engineering design courses approved by the CE department. See your advisor for a list of acceptable courses in CE department.
   ** CE technical electives may be selected from civil engineering courses approved by the CE department. See your advisor for a list of acceptable courses in CE department.
3. For the most recent list of approved courses in the GEC program, visit the GEC site (http://www.arc.wvu.edu/courses/gec.html) at WVU Admissions and Records.

Dual Degree Curriculum for Mining Engineering and Geology
This curriculum allows students to simultaneously pursue B.S. degrees in both mining engineering and geology. The dual degree program requires satisfactory completion of 158 credits, and meets all the requirements for both degrees.

A typical program which completes both B.S. degree requirements in five years is as follows.
# Mining Engineering/Geology (Dual)

## First Year

Common first year as listed on the middle of page 103.

## Second Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 284 Mineralogy</td>
<td>3</td>
<td>CHEM 116 Funda. of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>GEOL 285 Introductory Petrology</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251 Multivariate Calculus</td>
<td>4</td>
<td>MAE 331 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MINE 201 Mine Surveying</td>
<td>3</td>
<td>MINE 206 Surface Mining Systems</td>
<td>4</td>
</tr>
<tr>
<td>MINE 205 Undergrd Mining Syst.</td>
<td>3</td>
<td>PHYS 112 General Physics</td>
<td>4</td>
</tr>
<tr>
<td>MINE 261 Engineering CAD</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

## Third Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 341 Structural Geology</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>GEOL 311 Stratigraphy and Sedimentation (W)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 261 Elem. Differential Equat.</td>
<td>4</td>
<td>MAE 243 Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MINE 461 App Minl Comp. Mthds</td>
<td>3</td>
<td>MINE 331 Mine Ventilation</td>
<td>3</td>
</tr>
<tr>
<td>STAT 211 Elem. Statistical Inference</td>
<td>3</td>
<td>MINE 427 Coal Preparation</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td><strong>MINE 480 Interdis.Team Project</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Summer

| GEOL 404 Geology Field Camp*** | 6 |
| **Total**                      | 6 |

## Fourth Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective (ECON 201 Principle of Microeconomics)</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 331 Paleontology, or GEOL 454 Environmental and Exploration Geophysics</td>
<td>3</td>
<td>GEOL Elective*</td>
<td>3</td>
</tr>
<tr>
<td>MINE 382 Mine Power System</td>
<td>3</td>
<td>MAE 242 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MINE 306 Mine Explor. &amp; Eval.</td>
<td>3</td>
<td>MINE 483 Mine Design-Exploration</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

## Fifth Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 495 or MINE 495 Independent Study**</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>MINE 411 Rock Mechanics &amp; Ground Control</td>
<td>4</td>
<td>GEOL Elective*</td>
<td>3</td>
</tr>
<tr>
<td>MINE 471 Mine and Safety Mgmt.</td>
<td>3</td>
<td>MAE 242 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MINE 484 Mine Design-Report (W)</td>
<td>4</td>
<td>MINE 483 Mine Design-Exploration</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

**Total Credit Hours for the Geology and Mining Engineering Dual Major: 158**
Notes:
1. Discipline substitutions are:
   a. GEOL 311 and other GEOL upper-division elective courses fulfill the requirements for MinE technical elective and eng/sci technical elective.
   b. GEOL requirement for GEOL 341 is substituted for MINE requirement for GEOL 342.
   c. MINE requirement of ARGN 455 is fulfilled through GEOL 321
   d. MINE 205 and MinE 206 fulfill the requirement of GEOL upper-division technical electives.
   e. MINE 484W and GEOL 311W fulfill the requirement of writing course.
   f. ECON 201 and GEOL 101 fulfill two of the GEC requirements in the mining curriculum
2. * GEOL technical elective may be any GEOL upper-division elective courses including GEOL 493, but not GEOL 351.
   ** One credit hour from GEOL 495, MINE 495, or eng/sci technical electives or others approved by GEOL or MINE department can be used to satisfy 158 total credit hours requirement.
   *** GEOL 404 Summer Field Camp is GEOL capstone course.
3. For the most recent list of approved courses in the GEC program, visit the GEC site (http://www.arc.wvu.edu/courses/gec.html) at WVU Admissions and Records.

Department of Petroleum and Natural Gas Engineering
Sam Ameri, M.S., P.E., Chair
347-A Mineral and Energy Resources Building
E-mail: samuel.ameri@mail.wvu.edu
http://www.pnge.cemr.wvu.edu

Degree Offered
Bachelor of Science in Petroleum and Natural Gas Engineering

Curriculum in Petroleum and Natural Gas Engineering
Petroleum and natural gas engineering is concerned with design and application aspects of the discovery, production, and transportation of oil and natural gas resources.

Professionals in this field must have a thorough understanding of the geological principles relating to the occurrence, discovery, and production of fluid hydrocarbons. The petroleum and natural gas engineer must know, and be capable of applying both conventional engineering design principles, as well as those pertaining specifically to the field of petroleum and natural gas engineering. These are developed through the petroleum engineering courses in the curriculum. In addition, a strong foundation in mathematics and the sciences broadens the future engineer’s professional capabilities. Because many engineers will be employed as supervisors or executives, managerial and social skills are also emphasized.

Students are offered the opportunity to enter all phases of the petroleum and natural gas industry in meaningful and important jobs, continue their education towards advanced degrees, or in some cases pursue a combination of professional employment and continued education.

The petroleum and natural gas engineering undergraduate program educational objectives are:
• The graduates will be successful in their professional careers as petroleum engineers in the energy industry, government agencies, and/or post-graduate education.
• The graduates will be successful in effectively formulating, communicating, and implementing solutions to engineering problems in a variety of professional environments.
• The graduates will be successful in demonstrating their obligations to the profession, to their employer, and to society.

The foundation for achieving program objectives is established through a rigorous curriculum that provides the students with:
• An understanding of scientific and engineering principles and the application of these principles in solving petroleum and natural gas engineering problems using modern tools.
• An integrated design experience leading to a capstone design course.
• A balanced and rounded education to recognize the need for developing technical communication and teamwork skills, as well as understanding the engineer’s professional, ethical, and societal obligations.

The outcomes of the petroleum and natural gas engineering undergraduate program are as follows:
• The graduate will have a thorough understanding of scientific and engineering principles and their application to petroleum and natural gas engineering problems.
• The graduates will have the ability to integrate their scientific and engineering knowledge to design and conduct experiment, and interpret and analyze data.
• The graduates will have the ability to apply scientific and engineering fundamentals to formulate solutions to petroleum and natural gas engineering problems.
• The graduates will have the ability to use techniques, skills, and modern petroleum and natural gas engineering tools.
• The graduate will have the ability to integrate their scientific and engineering knowledge to solve petroleum and natural gas engineering design problems.
• The graduates will have the ability to communicate effectively.
• The graduates will have the ability to function on multi-disciplinary teams.
• The graduates will have recognition of petroleum engineer’s responsibility in professional and ethical context.
• The graduate will have an understanding of the impact of petroleum and natural gas engineering solutions in societal and global context.
• The graduates will recognize the need to acquire the knowledge of contemporary issues.
• The graduate will recognize the need to engage in lifelong learning.

These outcomes are achieved by enrolling in rigorous individual courses in all basic areas of petroleum and natural gas engineering, basic science, mathematics, geology, humanities, and social sciences. The petroleum and natural gas engineering curriculum also contains significant laboratory components aimed at reinforcing the knowledge gained in the classroom. In the senior year, electives are offered in which the student may obtain additional depth of knowledge in specific areas of petroleum and natural gas technology. Each student is individually assisted in course selection by an advisor, who is a member of the petroleum and natural gas engineering faculty.

Students gain practical experience and first-hand knowledge of many aspects of petroleum and natural gas engineering through close proximity to the industry in West Virginia and surrounding states. Production sites, secondary and enhanced oil recovery projects, compressor stations, gas storage fields, and corporate offices all provide excellent opportunities for study. Additional experience is provided through modern, well-equipped laboratories within the department and the University. Students are urged to gain field experience through summer employment in the industry.

A student admitted to the program must achieve a grade point average of 2.25 or better and a grade of C or better in all petroleum and natural gas engineering (PNGE) courses in order to qualify for the bachelor’s degree.

A typical program which completes B.S. degree requirements in four years is as follows.
Petroleum and Natural Gas Engineering

First Year
Common first year as listed on the middle of page 103.

Second Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td>MATH 261 Elem. Differential Equat.</td>
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</tr>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td>MAE 243 Mech. of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>MAE 331 Fluid Mech.</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Composition &amp; Rhetoric</td>
<td>3</td>
<td>IENG 213 or STAT 215</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 101 Physical Geology</td>
<td>3</td>
<td>PNGE 200 Intro. Pet. Engr.</td>
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<td>Total</td>
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Third Year
<table>
<thead>
<tr>
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<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNGE 332 Pet. Prop./Phase Beh.</td>
<td>3</td>
<td>PNGE 310 Drilling Engr.</td>
<td>4</td>
</tr>
<tr>
<td>EE 221 Basic Elec. Engr.</td>
<td>3</td>
<td>PNGE 312 Drilling Fl. Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECON 201 Microeconomics</td>
<td>3</td>
<td>PNGE 333 Elem. Res. Engr.</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 342 Struct. Geol.</td>
<td>3</td>
<td>GEOL Elective*</td>
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</tr>
<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>ECON 202 Macroeconomics</td>
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</tr>
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<td>GEC Elective</td>
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<td>Total</td>
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</tbody>
</table>

Fourth Year
<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNGE 420 Production Engr.</td>
<td>3</td>
<td>PNGE 400 Pet. Engr. Ethics</td>
<td>1</td>
</tr>
<tr>
<td>PNGE 434 App. Res. Engr.</td>
<td>3</td>
<td>PNGE 405 Multidis. Team Project</td>
<td>1</td>
</tr>
<tr>
<td>PNGE 441 O&amp;G Property Eval.</td>
<td>3</td>
<td>PNGE 432 Pet. Res. Lab</td>
<td>1</td>
</tr>
<tr>
<td>PNGE 450 Formation Eval.</td>
<td>3</td>
<td>PNGE 480 Pet. Engr. Design</td>
<td>3</td>
</tr>
<tr>
<td>PNGE 470 Nat. Gas. Engr.</td>
<td>4</td>
<td>Technical Elective**</td>
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<tr>
<td>Total</td>
<td>16</td>
<td>GEC Elective</td>
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<tr>
<td></td>
<td></td>
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<tr>
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<td>Grand Total</td>
<td>131</td>
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</tbody>
</table>

*Recommended geology electives are GEOL 365, 454, or 472.
**Recommended technical electives are PNGE 460, 471, 501, or 532.
College of Human Resources and Education

Dee Hopkins, Ed.D., Dean
James Rye, Ph.D., Interim Associate Dean for Research and Technology
Judy A. Abbott, Ph.D., Assistant Dean for Teacher Education

http://www.wvu.edu/~hre

Degrees Offered
- Bachelor of Arts in Multidisciplinary Studies
- Bachelor of Science in Child Development and Family Studies
- Bachelor of Science in Speech Pathology and Audiology
- Five-Year Integrated Baccalaureate/M.A. in Elementary Education
- Five-Year Integrated Baccalaureate/M.A. in Secondary Education

Nature of Program
The College of Human Resources and Education is divided into six academic departments: Counseling, Rehabilitation Counseling, and Counseling Psychology; Curriculum and Instruction — Literacy Studies; Educational Leadership Studies; Technology, Learning, and Culture; Special Education; and Speech Pathology and Audiology. The college’s faculty and staff are located in Allen Hall on the Evansdale campus.

The college offers undergraduate programs in child development and family studies and in speech pathology and audiology. The college also offers teacher preparation programs in elementary and secondary education in which students earn a baccalaureate degree in a content area or in an area of specialization from the Eberly College of Arts and Sciences and a master of arts in elementary or secondary education by completing a five-year sequence of study. The teacher education programs integrate liberal studies, coursework in pedagogy and the content area, and a three-year sequence of clinical experiences in a professional development school. The College of Human Resources and Education cooperates with other schools and colleges at WVU to prepare teachers in agriculture, art, music, and physical education. The degree programs which prepare students to teach in these areas are housed in the College of Agriculture, Forestry, and Consumer Sciences; the College of Creative Arts; and the School of Physical Education.

The college offers graduate programs of study in counseling, counseling psychology, rehabilitation counseling, special education, speech pathology and audiology, curriculum and instruction, educational leadership, elementary education, reading, secondary education, educational psychology, and instructional design and technology. The Benedum Collaborative, the International Center for Disability Information, the Center for Teaching and Learning Technologies, the Speech and Hearing Clinics, the Center for Student Advising and Records, and the Reading Clinic are also located in the college.

Accreditation
West Virginia University is fully accredited for the preparation of teachers by the National Council for the Accreditation of Teacher Education (NCATE) and programs are approved by the West Virginia State Department of Education. The Ed.D. and Ph.D. are the highest degrees approved and offered. Students in elementary and secondary education must meet University requirements for admission, retention, and graduation, and West Virginia Department of Education requirements for teacher certification.

The program in speech pathology and audiology is fully accredited by the American Speech-Language-Hearing Association (ASHA). Upon completion of the master’s degree in this field, students qualify for certification by ASHA and by the West Virginia Department of Education. The counseling program is fully accredited by the Council for Accreditation of Counseling and Related Educational Programs; counseling psychology is fully accredited by the American Psychological Association, and the rehabilitation counseling program is fully accredited by the Council for Rehabilitation Education.
Admission
Admission, curriculum, and degree requirements of the various degree programs of the College of Human Resources and Education are provided in each program section in this catalog. It is the responsibility of the student to take steps to insure that he or she is properly informed of the degree requirements and/or the certification standards being sought. Since certification requirements are changed periodically by the state, the fulfillment of certification requirements as presented in this catalog cannot guarantee compliance with the most recent requirements. Students are therefore encouraged to seek the counsel of members of the faculty, their advisors, and the college certification officer on matters pertaining to degree and certification requirements.

Child Development and Family Studies
Daniel E. Hursh, Ph.D., Chair, Technology, Learning and Culture
Amy Kennedy, Ph.D., Assistant Professor, Child Development and Family Studies
Carol A. Markstrom, Ph.D., Program Coordinator, Child Development and Family Studies
Kristin Mollanen, Ph.D., Assistant Professor, Child Development and Family Studies
Barbara Pavel-Alvarez, M.S., Teaching Instructor, Child Development and Family Studies
Barbara G. Warash, Ed.D., Director, Child Development Laboratory (Nursery School)

Program Description
The undergraduate program in child development and families studies leads to a B.S. in which students can choose from two curriculum options: birth through pre-kindergarten/early childhood education or family and youth studies. Birth through pre-kindergarten/early childhood education is best suited for students interested in working with young children, from birth to four years, and their parents in pre-school or child care programs. Family and youth studies is best suited for students interested in working with older children, adolescents, and/or families in youth development or family development programs in community agencies.

Dual Certification in Birth Through Pre-Kindergarten and Early Childhood Special Needs
The birth through pre-kindergarten early childhood education/special needs option focuses on the social, emotional, intellectual, and physical development of all children. Students are educated to plan programs, perform selected developmental assessments, and interact with young children in developmentally appropriate ways. Settings for internship experiences include the West Virginia University Child Development Laboratory for preschool children, public school preschools and placements in community childcare centers to work with infants and toddlers. Upon graduation, students may apply for the West Virginia State Department of Education Certification in birth through pre-kindergarten education. The program is also offering an early childhood director's credential.

Family and Youth Studies
The emphasis in family and youth studies is designed for students with interests in older children, adolescents, and/or families. Students in this emphasis may be seeking careers working with these segments of the population in such settings as youth or family service agencies. Additionally, this emphasis is appropriate for students who will pursue graduate studies in human development, marriage and family therapy, education, developmental psychology, social work, and related fields. In the family and youth studies emphasis, students complete coursework related to family issues, family interaction, human growth and development, human sexuality, youth concerns, and related topics. All students are required to complete internships at community family- and/or youth-focused agencies. Students in this option may wish to consider completing a certificate in gerontology or disability studies or a minor in women's studies, communication studies, sociology and anthropology, or leadership studies.
Family and Youth Studies-Extension Pathway

This is a sub-emphasis of family and youth studies and incorporates an Extension component in the program of study through relevant coursework and internship experiences with Extension Services. For motivated students with GPAs of 3.0 or higher, this option provides the opportunity to complete both B.S. and M.A. degrees in CDFS within a five-year time frame. The Family and Youth Studies-Extension Pathway is designed for students seeking careers with Cooperative Extension working with families or in 4-H/youth development. This option is also appropriate for students seeking similar community-based employment requiring leadership and educational skills.

Minor In Child Development and Family Studies

Upon completion of six three-hour courses, students will be better prepared for careers in a variety of settings including preschools, Head Start, child care centers, juvenile care centers, and human and family service agencies. A cumulative college GPA of at least 2.0 is required for admission to the minor.

Information for Transfer Students

A number of students transfer to WVU from other institutions, as well as transfer from within the University into CDFS. A student must have an overall average of 2.5 GPA in order to be accepted as a transfer into CDFS. In order for transfer students to complete the program requirements, they should anticipate spending additional time at the university to complete the program. Certain courses are offered only in the fall or spring of the sophomore, junior, and senior years. In addition, certain courses must be taken in a specified sequence.

Students cannot take the following courses until they are accepted as majors into CDFS—211, 212, 412, 413, 415, and 491. Students transferring from other institutions must apply in advance with the WVU Office of Admissions and Records (304-293-2124) to determine which courses taken at other institutions will be given full credit at WVU.

Through the 2+2 articulation agreement between WVU and Fairmont State University (FSU), students transferring with an associate of applied sciences degree in early childhood from FSU are automatically entered into the CDFS undergraduate program at WVU.

Grade Information

Students must earn grades of C or better in all courses with the CDFS course designator. If the student receives a D or F in a CDFS course, the course must be taken over until a C or better is obtained. The credits associated with a D grade earned in a CDFS course will not count toward the 128 credit hours required for graduation. If a student’s overall GPA drops below 2.5, he or she may be subject to academic probation and potentially suspension.

Career Opportunities

Graduates of CDFS may work with children in a variety of settings, such as public school early childhood education programs, Head Start, child care centers or Cooperative Extension. Additionally, students may find employment working with other children and adolescents in youth service agencies and with parents and families in a variety of social service settings. Salary is dependent on numerous factors, such as the qualifications of the graduate, the structure of the employing agency (the position, private/public, nonprofit/for profit, etc.), and the geographical location of the employment setting. The CDFS graduate is provided with a foundation for graduate work in a variety of social science and educational disciplines, including child/human development, family studies, developmental psychology, social work, public administration, and counseling.
### Suggested Curricula—Birth Through Pre-Kindergarten Early Childhood

<table>
<thead>
<tr>
<th>First year</th>
<th>Hrs.</th>
<th>Second year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>3</td>
<td>ENGL 102</td>
<td>3</td>
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<tr>
<td>MATH 121 or 124</td>
<td>3</td>
<td>Another Gr B Science</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 101 (F)</td>
<td>1</td>
<td>STAT 111</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 101</td>
<td>3</td>
<td>PET 384 or 400</td>
<td>2</td>
</tr>
<tr>
<td>SPED 304</td>
<td>3</td>
<td>CDFS 212</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101 &amp; 103</td>
<td>4</td>
<td>CDFS 210, 211</td>
<td>7</td>
</tr>
<tr>
<td>CDFS 110, 112</td>
<td>6</td>
<td>EDUC 200</td>
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<tr>
<td>Elective</td>
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<td>SPED 311</td>
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Obj. 3, 5, 8, or 9 ................................. 6

**Total** .............................................. **31**

<table>
<thead>
<tr>
<th>Third year</th>
<th>Hrs.</th>
<th>Fourth year</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>SPED 314 (Spr)</td>
<td>3</td>
<td>CDFDS 491 or SPED 319</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;I 414 or THET 461 or Art 103</td>
<td>3</td>
<td>CDFS 412, 413, 415</td>
<td>9</td>
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<tr>
<td>CDFS 316, 491A</td>
<td>6</td>
<td>SPED 316, 317</td>
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</tr>
<tr>
<td>C&amp;I 410, 411</td>
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<td>SPED 319 or CDFS 491</td>
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<td>RDNG</td>
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<td>SPED 360, 315</td>
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Courses to fill

Remaining Obj. ................................. 3

**Total** .............................................. **33**

### Suggested Curricula—Family and Youth Studies

<table>
<thead>
<tr>
<th>First year</th>
<th>Hrs.</th>
<th>Second year</th>
<th>Hrs.</th>
</tr>
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<tbody>
<tr>
<td>ENGL 101</td>
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<td>ENGL 102</td>
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<td>MATH 121 or 124</td>
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<td>UNIV 101 (F)</td>
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<td>STAT 111</td>
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</tr>
<tr>
<td>SOCA 101</td>
<td>3</td>
<td>CHPR 170</td>
<td>3</td>
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<tr>
<td>COMM 100 &amp; 102</td>
<td>3</td>
<td>HN&amp;F 171</td>
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</tr>
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<td>BIOL 101 &amp; 103</td>
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<td>SPA 270</td>
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<td>CDFS 210, 211</td>
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Obj. 3, 5, 8, or 9 ................................. 6

**Total** .............................................. **32**

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<td>BIOL 122</td>
<td>3</td>
<td>CDFS 412, 413, 415</td>
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<tr>
<td>CDFS 212, 316</td>
<td>6</td>
<td>CDFS 320 (F)</td>
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<tr>
<td>COMM 112</td>
<td>3</td>
<td>CDFS 491A (F)</td>
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<td>SOWK 105</td>
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<td><strong>Total</strong></td>
<td></td>
<td><strong>Total</strong> ................................. <strong>31</strong></td>
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</tr>
</tbody>
</table>

Courses to fill

Remaining Obj. ................................. 6

**Total** .............................................. **34**

Key: F = Fall    Spr = Spring    Obj. = GEC Objective
Speech Pathology and Audiology
Robert F. Orlikoff, Ph.D., Chair

Program Objectives
The Department of Speech Pathology and Audiology is committed to the preparation of students interested in graduate study and eventual careers in speech-language pathology or audiology. The pre-professional undergraduate program emphasizes education in the following: GEC; basic speech and hearing sciences; anatomy and physiology of the speech and hearing system; normal development and behavior in speech, hearing, and language; awareness of cultural diversity and its relationship to communication; and an introduction to communicative disorders.

Career Prospects
The professions of speech-language pathology and audiology are exciting fields wherein professionals provide services to individuals with communication disorders. The demand for certified practitioners is continually increasing; consequently, job prospects remain very good. The pre-professional undergraduate program and graduate study in either speech-language pathology or audiology enable graduates to seek employment in a variety of settings. Speech-language pathologists and audiologists are employed in schools, hospitals, rehabilitation centers, community clinics, physicians' offices, and private practice.

Pre-Speech Pathology and Audiology
Admission
Normally, students are first admitted to the pre-SPA program of study and matriculate as such during the freshman and sophomore years. Pre-SPA students are assigned an advisor in the Department of Speech Pathology and Audiology.

To qualify for admission, incoming freshmen must present an overall high school GPA of 3.0 or higher, 1050 or higher on the SAT, or 23 on the ACT.

Students who transfer into pre-SPA during the freshman or sophomore year from either another major at WVU or from another university must present a grade point average of 2.75 for all undergraduate coursework taken prior to the time of transfer.

It is possible that the minimum cumulative GPA for admission into the pre-SPA program, as well as the minimum cumulative GPA and SPA GPA to remain in and to graduate from the SPA program, will be raised from a 2.75 to a 3.00 by the time this catalog is printed. Therefore, students are advised to visit the SPA website at http://spa.wvu.edu/ to determine the most current GPA requirements that they will be required to maintain.

Requirements
Students are considered pre-SPA until they have met the requirements specified below and have applied and been accepted into the SPA degree program.
1. Completion of at least 58 academic hours. Specific requirements include partial completion of the General Education Curriculum (GEC), and others as listed below:
   a. Objective 1: ENGL 101 and 102.
   b. Objective 2: Completion of at least 13–14 academic hours. Must include: Lab course = BIOL 101 and 103 or BIOL 102 and 104 or PHYS 101; Math course = college algebra (MATH 126) or a higher-level course and STAT 211 or ECON 255; In addition to the lab course above, each student must select at least four additional academic hours from the following science courses:
      4 hr. courses (select at least one)
      BIOL 101 and 103; BIOL 102 and 104; BIOL 115; CHEM 111, 112, 115, 116; CS 101, 110; PHSC 111, 121; PHYS 101, 102, 111.
      or
      3 hr. courses (select at least two)
      BIOL 235, 337; HN&F 171; MDS 126.
   c. Objective 3: at least three academic hours completed in courses related to the past and its traditions.
2. Completion of SPA 200 with a minimum grade of B, completion of SPA 199, and completion of SPA 270. Students should consult the SPA website at http://spa.wvu.edu/ in order to determine if a minimum grade of B is required in SPA 270 in order to be admitted into the SPA program.

3. Overall GPA of 2.75. Students should consult the SPA website at http://spa.wvu.edu/ in order to determine if the cumulative GPA requirement has been raised to a 3.00. These requirements are subject to change. Interested students should contact the Department of Speech Pathology and Audiology for information on current requirements.

B.S. Degree Program in Speech Pathology and Audiology

Admission

After completing all pre-SPA requirements listed above, a student must apply for admission to the degree program by completing an application form obtained from the Department of Speech Pathology and Audiology in 805 Allen Hall. It is the student’s responsibility to obtain an application form and submit it to the Department of Speech Pathology and Audiology between the deadline dates of January 15 and February 15. No applications will be accepted after February 15. After the application has been reviewed and verified, the student will receive a letter summarizing the department’s admission decision. Students will be ranked according to their overall GPA for all undergraduate coursework. The 45 students with the highest GPA will be admitted to the B.S. degree program at the beginning of the junior year. Students who are not admitted must declare another major immediately and officially transfer to that department.

Following admission to the degree program, the student must continue to meet GPA standards set by the department in order to continue in the program and graduate with a degree in speech pathology and audiology.

Graduation Requirements

A total of 128 academic credit hours, including all SPA requirements, is required for the bachelor of science in speech pathology and audiology. The following are specific requirements:

1. Successful completion of the General Education Curriculum (GEC) including all pre-SPA required courses plus Statistics 211 or Economics 225 (this is a required course for SPA which meets the University mathematics skills component).

2. Successful completion of 17 hours of supporting area courses relating to natural sciences, normal/abnormal growth and development, and related issues.

3. Successful completion of a minimum of 56 hours of academic coursework in SPA.

4. Successful completion of minimum requirements in clinical practicum.

5. A cumulative GPA of 2.75 in all speech pathology and audiology courses and a cumulative GPA of 2.75 overall. Students should consult the SPA website at http://spa.wvu.edu/ to determine if the minimum cumulative GPA and the minimum GPA in all speech pathology and audiology courses has been raised from a 2.75 to a 3.00.

Teacher Education

Judy A. Abbott, Ph. D., Assistant Dean for Teacher Education

Five Year Teacher Education Program

Elizabeth A. Dooley, Ed.D., Chairperson, Department of Curriculum and Instruction/Literacy Studies

Sarah Steel, M. A., Program Coordinator, Five-Year Teacher Education Program
Program Purposes and Goals

The curricula for teacher education programs at WVU are the products of cooperative efforts of faculty, students, and practitioners. These groups have engaged in systematic efforts to develop teacher education programs consistent with the mission of the University, the mission of the College of Human Resources and Education, the requirements of the West Virginia Department of Education, and the recommendations of professional organizations and learned societies.

The goals of the WVU teacher education program describe the qualifications that represent the end result of teacher preparation. Graduates of the program should have these qualifications:

• Possess a commitment to and the skills for life-long learning.
• Be effective communicators.
• Recognize that teaching is a professional, moral, and ethical enterprise with well-developed ethical frameworks which facilitate effective teaching.
• Be a facilitator of learning for all students.
• Possess in-depth knowledge of both pedagogy and content, as well as an integrated understanding of these two important knowledge areas.
• Be reflective practitioners who can thoughtfully apply knowledge and experience to practice and critically examine choices.
• Be aware of and have respect for human diversity.
• Be liberally educated: value and integrate knowledge from a wide variety of fields, be creative and open to new ideas, and be able to act constructively in a world characterized by technological, cultural, and societal diversity and change.

The teacher education program is a five-year program culminating in two degrees which are awarded simultaneously; a baccalaureate degree in the content area and a master's degree in education. The program meets standards for teacher licensure in West Virginia.

Programs for Elementary Education

All students preparing to teach early and middle childhood must complete requirements for the multi-subjects K–6 program. They must also select at least one of the following specialization options.

Specializations for Grades 5-9
- French
- General science
- English
- Mathematics
- Social studies
- Spanish

Specializations for K-adult
- Special education, multi-categorical

Specializations for Early Childhood
- Birth through age four. Pre-kindergarten and kindergarten

Programs for Secondary Education, Grades 5–Adult and 9–Adult

All students preparing to teach early and middle childhood must complete requirements for the multi-subjects K–6 program. They must also select at least one of the following specialization options.

Specializations in Grades 5–adult
- English
- French
- General science
- German
- Mathematics
- Social studies
- Spanish
Specializations in Grades 9–adult

- Biology
- Chemistry
- Journalism (taken as a second specialization)
- Physics

Admission to Pre-Education

High school students interested in teaching careers should seek admission to the pre-education program when applying to the University. Students may also seek admission to pre-education at any point between entry and successful completion of 59 hours of approved University coursework. To be admitted to pre-education, a student must have an ACT score of 23, an SAT math and verbal combined score of 1030, or a high school GPA of 3.0. Students transferring into teacher education must also have an acceptable University GPA. Since formal admission into teacher education cannot occur until 59 hours have been completed, those students admitted to education are designated pre-education students; the general admission requirements for teacher education are described below.

Admission to Teacher Education

Students are admitted to teacher education only in the spring semester. Admissions to teacher education are limited. Within both elementary and secondary education, enrollment is limited to the capacities of specific content areas. Pre-education students are advised to consult with advisors regarding the availability of the specializations in which they are most interested.

General Requirements for Admission

To be eligible for consideration for admission to teacher education, a student must do the following:

- Complete a minimum of 59 hours of approved University coursework.
- Achieve a 2.75 grade point average (GPA) computed on all approved University work attempted, and a 3.0 GPA with no grade below a C on all work completed in professional education.
- Achieve an acceptable level of performance as designated by the State Department of Education and/or the College of Human Resources and Education on the Praxis Pre-Professional Skills Tests.
- Submit a written portfolio which includes (a) a statement that all general requirements for admission into teacher education have been met, (b) letters of recommendation from faculty in education, (c) letters of recommendation from faculty in the subject area one wishes to teach, (d) evaluation from volunteer experience, (e) passing scores on the PPST, and (f) transcript.
- Complete successfully EDUC 200 and all its prerequisites.
- Complete an approved volunteer or work experience with children or youth.

Admission Process

Applications for admission to teacher education are accepted and reviewed in the spring semester. Students are normally admitted to teacher education in the fourth semester. The credentials of qualified pre-education students from WVU and WVU Potomac State College will be reviewed by the admissions committee, and students are admitted to the specialization of their choice in order of decreasing portfolio scores until the specialization reaches its capacity. If space is not available in the preferred specialization, students may elect to be considered for another specialization or compete for admission in the following year. Minority students may be given special consideration for admission to the major.

Remediation Options

Students who do not meet the skill-proficiency requirements listed under General Requirements for Admission may avail themselves of the numerous remediation options on campus, including the Reading and Study Skills Laboratory and the Teaching and Learning Technologies Center.
General Retention Requirements
Teacher education students must maintain a 2.75 grade point average in all hours attempted, and 2.50 in area(s) of specialization, and with no grade below a C on all work completed in professional education. Students must achieve an acceptable score on each applicable ETS Praxis subject area test and complete all undergraduate coursework by the end of the eighth semester. As applicable, students may fulfill any additional requirements within specific program areas.

Work Taken at Other Institutions
Required professional education courses must ordinarily be taken at WVU. Students who wish to take required courses at other NCATE accredited institutions must have their courses approved by the department chairperson before registering at another institution.

Graduate/Certification Requirements
To be eligible for recommendation for the master of arts in elementary or secondary education, a student must do the following:
- Comply with the general regulations of the University concerning entrance, advanced standing, classification, examination, grades, grade points, etc.
- Complete required courses and the minimum hours of approved courses in education.
- Adhere to the patterns prescribed in completing the subject specialization(s).
- Complete requirements for the approved baccalaureate in subject specialization (for prospective secondary teachers) or multidisciplinary studies (for prospective elementary teachers and secondary science teachers).
- Present a minimum of 158 hours of approved college credit. (Thirty of these must be approved graduate hours.) A general average of 2.75 as described under General Requirements for Professional Certification must be attained for the undergraduate hours with a GPA of at least 3.0 in the graduate hours.
- Submit an acceptable professional portfolio.

General Requirements for Professional Certification
Individual candidates apply for professional certification. To teach in the public schools of West Virginia, one must hold a professional certificate issued by the West Virginia Department of Education. To be eligible to receive a professional certificate, the WVU applicant must have done the following:
- Met the minimum State requirements.
- Met the University degree requirements.
- Compiled at least 45 hours of upper-division work and 30 approved graduate hours (WVU standards).
- Achieved a grade point average of at least 2.75 on the total of college credits earned, on the hours earned in professional education, and in each subject specialization, on the hours earned in professional education, and 2.5 in each subject specialization.
- Demonstrated competence in supervised practica and internship.
- Complied with the West Virginia Board of Education regulations for Teacher Certification.
- Been recommended for certification by the dean of the College of Human Resources and Education.
All candidates for professional certification in West Virginia must be United States citizens.

Reciprocal Certification Agreements
West Virginia, at the time of this publication, has reciprocal agreements with certain other states for teacher certification. Inquiries about reciprocity should be directed to the Center for Student Advising and Records, 710 Allen Hall.
Calculation of Grade Point Averages

The West Virginia State Department of Education system of calculating grade point averages for certification purposes differs in some respects from the WVU system. For certification, all coursework attempted at WVU and at other institutions of collegiate rank will be considered. If a student earns a grade of D, F, or U in any course taken no later than the term when he or she has attempted a total of 60 hours, and the student repeats this course, the second grade earned will be used in determining the grade point average. The first grade will be disregarded.

The teacher education program uses the West Virginia State Department of Education system of calculating grade point averages only for admission to teacher education programs and professional internships, and for assessing teaching field and education averages. Academic performance and eligibility for graduation are assessed by the system used by WVU and other institutions governed by the West Virginia Higher Education Policy Commission.

Professional Education Sequence
Teacher Education Program

All students enrolled in the program will complete the following professional education sequence as part of the five-year program.

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>One</td>
<td>EDUC 100 Education Colloquium*</td>
<td>Volunteering requirement**</td>
</tr>
<tr>
<td>Two</td>
<td>EDUC 100* Volunteering Req. **</td>
<td>EDUC 200 Professional Inquiry</td>
</tr>
<tr>
<td>Three</td>
<td>EDUC 301 Learning I</td>
<td>EDUC 312 Practicum II</td>
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<tr>
<td></td>
<td>EDUC 311 Practicum I</td>
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<tr>
<td>Four</td>
<td>EDUC 400 Instruct. Design &amp; Eval.</td>
<td>EDUC 401 Managing &amp; Organizing Learning Environments</td>
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<td></td>
<td>EDUC 410 Practicum III</td>
<td>EDUC 411 Practicum IV</td>
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<tr>
<td>Five</td>
<td>EDUC 612 Prof. internship****</td>
<td>Prof. development semester***</td>
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<tr>
<td></td>
<td>EDUC 602 Prof. Id.: Teacher as Leader</td>
<td>EDUC 601 Context of Education</td>
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<td>EDUC 600 Teacher as Researcher</td>
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<td>EDUC 687 Instructional practicum</td>
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</tbody>
</table>

*EDUC 100 is a one-hour course which is to be taken in one of these semesters only. (All freshmen admitted directly to pre-education must take this in the first semester.)

**To be admitted to the major, students must document that they have had experience volunteering/working with children. This requirement must be completed during any semester or combination of semesters or summers prior to the professional inquiry course.

***In addition to the pedagogy courses listed, students also will take a capstone course in their teaching discipline and an elective graduate course during this semester.

****Thirty hours of graduate credit are earned during year five.

Other coursework in pedagogy, content, and liberal studies also is prescribed. Students accepted into pre-education will be provided with specific program information as part of the content of EDUC 100 Education Colloquium which is taken in the first year or in the fall semester of the second year. Students may also contact the Office of Teacher Education, (304) 293-0541, or the Center for Student Advising and Records, (304) 293-3637, for information.

Elementary Education

Students preparing to be elementary teachers earn a baccalaureate in multidisciplinary studies and a master’s degree in elementary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the disciplines to be taught, and pedagogy. Graduates are eligible for West Virginia licenses to teach multi-subjects in grades K-6 and in their specialization. Students select from the following specializations: French 5–9, Spanish 5–9, math 5–9, general science 5–9, social studies 5–9, English/language arts 5–9, early childhood (pre-kindergarten to kindergarten), or special education K-adult. Because of the complexity of dual-degree licensure programs,
pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 710 Allen Hall. Please contact the Center for Student Advising and Records, (304) 293-3637, for more information about this program and its requirements.

**Secondary English Education**

Students preparing to be secondary English teachers earn a baccalaureate in English and a master’s degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Graduates are eligible for West Virginia licenses to teach English/language arts in grades five–adult. Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 710 Allen Hall. Please contact the Center for Student Advising and Records, (304) 293-3637, for more information about this program and its requirements.

**Secondary Foreign Language Education**

Students preparing to be secondary foreign language teachers of Spanish, French, or German earn a baccalaureate in foreign languages with a major in the appropriate language(s) and a master’s degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Graduates are eligible for West Virginia licenses to teach Spanish in grades five–adult, French in grades five–adult, and German in grades five–adult. (German must be combined with a second field.) Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 710 Allen Hall. Contact the Center for Student Advising and Records, (304) 293-3637, for more information about this program and its requirements.

**Secondary Mathematics Education**

Students preparing to be secondary mathematics teachers earn a baccalaureate in mathematics and a master’s degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Graduates are eligible for West Virginia licenses to teach mathematics in grades five–adult. Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 710 Allen Hall. Please contact the Center for Student Advising and Records, (304) 293-3637, for more information about this program and its requirements.

**Secondary Science Education**

Students preparing to be secondary science teachers earn a baccalaureate in multidisciplinary studies and a master’s degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Prospective science teachers must combine two of the following options: biology nine–adult, chemistry nine–adult, physics nine–adult, or general science five–adult. Graduates are eligible for the appropriate West Virginia license to teach science. Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 710 Allen Hall. Please contact the Center for Student Advising and Records, (304) 293-3637, for more information about this program and its requirements.

**Secondary Social Studies Education**

Students preparing to be secondary social studies teachers earn a degree in interdepartmental studies with a major in social studies and a master’s degree in secondary education. The degrees are awarded simultaneously at the end of a five-year program which intertwines the study of liberal arts, the discipline to be taught, and pedagogy. Graduates are eligible for West Virginia licenses to teach social studies in grades five–adult. Because of the complexity of dual-degree licensure programs, pre-teacher education and teacher education students are advised in the HR&E Advising Center located in 710 Allen Hall. Contact the Center for Student Advising and Records, (304) 293-3637, for more information about this program and its requirements.
Degree Offered
Bachelor of Science in Physical Education

Nature of Program
Students in physical education, athletic coaching education, athletic training, sport and exercise psychology, and sport management examine the relationship of play, games, sport, athletics, fitness, and dance to our culture and cultures throughout the world. Their preparation includes the acquisition of knowledge and skills from a vast array of movement activities in addition to an understanding of associated physiological, biomechanical, sociological, psychological, historical, philosophical, and pedagogical principles. Preparation in athletic training is designed to enable students to prevent and treat injuries related to athletic competition.

Graduates in physical education with teaching certification are generally employed as elementary or secondary health and/or physical education teachers and athletic coaches. Graduates in sport and exercise psychology and sport management are employed with professional and collegiate sport enterprises, fitness centers, recreation programs, sporting goods stores, or commercial sporting goods manufacturers, or pursue graduate training in sport and exercise psychology. Athletic coaching education graduates are employed as coaches, strength and conditioning specialists, and work in the health and fitness industry.

Programs
Baccalaureate programs offered in the College of Physical Activity and Sport Sciences (CPASS) include athletic training, athletic coaching education, physical education/teacher education, sport management, and sport and exercise psychology. The College of Physical Activity and Sport Sciences has available to students minors in personal training and group fitness, sport and exercise psychology, aquatic facility management, group fitness and adventure sports leadership to any student.

Facilities
The college’s facilities include the gymnasium, dance studio, and swimming pool in E. Moore Hall; a gymnasium in Stansbury Hall; bowling lanes and game rooms in the Mountainlair; indoor track, sports area, weight training room, martial arts room, and rifle range in the Shell Building; outdoor areas including the stadium, tennis courts, soccer and field hockey fields, and outdoor track; and the Natatorium with its pool and diving well.

The Coliseum contains the Ray O. Duncan Advising Center Room, technology classrooms and seminar rooms, a large gymnasium, a dance studio, and faculty offices. Additional faculty and staff offices are in E. Moore Hall, Stansbury Hall, the Natatorium, and the Shell Building.

Credit Load Per Semester
The minimum workload per semester for a full-time student is 12 hours and the maximum workload per semester is 20 hours. However, an advisor may register a student as a part-time student if fewer than 12 hours are required to meet all requirements for the bachelor’s degree. Other exceptions to these regulations may be requested by petitioning the Committee on Academic Standards.
Requirements for Degrees

- All students must complete general education curriculum required courses and UNIV 101.
- Teacher Certification Curriculum: Students in teacher certification programs must complete a group of educationally related courses and other prescribed work.
- Students must complete the major requirements as determined by the appropriate department.
- Students must complete a minimum of 128 hours.
- A minimum grade point average of 2.0 is required for graduation. Those in teacher certification must have a minimum grade point average of 2.5.

Bachelor of Science in Physical Education

Opportunities are offered for you to pursue certification in teaching in physical education and health certification.

Teacher Certification Program in Physical Education

The required courses in physical education/teacher education are:

Completion of General Education Curriculum
GEC #1 ENGL 101 and 102 (6 hrs.)
GEC #2 BIOL 101, 103 (Lab), CS 101, STAT 111 and MATH 121 or 126 (13–15 hrs.)
GEC #3 Student’s Choice (3 hrs.)
GEC #4 PSYCH 101 and HN&F 171. Both of these classes are required for WV certification.
GEC #5 Student’s Choice (3 hrs.)
GEC #6 UNIV 101 or SEP 170 (athletes only) and PSYC 241 (4 hrs.)
GEC #7 SEP 271 or another 3 hr. course (3 hrs.)
GEC #8 Student’s Choice (3 hrs.)
GEC #9 Student’s Choice (3 hrs.)

Probation:
PET 124, 125, 167, 175, 206, 276
Professional:
Activities:
PET 324, 338, 340, 341, 342, 344, 351, 354, 356, 358, 448, 452, 453, 460

Health Certification Community Health Promotion:
CHPR 170, 172, 271, 250, 301, 302, 305, 320, 400
Physiology: EXPH 365

Note: Application to the program must be submitted and admission is competitive.

Recommendation for Teacher Certification

Prospective teachers who intend to apply for teacher certification in West Virginia must satisfy the requirements in physical education and professional education. Teacher certification in physical education is provided for grades Pre-K through adult. Community health promotion certifies students to teach health in grades 5–12. Students are required to pass the Praxis I (Pre-Professional Skills Test) prior to program admission, and the Praxis II in physical education, the Praxis II in health prior to student teaching, and the Praxis III (Principles of Learning and Teaching 7–12) prior to certification.

Athletic Coaching Education

The required courses in athletic coaching education are:

Completion of General Education Curriculum
GEC #1 ENGL 101 and 102 (6 hrs.)
GEC #2 MATH 121 or 126 (3 hrs); Science with lab—BIOL 101/103 (4 hrs.);
CS 101 (4 hrs.) and 3 additional hrs. (student choice).
GEC #3 Student’s Choice (3 hrs.)
GEC #4 CDFS 110 (3 hrs.)
GEC #5 Student’s Choice (3 hrs.)
GEC #6 UNIV 101 or SEP 170 (athletes only) and SEP 272 (4 hrs.)
GEC #7 SEP 271 (3 hrs.)
GEC #8 Student’s Choice (3 hrs.)
GEC #9 Student’s Choice (3 hrs.)

Departmental Requirements: ACE 100, 105 (or equivalent HNF course), 106, 168, 256, 330
EXPH 364, 365, ACE 103, 357–367, 493A (choose any three), ACE 368, ATTR 121, CHPR 172 or First Aid and CPR Certification; SM 426, SEP 271 and 272 (GEC #6 and #7).

Sport Skills: PE 165 Conditioning and PE 164 Weight Training, and select four one-hour courses from the many PE courses offered each semester.
Practicum: ACE 491 (12 hrs.) and 494
Writing Requirement: ACE 330

Note: Application to the program must be submitted and admission is competitive. Effective Fall 2009 a 2.5 GPA and formal application will be required for admission.

Sport and Exercise Psychology
The required courses in sport and exercise psychology are:
Completion of General Education Curriculum
GEC #1 ENGL 101 and 102 (6 hrs.)
GEC #2 MATH 121 or 126 (3 hrs.); Science with lab—BIOL 102/105 (4 hrs.), and 7 additional hrs. in GEC #2
GEC #3 Student’s Choice (3 hrs.)
GEC #4 SEP 373 (3 hrs.)
GEC #5 Student’s Choice (3 hrs.)
GEC #6 UNIV 101 or SEP 170 (athletes only) and SEP 272 (4 hrs.)
GEC #7 SEP 271 (3 hrs.)
GEC #8 Student’s Choice (3 hrs.)
GEC #9 Student’s Choice (3 hrs.)

Applied Area Requirements: SEP 210 (4 hrs.), SEP 271 and 272, 373 (this will also count in GEC #4, GEC #6 and GEC #7, SEP 374, 383, 385, PET 175, ATTR 121, EXPH 364, 365 and COUN 303. One of the following courses: ACE 256, PET 206 or ACE 493A and one of the following courses: SEP 493 Sport Psychology Seminar or SEP 420.

Foundation Requirements: PSYC 101, 241, 251, 281, one three-hour psychology elective 200–300 level; SOCA 101, one three-hour sociology elective 200–300 level; 16–17 elective hours.

Sport Management
The required courses in sport management are:
Completion of General Education Curriculum
GEC #1 ENGL 101 and 102 (6 hrs.)
GEC #2 MATH 121 or 126 (3 hrs.); Science with lab—BIOL 101/103 or GEOL 101/102 (4 hrs.); CS 101; and 3 additional hrs. in GEC #2
GEC #3 Student’s Choice (3 hrs.)
GEC #4 COMM 100 and 102 or 104 (3 hrs.)
GEC #5 Student’s Choice (3 hrs.)
GEC #6 UNIV 101 or SEP 170 (athletes only) and SEP 272 (4 hrs.)
GEC #7 SEP 271 (3 hrs.)
GEC #8 Student’s Choice (3 hrs.)
GEC #9 Student’s Choice (3 hrs.)

Foundation Requirements: ACCT 201, ECON 201, CS 101, COMM 306, BUSA 320, 330, JRL 101, PR 215; six hrs. of approved electives.

Note: All students enrolled in sport management and sport and exercise psychology programs must earn a grade of C or better in applied and foundation requirements. A minimum of 2.5 GPA and formal application are required for admission.
Physical Education Basic Instruction

Physical education classes are open to all students of the University. A wide variety of sport, aquatic, dance, gymnastic, fitness, martial arts, outdoor adventure, and lifetime sport activities are offered. The aims of the physical education basic instruction program are to develop:

- An appreciation of the body and its capacity to move.
- Movement skills of games, sport, dance, and aquatics.
- An appreciation of the value of continued activity throughout all age periods in an individual’s life.
- An understanding of the cultural significance of sport and dance.
- Concepts of the physiological characteristics of sport and movement.

All courses numbered PE 101–293 are at a beginner’s level unless otherwise specified. Repeating an activity is not allowed except at a more advanced level.

Athletic Training

Application Requirements

An individual desiring to become an athletic training student must first spend time in the prospective athletic training student (PATS) program by enrolling in ATTR 101. In order to gain a basic working knowledge of the athletic training profession, the student must observe in the athletic training rooms to see if this is the route that is desired. The application process includes:

1. The student must have successfully completed ATTR 101 and the PATS program.
2. A cumulative GPA of 2.75 or better.
3. Two reference evaluation forms must be submitted.
4. Transcripts from other institutions attended must be submitted.
5. An application to the program must be submitted.
6. Students must complete a minimum of 75 observational hours in the WVU athletic training rooms under the direct supervision of a certified athletic trainer.
7. Currently enrolled in or successful completion of all prerequisite courses prior to making application to the program (BIOL 101 and 103, BIOL 102 and 104; ATTR 101, 121, 122; ENGL 101).
8. Students must have a C grade or better in BIOL 101 and 103, BIOL 102 and 104; ENGL 101; and a grade of B or better in ATTR 101, 121 and 122 to be considered a viable candidate.

Each student applying to the program will be interviewed in the presence of all full-time faculty/staff athletic trainers and educational graduate assistants. Selections for admission into the program are based on interviews and other criteria. These criteria include academic performance, reference evaluation forms, outside experiences, WVU experiences, and a written case study. Students are eligible to apply to the athletic training program during the spring semester of their first year at WVU. An average of 15 students are accepted annually; however, the accepted class size may be greater or less than 15 students. Technical standards have been established by the WVU Athletic Training Education Program. These standards are the essential qualities considered necessary for students admitted to this program to achieve the knowledge, skills, and competencies of an entry-level athletic trainer, as well as meet the expectations of the program’s accrediting agency (Commission on Accreditation of Athletic Training Education [CAATE]). In the event a student is unable to fulfill these technical standards, with or without reasonable accommodation, the student will not be admitted into the program. Please visit our athletic training Website to view these standards: http://www.wvu.edu/~physed/attrain/wvattr-1.htm.

Once accepted into the athletic training program, the student will have a minimum of three years to complete both the clinical and didactic portion of the program. The clinical component of the athletic training program requires that all students demonstrate mastery of the National Athletic Trainers’ Association (NATA) athletic training educational competencies.
The required courses in athletic training are:
Completion of General Education Curriculum
GEC #1 ENGL 101 and 102 (6 hrs.)
GEC #2 BIOL 101/103, BIOL 102/104, CHEM 115, PHYS 101, MATH 126 or MATH 128
GEC #3 Student’s Choice (3 hrs.)
GEC #4 HNF 171 (3 hrs.)
GEC #5 Student’s Choice (3 hrs.)
GEC #6 UNIV 101 or SEP 170 (athletes only) and PSYC 101 (4 hrs.)
GEC #7 Student’s Choice (3 hrs.)
GEC #8 Student’s Choice (3 hrs.)
GEC #9 Student’s Choice (3 hrs.)
The didactic portion consists of the following classes: ATTR 101, 121, 122, 218, 219, 220, 221, 222, 281, 282, 301, 302, 321, 323, 324, 325, 326, 327, 332, 403, 404, 424, 426.
Remaining coursework required: CHPR 170, 172, BIOL 235, SEP 383, EXPH 365, 368 and PATH 300.
Upon graduating from the athletic training major, students are eligible to sit for the Board of Certification (BOC) examination. The successful completion of the BOC examination provides job opportunities at the high school, college, professional, clinical, or corporate levels. Students may also pursue additional education by obtaining a master's degree in athletic training or a related field of study.
 Degrees Offered
 Bachelor of Science
 Bachelor of Science in Agriculture
 Bachelor of Science in Design and Merchandising
 Bachelor of Science in Forestry
 Bachelor of Science in Landscape Architecture
 Bachelor of Science in Recreation

 Majors
 The Davis College of Agriculture, Forestry, and Consumer Sciences is organized into five divisions: Animal and Nutritional Sciences; Design and Merchandising; Forestry and Natural Resources; Plant and Soil Sciences; and Resource Management. There are 21 major areas of study in which undergraduate students can earn a baccalaureate degree, plus a college-wide pre-major (pre-agriculture, forestry, and consumer sciences). There also is a college-wide multidisciplinary studies major in agriculture, forestry, and consumer sciences. These majors are listed below by the division in which they are taught. More detailed information on each major is provided in the appropriate division’s section on the following pages.

 Division of Animal and Nutritional Sciences
 Animal and Nutritional Sciences; Biochemistry; Human Nutrition and Foods

 Division of Design and Merchandising
 Design Studies; Fashion Design and Merchandising; Interior Design

 Division of Forestry and Natural Resources
 Forest Resources Management; Recreation, Parks, and Tourism Resources; Wildlife and Fisheries Resources; Wood Science and Technology

 Division of Plant and Soil Sciences
 Agroecology; Agronomy; Applied and Environmental Microbiology; Environmental Protection; Horticulture; Soil Science

 Division of Resource Management
 Agribusiness Management and Rural Development; Agricultural and Extension Education; Environmental and Natural Resource Economics; Landscape Architecture

 Minors
 There are currently 17 approved minors in the Davis College. Minors can be combined with major fields to broaden or further focus the student’s academic studies. In addition, three minors can be combined in a multidisciplinary studies (MDS) major. You can earn an MDS degree in the Davis College or in other WVU colleges. The Davis College minors include:
Agribusiness Management
Applied and Environmental Microbiology
Aboriculture
Conservation Ecology
Environmental Economics
Environmental Protection
Equine Management
Family and Consumer Sciences
Food Science and Technology
Horticulture
Landscape Studies
Pest Management
Recreation, Parks, and Tourism Resources
Rural Community Development
Soil Science
Wildlife and Fisheries Resources
Wood Science and Technology

**Nature of Program**

The Davis College offers students career paths which are exciting and rewarding. Through our diverse academic programs, students and faculty team up to discover agricultural practices that increase yields while improving the environment, produce bio-based energy alternatives, create more nutritious and flavorful foods, restore degraded ecosystems, conserve forests and natural resources, and design both built and natural environments. Graduates of the Davis College pursue scientific and management careers that foster the wise management, utilization, and conservation of our soils, water, forests, wildlife, domestic animals, food, fiber, and living spaces.

Davis College student learning communities help students adjust to their major and get to know their fellow students and professors. Distinguished faculty share their knowledge through hands-on learning in the field, classroom, and lab, and through academic advising. In the Davis College, we are committed to helping students succeed through a strong academic support system. Whether students are interested in animals, design, the environment, biosciences, or food and health, the Davis College is the perfect place for academic and personal growth.

**Accredited Programs**

The following programs within the college are accredited by nationally and/or internationally recognized organizations: landscape architecture by the Society of Landscape Architecture; forest resource management by the Society of American Foresters; wood science and technology by the Society of Wood Science and Technology; recreation and parks management by the National Recreation and Parks Association; agricultural and extension education by the National Council for Accreditation of Teacher Education; interior design by the Foundation for Interior Design Education Research; and the didactic undergraduate program in dietetics by the American Dietetic Association.

**Honorary and Student Organizations**

Students are encouraged to become active in honoraries and student professional associations and organizations. Those with a sufficiently high grade point average may be selected for membership in Phi Kappa Phi, the University-wide honorary recognizing excellence in scholarship. Within the college, outstanding students may be chosen for membership in Alpha Tau Alpha, Gamma Sigma Delta, Phi Upsilon Omicron, or Alpha Zeta. There are over 20 student clubs and organizations sponsored by the college.

**Admission**

The general high school credit requirements for admission into the Davis College are the same as those required by the University (see page 16 of this catalog).

All students are admitted directly to the college and are assigned a faculty advisor.
Transfer Credits
Students transferring into the college from one- or two-year technical programs, or from unaccredited programs, may be required to demonstrate proficiency for any required course offered by the college for which transfer credit is sought. All credits are accepted subject to the regulations of the Office of Admissions and Records.

Honors
Outstanding academic achievement is recognized by awarding President’s List and Dean’s List status to students who obtain a 4.0 grade point average or 3.5 GPA, respectively. Students must be enrolled full-time to be eligible for such recognition.

Students may receive summa cum laude (with highest honors, a minimum 3.8 GPA); magna cum laude (with high honors, a minimum 3.6 GPA to less than a 3.8 grade point average); or cum laude (with honors, a minimum 3.4 GPA to less than a 3.6 GPA) recognition upon graduation. These guidelines are set by the University.

Applications for Graduation
All candidates for the bachelor’s degree must fill out an application for graduation in room 1002 of the Agricultural Sciences Building at the beginning of the semester in which they expect to receive their degrees.

Academic Warning/Suspension/Probation
A student with a grade point average less than 2.0 at the end of a period of enrollment may be placed on academic warning. Students on academic warning shall be limited to a maximum of 15 credit hours per semester and are required to discuss their academic process with their advisor and/or associate dean’s office. Students shall be notified in writing of their academic status by the associate dean.

A student whose GPA is below that allowed by WVU at the end of a period of enrollment shall be suspended by the Davis College of Agriculture, Forestry, and Consumer Sciences and notified in writing by the associate dean. Students may be reinstated:
1. By enrollment for the summer session to eliminate the grade point deficiency, or
2. After a minimum of one suspension semester, petition the Academic Standards Committee for reinstatement, or
3. After one calendar year, a student may enroll in the college, school, or program of his or her choice but under conditions of probation as set forth by the college, school, or program where the student is enrolled.

Students reinstated will be placed on academic probation. They may enroll for a maximum of 15 credit hours and must maintain a minimum 2.25 GPA for each semester enrolled. The Academic Standards Committee has the option of imposing special conditions for students on academic probation.

College-Wide Majors
There is a college-wide pre-major for the undecided student who enrolls in the Davis College and wishes to explore different academic areas before choosing a major from which to graduate. The Davis College offers a multidisciplinary studies major which requires completion of at least two minors in the Davis College and allows flexibility in defining an academic program which fits the student’s career goals.

Pre-Agriculture, Forestry, and Consumer Sciences Major
The pre-agriculture forestry and consumer sciences (PAFCS) major in the Davis College is for the student who is undecided as to his or her career path and would like to explore different academic areas in the Davis College or other WVU colleges before choosing a major. A student cannot complete graduation requirements in the PAFCS major.

Students who meet WVU admissions requirements may be accepted directly into the Davis College pre-agriculture, forestry, and consumer sciences major. Students are advised by the Davis College’s Associate Dean for Academic Affairs Office or a faculty advisor designated by the associate dean’s office.
Freshmen-level General Education Curriculum courses are combined with introductory courses from majors in which the student may have an interest. PAFCS students are encouraged to talk with professors throughout the Davis College to gain knowledge of the many career options in our college.

There is no specific time when it is appropriate to choose a major since different majors have widely varying course requirements. Students can transfer into many majors at the end of the sophomore year and graduate in four years. However, some majors are more tightly structured and require initiation of studies in the freshman year to complete studies four years. The PAFCS student's faculty advisor will provide him or her with guidance on major requirements throughout WVU.

**Multidisciplinary Studies**

The multidisciplinary studies (MDS) major in Agriculture, Forestry, and Consumer Sciences is a flexible degree program which allows students and their advisors to tailor a set of courses which meets the student’s interests and career plans. The major was developed in response to increasing demands from employers and students for broad-based educational programs which prepare students for our rapidly changing society and economies. There are an increasing number of students who wish to tailor their education to their career interests without being constrained by traditional academic majors. The Davis College program is distinct from other WVU colleges and is oriented toward students who want to focus their studies on the academic areas of the college.

Students who meet university admissions requirements may be accepted directly into the Davis College multidisciplinary studies major. Students may be admitted as freshmen or transfer students.

There is no requirement for a minimum number of course hours to be completed at WVU before admission to the Davis College MDS program. To earn a bachelor's degree, students complete 128 credit hours including WVU's General Education Curriculum and the requirements for three minors, at least two of which must be minors in the Davis College. The student is required to complete a capstone course under the direction of his or her advisor.

The student, along with their faculty advisor from the Davis College, chooses three minors and a program of elective courses which fits the student’s focus and career objectives. Students are not limited to courses in a particular area, but will have the opportunity to develop expertise in several areas with an interdisciplinary focus.

**Division of Animal and Nutritional Sciences**

Paul E. Lewis, Ph.D., Director

**Programs of Study**

As a student in this division, you may pursue a degree which enables you to do graduate work, go into commercial agriculture, or work for federal or state agencies, the food processing industry, or other areas of food and agriculture. The pre-professional program meets requirements for entry into professional school programs of veterinary and human medicine, allied health professions, and the registered dietetics program. Many pre-professional students obtain their bachelor’s degrees after three years of pre-professional study and one year of professional study.

Courses that you will take in the division include animal production, biochemistry, breeding and genetics, food science, animal and human nutrition, pathology, and physiology. To assist in equipping yourself for one of the many varied careers in animal agriculture, you will take supporting courses in other divisions of the Davis College of Agriculture, Forestry, and Consumer Sciences and in other colleges. The programs are flexible and permit you to obtain a broad background and take sufficient courses in one area during the last two years to prepare you for your first post graduate career choice.
Degrees Offered

Bachelor of Science in Agriculture
Major: Animal and Nutritional Sciences

Bachelor of Science
Majors: Animal and Nutritional Sciences, Agricultural Biochemistry, and Human Nutrition and Foods

Bachelor of Science in Agriculture: Animal and Nutritional Sciences Major

This curriculum will provide you with the opportunity to acquire the necessary background in agricultural economics, agronomy, breeding, nutrition, and physiology to prepare for a career in livestock, dairy, or poultry production and management, human nutrition and food processing, and technology.

Curriculum Requirements

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition and Rhetoric (GEC objective #1) .................................................. 6</td>
</tr>
<tr>
<td>GEC Requirements (objectives 3–9) ........................................................................... 22</td>
</tr>
<tr>
<td>Natural Sciences (GEC objective #2) (must elect a minimum of eight credits in biology; eight credits in chemistry; three credits in college algebra or equivalent) ........................................ 24</td>
</tr>
<tr>
<td>Courses in Agriculture ................................................................................................ 45</td>
</tr>
<tr>
<td>Elect a minimum of a three-credit course, excluding Assigned Topics, in each of the following categories:</td>
</tr>
<tr>
<td>1. Animal science</td>
</tr>
<tr>
<td>2. Plant science</td>
</tr>
<tr>
<td>3. Soil science</td>
</tr>
<tr>
<td>4. Agricultural economics</td>
</tr>
<tr>
<td>Elect additional courses to obtain a total of 45 hours in the college.</td>
</tr>
<tr>
<td>Free Electives .............................................................................................................. 31</td>
</tr>
<tr>
<td>Total .......................................................................................................................... 128</td>
</tr>
</tbody>
</table>

Bachelor of Science: Animal and Nutritional Sciences Major

The curriculum in science, with its flexible design, provides you with the opportunity to acquire the necessary background in agricultural biochemistry, chemistry, mathematics, physics, and modern concepts of biology in preparation for professional schools of veterinary medicine, human medicine, dentistry, optometry, pharmacy, or graduate study in such fields as agricultural biochemistry, animal breeding, animal physiology, and nutrition. Selection of individual courses will be your responsibility in consultation with an advisor.

Curriculum Requirements

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition and Rhetoric ................................................................................ 6</td>
</tr>
<tr>
<td>(or conformity with University English requirements) ..................................................</td>
</tr>
<tr>
<td>GEC Requirements (objectives 3–9) ........................................................................... 22</td>
</tr>
<tr>
<td>Natural Sciences (GEC objective #2) (A minimum of two courses in each of biology, chemistry, physics, and calculus is required. You may substitute advanced chemistry courses for calculus to meet degree requirements. This ordinarily means organic chemistry and/or biochemistry.) ........................................ 40</td>
</tr>
<tr>
<td>Courses in Agriculture ................................................................................................ 24</td>
</tr>
<tr>
<td>Free Electives .............................................................................................................. 36</td>
</tr>
<tr>
<td>Total .......................................................................................................................... 128</td>
</tr>
</tbody>
</table>

Bachelor of Science: Agricultural Biochemistry Major

The curriculum in biochemistry prepares you for careers requiring a strong background in basic principles of the physical and life sciences. Students completing a biochemistry major are prepared for professional employment in the expanding fields of agricultural and
environmental sciences, the chemical industry, health-related industries, and biotechnology-based industries. The curriculum provides you with the interdisciplinary background in biochemistry, biology, chemistry, mathematics, physics, and molecular biology necessary as preparation for professional schools of human and veterinary medicine, dentistry, optometry, and pharmacy. It also provides strong preparation for graduate study in fields such as animal and plant agriculture, biochemistry, biology, biotechnology, chemistry, food science, nutrition, and physiology.

**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101 &amp; 102–GEC Objective 1</td>
<td>6</td>
</tr>
<tr>
<td>GEC Requirements (objectives 3–9)</td>
<td>22</td>
</tr>
<tr>
<td>Biochemistry Core Curriculum</td>
<td>59</td>
</tr>
<tr>
<td>Orientation to Biochemistry</td>
<td>1</td>
</tr>
<tr>
<td>Math 155 and 156</td>
<td>8</td>
</tr>
<tr>
<td>Physics 101 and 102, or Physics 111 and 112</td>
<td>8</td>
</tr>
<tr>
<td>Biology 115, 117, 219, and 310</td>
<td>18</td>
</tr>
<tr>
<td>Concentration Area</td>
<td>30</td>
</tr>
<tr>
<td>Electives</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>128</td>
</tr>
</tbody>
</table>

**Bachelor of Science: Human Nutrition and Foods Major**

This is a nationally accredited four-year curriculum that meets the academic requirements for membership in the American Dietetic Association and leads to a bachelor of science degree. After completion of the curriculum in dietetics, seniors are eligible to apply for a highly competitive dietetic internship. Acceptance into an internship is not guaranteed. The dietetic internship involves an additional one to two years, depending on the site and whether graduate study is included. Upon completion of the internship, the graduate is eligible to take the examination to become a registered dietitian (RD). This program of study is a good pre-professional option for students who wish to pursue the professional school programs of human medicine and the allied health professions.

Students are required to complete core courses as well as courses in food science, nutrition, food service management, sociology, psychology, economics, chemistry, biology, physiology, and microbiology. Students are encouraged to select electives in areas that support anticipated career preferences, e.g., business, food science, nutritional biochemistry, advertising, writing, and exercise physiology.

**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101 &amp; 102–GEC Objective 1</td>
<td>6</td>
</tr>
<tr>
<td>Math 126, 128 or 150 GEC Objective 2A</td>
<td>3–44</td>
</tr>
<tr>
<td>AEM 341 GEC Objective 4</td>
<td>4</td>
</tr>
<tr>
<td>A&amp;VS 105 or AGBI 199 GEC Objective 6 Orientation</td>
<td>1–2</td>
</tr>
<tr>
<td>CDFS 110 GEC Objective 6</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201 GEC Objective 8</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 105 GEC Objective 9</td>
<td>3</td>
</tr>
<tr>
<td>A&amp;VS 402 “W” requirement</td>
<td>3</td>
</tr>
<tr>
<td>Seminar (Capstone)</td>
<td>2</td>
</tr>
<tr>
<td>GEC Requirements Objectives 3, 5 &amp; 7</td>
<td>9–10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37</td>
</tr>
<tr>
<td>Human Nutrition &amp; Foods Core Curriculum GEC Objective 2 B &amp; C</td>
<td>86</td>
</tr>
<tr>
<td>AGBI 410/411</td>
<td></td>
</tr>
<tr>
<td>ANPH 301</td>
<td></td>
</tr>
<tr>
<td>ARE 110 or ACCT 201</td>
<td></td>
</tr>
<tr>
<td>BIOL 101/103; 102/104</td>
<td></td>
</tr>
<tr>
<td>BUSA 320</td>
<td></td>
</tr>
</tbody>
</table>
CHEM 115, 116, 233, 234, 235, 236
AGEE 421
FDST 200
HN&F 171, 271, 348, 350, 353, 460, 461, 472, 474, 494
PHYS 101, 102
PSYC 101, 251
Elective .......................................................................................................................... 5
Total .......................................................................................................................... 128

Pre-Professional Programs (Veterinary Medicine, Human Medicine, and Allied Health professions)

The bachelor of science programs in animal and nutritional sciences and biochemistry and human nutrition and foods are designed to provide students with the academic requirements for entry into professional schools or colleges of veterinary medicine. WVU has agreements with the Southern Regional Education Board and currently include the schools of veterinary medicine at Auburn University, Mississippi State University, and the University of Georgia. To qualify for these positions, you must have been a West Virginia resident for at least the past five years at the time of application. Applicants for admission to these colleges of veterinary medicine must present at least 78 semester hours of acceptable credit. Since a maximum of 13 eligible students are accepted each year, alternate goals in either of the other degree programs are urged for all pre-professional students.

Applicants with a grade point average of 3.0 or above will be given first consideration for admission to these institutions.

If you have completed 90 hours of coursework at WVU or at institutions within the West Virginia state system of higher education, including at least 36 at WVU, and have completed all required courses for the degree, you may transfer credit from a professional school program to WVU to receive a bachelor’s degree.

Honors Program

The option of graduating with program honors is available to students with a 3.5 overall grade point average and the approval of departmental faculty. Graduation with program honors includes a senior thesis based upon an approved research project conducted under the supervision of a faculty mentor. For further information and to apply for admission, qualified students should consult their advisors and/or the University catalog.

Division of of Design and Merchandising
Barbara McFall, Ph.D., Interim Director

Programs of Study

The majors in the Division of Design and Merchandising focus on person-environment interactions to improve the quality of living. We conceive, plan, and produce the experiences, products, and services mandated by this complex and dynamic century. Our students find employment in traditional design and retail venues as well as in innovative organizations that value design thinking as a way to fully understand their clients and markets. Study abroad is encouraged in all programs and is required in interior design. If you seek to make a new and positive difference in your world, this is the place to be. Programs are offered in design studies, fashion design and merchandising, and interior design.

Accreditation

The interior design program is accredited by the Council for Interior Design Accreditation.

Honorary Society

Phi Upsilon Omicron, a national honor society in family and consumer sciences, is open for membership by invitation to outstanding students.

Gamma Sigma Delta, a national honor society in agriculture, forestry, and consumer sciences, is open for membership to the stop students in the college.
Student Professional Organizations

Student professional organizations provide service activities, social events, and extended learning opportunities, including field trips and guest speakers, for students in each discipline. Students are encouraged to participate in one or more of the following groups:

- American Society of Interior Designers (student chapter)
- Fashion Business Association

Interior Design
Bachelor of Science in Design and Merchandising

Students in this program, which is accredited by the Council for Interior Design Accreditation, learn to identify, research, and creatively solve problems pertaining to the function and quality of the interior environment. They gain specialized knowledge of interior construction, building codes, equipment, materials, furnishings, and aesthetics. Students engage in programming, design analysis, and space-planning relative to interiors. They prepare drawings and documents that detail their specification for aesthetically pleasing interiors that also protect the health, safety, and welfare of the public.

Offering a number of special opportunities to students, the program is known for the amount of hands-on experience it makes available to its majors. Coursework and projects focus on current design issues and include topics such as sustainability, universal design, and historic preservation. Through the course ID 400, students may participate in internships where they are able to learn and work with practicing designers while earning university credit. The program has also incorporated a global focus, reflected in design courses as well as additional course requirements. Two semesters of foreign language are required, as well as several courses on global/international issues. The high point of the global focus is seen in the required study abroad, scheduled for the spring semester of the third year.

Students at all levels are encouraged to work together to share information and skills that enhance the design learning throughout their academic career. The student organization, American Society of Interior Designers (ASID), is active on campus and sponsors various tours and trips to supplement the learning experience. Student design competitions are another source of professional and collaborative experience for interior design majors.

Career Opportunities

Employment in design occupations is expected to continue to grow. Interior designers often work for design firms, architectural firms, department and home furnishing stores, or hotel and restaurant chains. Some designers do freelance work full-time, part-time, or in addition to a salaried job.

Beginning designers usually receive on-the-job training and normally need one to three years of apprenticeship before they advance to higher level positions. Experienced designers in large firms may advance to design director, project manager, or other supervisory positions. Some experienced designers open their own firms.

Suggested Curricula—Interior Design

First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 100</td>
<td>1</td>
</tr>
<tr>
<td>ID 110</td>
<td>3</td>
</tr>
<tr>
<td>ID 230</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>GEC/Program Requirements</td>
<td>3–6</td>
</tr>
<tr>
<td>Orientation 101</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14–17</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 125</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>Art (drawing)</td>
<td>3</td>
</tr>
<tr>
<td>GEC/Program Requirements</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

(At end of this semester, students will continue in the program based on GPA ranking in interior design, Gateway Project, and then on overall GPA.)
Second Year
First Semester Hrs. | Second Semester Hrs.
---|---
ID 155..................3 | ID 225..................3
ID 200..................3 | ID 235..................3
ID 330..................3 | ID 260..................3
ENGL 102..................3 | ID 240..................2
GEC/Program Requirements..3 | GEC/Program Requirements..6
**Total**..................15 | **Total**..................17

Third Year
First Semester Hrs. | Second Semester Hrs.
---|---
ID 325..................2 | Study Abroad
ID 375..................3 | **Total**..................15
ID 270..................3 | 
BIOL 105..................3 | 
BIOL 106..................1 | 
GEC/Program Requirements..6 | 
**Total**..................18 | 

Fourth Year
First Semester Hrs. | Second Semester Hrs.
---|---
ID 355..................3 | ID 450..................1
ID 420..................3 | ID 455..................3
GEC/Program Requirements..9-12 | GEC/Program Requirements..12
**Total**..................16–18 | **Total**..................16

*Note: The minimum number of hours for graduation is 132. A reduction of course hours during these semesters may require the addition of summer classes in order to graduate on time.

Minimum Program Requirements Description and Guide
The following minimum requirements are set to insure that students who graduate from the program will have the appropriate skill level and knowledge to succeed in this competitive field.

First-Year Level
I. Enrollment in the first-year level is not limited, but second-year, third-year, and fourth-year class levels are limited to 20 students each.
   A. The following first-year courses have open enrollment: ID 100, ID 110, ID 125, and ID 230
   B. To continue in the program beyond the first year, students must meet the following requirements:
      1. Maintain at least a cumulative 2.5 grade point average (GPA) in the major's required first-year classes (ID 110, ID 125, and ID 230).
      2. Maintain a 2.25 overall GPA.
      3. Earn a minimum grade of C in ID 110 and ID 230, and a minimum grade of B in ID 125.
      4. Show good citizenship through appropriate behaviors and involvement in the interior design program.
   C. If more than 20 students meet the above requirements and wish to continue in the interior design major, then students will be selected based upon:
      1. Their cumulative GPA ranking in ID 110, ID 125, and ID 230.
      2. Their overall GPA.
      3. Performance in the Gateway Project conducted at the end of the first year.
      4. If needed, a faculty interview.
Sophomore, Junior, and Senior Level
I. All interior design students are required to maintain at least an overall 2.25 GPA and a 2.5 GPA in ID courses.
   A. Students’ GPAs will be monitored each semester.
   B. Any student who has an overall GPA below 2.25 or an ID GPA below 2.5 will be notified of the deficiency and will not be permitted to enroll in interior design courses.
   C. Students who have not been permitted to enroll in ID courses because of a low GPA may enroll in ID courses after they have met the appropriate GPA, space permitting.
II. All interior design students are required to earn at least a C in each required interior design course.
   A. Students’ grades in each of the above courses will be monitored each semester.
   B. Any student who has earned a grade of D or lower in any of the studio courses will be notified of the problem and will not be permitted to enroll in their next ID studio course.
   C. Students who have not been permitted to enroll in their next ID studio course because of receiving a grade of D or lower for one of the courses may correct the problem by successfully repeating the course or courses, before graduating, space permitting.
   D. Any student who has earned a grade of D or lower in the capstone class, ID 455: Contract Design 2, must successfully repeat the course prior to graduating.
III. The interior design studio courses are to be taken in an uninterrupted sequence (ID 125, ID 155, ID 225, ID 235, ID 325, ID 375, ID 355, and ID 455). Students who interrupt this sequence will be permitted to enroll for the next studio course if space permits.

Division of Design and Merchandising
Barbara McFall, Ph.D., Interim Director

Design Studies
Bachelor of Science in Design and Merchandising
Design is a way of thinking (about what might be better), and a process (of iterative prototyping), as well as the product of that thinking and process. The design studies program at West Virginia University provides the opportunity for cross-disciplinary study by pairing design thinking and design process courses with an approved minor of your choice.

Description of Program
Design studies is a four-year, non-studio curricula that is open to all freshmen and to students transferring into the program as long as they meet the GPA requirement. Students must have a minimum GPA of 2.5 overall to enter the program, and must maintain an overall 2.25 throughout their time in the major.

Students meet with their academic advisor at the beginning of their program to determine a program of study for their academic major. Each student, as a requirement for graduation, must participate in a minimum of six credit hours of internship. Internships will be allowed only after the student has finished a minimum of 50 percent of their minor coursework, and completed the required second year design studies coursework. Typically, internships will occur during the summer between the student’s third and fourth years. Internship experiences will be unique to each student, and will reflect their area of interest in the design fields.

Career Opportunities
Demand for graduates with design studies degrees has traditionally come from production, sales, marketing, and management firms related to design products and studio-trained designers (fashion, interiors, etc.). More recently there has been growing recognition that design thinking/process supports entrepreneurship and innovation in all venues. Google Businessweek and/or Fast Company using key word “design” for a quick overview of the rapidly expanding career potential in this field.
The program is a non-competitive major that is not accredited by CIDA (Council for Interior Design Accreditation—formerly FIDER). The offering of an interdisciplinary, non-studio design major by West Virginia University is unique in the state and within the University. Design studies brings together positive aspects of the interior design major and the multi-disciplinary studies major to provide a design-focused non-studio program that is flexible and student centered. The new major positions graduates for employment alternatives within the design fields that do not require NCIDQ certification and interior design studio expertise. Employment in design-related occupations is expected to continue to grow.

**Suggested Curricula—Design Studies**

Specifically, the major consists of a) University requirements, b) a common design core, c) additional design-related courses, d) internship or professional field experience, e) an approved minor contributing to a design-related specialty, and f) a capstone experience. Students take a core of design courses to learn and understand the design language. A minor is required to focus their area of study and provide a context for their design thinking. Finally, design-related requirements and recommended electives are chosen to support the understanding of design in a variety of contexts. The capstone requirement will be met with the addition of a six to nine hour professional field experience or external study and a one-hour seminar where students synthesize and present their experiences in the work environment. Each student meets individually with her/his advisor to determine the most appropriate coursework choices for all requirements at the beginning of the semester in which they declare design studies the major.

Curriculum for the design studies major is determined by the area of interest chosen by the student. The area of interest is explored through an approved minor at the University. A list of minors currently approved for the design studies major are advertising, business administration, communications, disability studies (certificate), entrepreneurship, history/historic preservation, horticulture, public relations, and theatre.

**Minimum Program Requirements Description and Guide**

The following minimum requirements are set to insure that students who graduate from the program will have the appropriate skill level and knowledge to succeed in their chosen field of professional work. Design studies requires a minimum of 128 credit hours for graduation.

**First-Year Level**

Students should begin the design studies program with an introduction to design as provided in the following first-year courses: ID 100, ID 110, and ID 230. Students interested in exploring the application of design principles may also take ID 125 in the spring semester.

Design studies is an open-enrollment major for incoming freshmen. Students may also transfer into the major during either fall or spring semesters as long as they meet the minimum entry requirements.

Transfer students must have an overall GPA of a 2.5 to apply for acceptance into the design studies major. It is advisable that students interested in transferring into the major make an appointment with the Advising Center (contact Joy Patterson at joy.patterson@mail.wvu.edu) to discuss details prior to officially transferring paperwork.

**Second, Third, and Fourth-Year Levels**

All Design Studies students are required to maintain at least an overall 2.25 GPA to remain in the program with good academic standing

- Students’ grades will be monitored each semester.
- Any student who has an overall GPA below 2.25 will be notified and put on academic probation for the upcoming semester. It will be necessary for the student to raise their GPA to the required 2.25 in order to continue in the Design Studies major coursework.
- Students who have an overall GPA below the required 2.25 will not be allowed to enroll in DSGN or ID coursework until the GPA has returned to the minimum required.
• Students who have not been permitted to enroll in design courses because of a low GPA may enroll in design courses after they have met the appropriate GPA, space permitting.
All design studies students are required to earn at least a C in each required interior design and design studies (DSGN) course.
• Students’ grades in DSGN and ID courses will be monitored each semester.
• Any student who has earned a grade of D or lower in any of the DSGN or ID courses will be notified of the problem and will be expected to repeat the course and earn a grade of C or above prior to graduation.

Fashion Design and Merchandising
Bachelor of Science in Design and Merchandising

Students in the fashion design and merchandising (FDM) program obtain a broad-based background in fashion design and merchandising. They may pursue a fashion merchandising or a fashion design option; both curricula consist of a minimum of 128 credit hours. Minors are available in areas such as business, advertising, foreign languages, public relations, communication studies, sociology, history, or art history.

All FDM students are encouraged to seek summer employment in the textile, apparel, or retail fields in order to gain experience and integrate coursework into business professional settings. Fashion merchandising students are required to take a three-credit work practicum following their second year in the program. Both program options require an internship in which students apply textile, apparel, and/or merchandising subject matter in a professional setting. The practicum and internship are available during the summer and fall semesters only.

An elective, study abroad opportunity enables students to observe the textile, apparel, and retail industries in the European fashion capitals of Milan, Italy, or London, England. The FDM program has established connections with fashion schools in each of these cities. Students who study abroad must register with the WVU Office of International Programs, Third Floor, Stansbury Hall, phone (304) 293-6955, X 0. Website: http://www.wvu.edu/~intlprog.

An elective fashion study tour to New York enables students to observe fashion industry and retail sites, view historic costume displays and collections, and network with graduates of the FDM program. A teaching practicum is another elective opportunity that enables a student to broaden his or her perspective. Students are encouraged to enter design and research competitions and exhibitions sponsored by industry, professional societies, and the University. A student organization, the Fashion Business Association, enriches the student experience by bringing working professionals to campus to share their experiences and providing students with opportunities to develop their leadership skills.

Career Opportunities

Retail opportunities often begin with an executive training program and may lead to positions in management, buying, allocating, planning, fashion promotion, personnel, or visual merchandising. Placement may be found with department stores, specialty stores, mass merchandisers, discount operations, and with small and large chain organizations. Opportunities in the apparel field include designer, sample coordinator, sourcing specialist, showroom sales executive, and merchandiser. Opportunities in the textile field include sales representative, color analyst, promoter, or educational director. Our students have been successful in gaining admission for advanced work in areas such as historic costume and textiles, social-psychology of dress, apparel design, textile design, and business. With additional study at the graduate level, students may secure positions with fiber and fabric producers, museums which exhibit and preserve textiles and apparel, and with colleges and universities. The opportunities are many and the employment possibilities varied.

All FDM graduates are prepared for entry-level positions or graduate study.

Minimum Program Requirements

The following minimum requirements are set to insure that students who graduate from the program will have the appropriate skill level and knowledge to succeed in this competitive field.
First-Year Level

I. Enrollment and Requirements

A. Students may enter the FDM program as first-semester freshmen.
   1. Enrollment in the required first-year FDM courses is not limited. The following courses have open enrollment and should be taken the first year in the major: FDM 110 and FDM 140. FDM 130 and 135 are required for design majors during the first year in the major.
   2. Second-level and above courses generally are limited to FDM majors; however, two GEC courses, FDM 210 and FDM 220, have open enrollment.

B. Students must meet the following requirements in order to continue or transfer into the program beyond the first year:
   1. Maintain a 2.25 overall GPA.
   2. All FDM students must earn a C or above in FDM 110, FDM 140, and MATH 126.
   3. In addition to the three courses listed in 2. above, fashion design students must earn a C or above in FDM 130 Design Concepts of Dress, and FDM 135 Figure and Fabric Drawing, to remain in this option.
   4. Successfully complete ARHS (101 or 120 or 160), ENGL 101, MATH 126, PSYC 101, and SOCA 101.

Second-, Third-, and Fourth-Year Levels

I. GPA Requirement

A. All FDM students are required to maintain a 2.25 GPA or above. Students’ GPA will be monitored each semester.

B. Any student who has an overall GPA below 2.25 will be notified of the deficiency and will not be permitted to enroll in FDM courses.

C. Students who have not been permitted to enroll in FDM courses because of low GPA may enroll in FDM courses after meeting the 2.25 minimum overall GPA, space permitting.

II. Grade Requirements

A. All FDM students are required to earn a C or above in all required FDM courses. Students’ grades in FDM courses will be monitored each semester.

B. Any student who has earned a grade of D+ or lower in any of the FDM courses will be notified of the problem and will not be permitted to enroll in the next sequence of FDM courses.

C. Students who have not been permitted to enroll in the next sequence of FDM courses because of receiving a grade of D+ or lower for one of the required FDM courses may correct the problem by repeating the course(s) the next time it is offered, space permitting, and earning a C or above. Please note that most FDM courses are offered only once per academic year.

D. Fashion design students are required to earn a minimum grade of B in FDM 230 and 250 in order to remain in the fashion design option.

III. Course Sequence

A. The FDM courses are to be taken in an uninterrupted sequence following the fashion merchandising or the fashion design block schedule. Students who step out of this sequence for any reason will be permitted to enroll for the next sequential course, space permitting.

B. Students should complete MATH 126 in their first year; ENGL 102 fall semester of their second year; ECON 201 and CS 101 before FDM 360; and ACCT 201 before FDM 361.

IV. Business and Division Requirements

A. All FDM students are required to take MATH 126, ECON 201, CS 101, ACCT 201, ADV 215, ENGL 304, BUSA 320, BUSA 330, and SPA 270 or AGEE 421.

B. In addition, fashion merchandising students are required to take finance (BUSA 340 or ARE 461).
C. All FDM students may elect to complete a business minor by completing BUSA 340, BUSA 310, and ECON 202 and earning a C or above in all of the required courses for the minor (ECON 201, ECON 202, ACCT 201, BUSA 310, BUSA 320, BUSA 330, and BUSA 340). Both ECON courses may be used to fulfill GEC requirements and count toward the minor.

**Practicum Requirement**

The practicum is a required, three-credit course for all fashion merchandising students, and is designed to allow students to apply the course in a work setting and gain experience. It is offered through WVU fall semester and summer only. The summer practicum is six weeks and is completed during one summer session; students register and pay for three credits. The fall practicum is taken as part of a full course load; it is a minimum of 13 weeks.

**Site Selection** It is up to each student to select and secure his or her own practicum site using all available resources. It is wise to interview at more than one practicum site in order to locate the best possible position. Prior site approval by the practicum course instructor is required for all sites. The site must specialize in some aspect of fashion merchandising. Students must select a site that will be different from their internship site in order to enhance their competitiveness.

**Procedure** Students take the practicum after completing all 200-level FDM courses successfully. An application and approval form, signed contract, and resume are required for registration. All paperwork needs to be complete and handed in by the deadlines or the student will be deleted from the course roster. Before registering, a student needs to pay parking tickets, library fines, and check with the Department of Financial Aid so there are no restrictions placed on his or her registration. Prior to embarking on this work experience, all students must participate in the mandatory orientation session(s). Summer orientation is held at the end of spring semester prior to the practicum. Fall orientation is conducted the first week of fall semester as published in the WVU Schedule of Courses.

**Internship Requirement**

The internship is a required capstone course for all students in the FDM program. It is offered through WVU fall semester and summer terms only. Fashion merchandising students are required to have a six-credit internship. A six-credit summer internship is eight weeks long and spans both summer terms; students must register and pay for six credits at the beginning of the first summer session. Apparel design students are required to have a three-credit internship; students must register and pay for three credits and complete the internship within one six-week summer term. Fall internships that are taken as part of a full course load are to be a minimum of 13 weeks. If a student is not taking additional coursework in the fall, he or she may follow the time guidelines for summer internships.

**Site Selection** It is up to each student to select and secure his or her own internship site using all available resources including the development of networking contacts. These can be made through the Fashion Business Association, study tour, the WVU Career Services Center, and FDM internship instructors. Students should be prepared to interview when recruiters come to campus during the academic year. It is wise to interview with more than one internship site in order to locate the best possible position that will lead to an enhancement of career goals. Approval of the site ahead of time by the internship course instructor is required for all proposed sites. The site must specialize in some aspect of fashion merchandising or apparel design.

**Procedure** Students may take the internship after completing FDM 361 successfully. An application and approval form, signed contract, and resume are required for registration. This paperwork needs to be complete and handed in by the summer or fall deadlines or the intern will be deleted from the course roster. Before registering for the internship, a student needs to pay parking tickets, library fines, and check with financial aid so there are no restrictions placed on his or her registration. Prior to embarking on the internship, all students must participate in the mandatory orientation session(s). The summer orientation session is held at the end of spring semester prior to the internship. The fall orientation sessions are conducted the first week of class as published in the WVU Schedule of Courses.
## FDM Block Schedule—Fashion Merchandising
### First Year
<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDM 110 <em>Introduction to Fashion Business</em></td>
<td>or FDM 110 <em>Introduction to Fashion Business</em></td>
</tr>
<tr>
<td>FDM 140 <em>Introductory Textiles</em></td>
<td>or FDM 140 <em>Introductory Textiles</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDM 210 <em>Fashion and Dress Through History</em></td>
<td>FDM 251 <em>Applied Fashion/History</em></td>
</tr>
<tr>
<td>FDM 220 <em>Fashion, the Body, and Culture</em></td>
<td>FDM 260 <em>Visual Merchandising</em></td>
</tr>
<tr>
<td>FDM 235 <em>Product Development</em></td>
<td>Study Abroad—Optional, summer after 1st or 2nd yr.</td>
</tr>
</tbody>
</table>

### Second Year
<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDM 310 <em>Merchandising Practicum, or summer after 2nd yr.</em></td>
<td>FDM 361 <em>Merchandise Planning and Control</em></td>
</tr>
<tr>
<td>FDM 360 <em>Fashion Merchandising</em></td>
<td>FDM 493 SPTP: <em>Professional Development</em></td>
</tr>
</tbody>
</table>

### Third Year
<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDM 430 <em>Fashion Design Portfolio</em></td>
<td>FDM 470 <em>Global Issues and Fashion</em></td>
</tr>
<tr>
<td>FDM 491 <em>Internship, or summer after 3rd yr.</em></td>
<td>FDM 311 <em>Fashion Study Tour, or spring of 3rd yr., elective</em></td>
</tr>
</tbody>
</table>

### Fourth Year
<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDM 330 <em>Fashion Design and Illustration</em></td>
<td>FDM 350 <em>Draping</em></td>
</tr>
<tr>
<td>FDM 360 <em>Fashion Merchandising</em></td>
<td>FDM 361 <em>Merchandise Planning and Control</em></td>
</tr>
<tr>
<td>FDM 493 SPTP: <em>Professional Development</em></td>
<td>FDM 410 <em>Portfolio Presentation, elective</em></td>
</tr>
</tbody>
</table>

## FDM Block Schedule—Fashion Design
### First Year
<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDM 110 <em>Introduction to Fashion Business</em></td>
<td>or FDM 110 <em>Introduction to Fashion Business</em></td>
</tr>
<tr>
<td>FDM 140 <em>Introductory Textiles</em></td>
<td>or FDM 140 <em>Introductory Textiles</em></td>
</tr>
<tr>
<td>FDM 130 <em>Design Concepts of Dress</em></td>
<td>or FDM 135 <em>Figure and Fabric Drawing</em></td>
</tr>
<tr>
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<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDM 210 <em>Fashion and Dress Through History</em></td>
<td>FDM 250 <em>Flat Pattern Design</em></td>
</tr>
<tr>
<td>FDM 220 <em>Fashion, the Body, and Culture</em></td>
<td>FDM 251 <em>Applied Fashion/History</em></td>
</tr>
<tr>
<td>FDM 230 <em>Apparel Production and Fit</em></td>
<td>FDM 260 <em>Visual Merchandising</em></td>
</tr>
</tbody>
</table>

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<thead>
<tr>
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<th>Second Semester</th>
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</thead>
<tbody>
<tr>
<td>FDM 330 <em>Fashion Design and Illustration</em></td>
<td>FDM 350 <em>Draping</em></td>
</tr>
<tr>
<td>FDM 360 <em>Fashion Merchandising</em></td>
<td>FDM 361 <em>Merchandise Planning and Control</em></td>
</tr>
<tr>
<td>FDM 493 SPTP: <em>Professional Development</em></td>
<td>FDM 410 <em>Portfolio Presentation, elective</em></td>
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<tr>
<td>FDM 410 <em>Portfolio Presentation, elective</em></td>
<td>FDM 410 <em>Portfolio Presentation, elective</em></td>
</tr>
</tbody>
</table>
General Education Curriculum

All WVU students are required to take at least one course from each of the nine WVU General Education Curriculum (GEC) learning objectives; more than one course is required for objectives 1, 2, and 6. The following courses are required for the FDM program: ENGL 101, ENGL 102, CS 101, MATH 126, ARHS (101 or 120 or 160), ECON 201, PSYC 101, and SOCA 101. It is recommended that students select from the following courses/disciplines to complete the GEC Learning Objectives: COMM 316, HIST, SOCA (beyond 101), SPAN, FRCH, JRL 101, ITAL. Selected courses from these disciplines may be used to fulfill requirements for a minor.

<table>
<thead>
<tr>
<th>General Education Curriculum</th>
<th>Objective</th>
<th>Course Requirements (Required*)</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>ENGL 101*, ENGL 102*</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Basic Math &amp; Science</td>
<td>CS 101*, MATH 126*, Lab Science* (4 hr.), Science* (3 hr.)</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>The Past &amp; Its Traditions</td>
<td>FDM 210</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Contemporary Society</td>
<td>FDM 220</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Artistic Expression</td>
<td>ARHS (101 or 120 or 160)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The Individual in Society</td>
<td>UNIV 101* or equivalent, PSYC 101</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>American Culture</td>
<td>SOCA 101</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western Culture</td>
<td>ECON 201</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Non-Western</td>
<td>COMM 316, HIST, SOCA (beyond 101), SPAN, FRCH, JRL 101</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Minimum number of credits for FDM</td>
<td>42</td>
<td></td>
</tr>
</tbody>
</table>

Division of Forestry and Natural Resources

Joseph F. McNeel, Ph.D., Director
James P. Armstrong, Associate Director for Academics
John R. Brooks, Forest Resources Management Coordinator
Chad Pierskalla, Recreation, Parks, and Tourism Resources Coordinator
Kyle Hartman, Wildlife and Fisheries Coordinator
Jingxin Wang, Wood Science Coordinator

Programs of Study

If you are interested in natural resources and the out-of-doors, you may be interested in one of the four curricula offered by the Division of Forestry and Natural Resources. Those include forest resources management; recreation, parks, and tourism resources; wildlife and fisheries resources; and wood science and technology. If you are unsure about your major, you can be admitted to the pre-agriculture, forestry, and consumer sciences curriculum with a faculty member to advise you until a program major has been selected. If you have chosen a program major, you will be admitted directly to the major and be assigned a faculty advisor at your first registration.

The division, which has excellent facilities, is located in Percival Hall on the Evansdale campus in close proximity to the Evansdale Library and the Evansdale Residential Complex. In addition, 10,400 acres of forested tracts, including the 7,600-acre University Research Forest, are located near the campus and are used as extensive outdoor laboratories. The MeadWestvaco Natural Resource Center is the focal point of the division’s teaching, research, and service activities at the Research Forest.

Transfer Credits for Professional Courses

If you are a transfer student entering the Division of Forestry and Natural Resources from a one- or two-year technical school or from a four-year unaccredited forestry school, you must take an advanced standing examination to demonstrate proficiency in any required professional course offered by the Division of Forestry and Natural Resources for which transfer credit is sought. This rule also applies to courses in land surveying. Advanced standing examinations are given after you have enrolled in the Division of Forestry and
Natural Resources. All other credits are accepted subject to the regulations of the Office of Admissions and Records regarding transfer of credits. Currently official articulation agreements are being developed for two-year natural resource students transferring from recognized programs at Allegany College, Maryland; Dabney Lancaster, Virginia; Glenville State College, West Virginia and Hocking Technical College, Ohio, into the Division of Forestry and Natural Resources programs.

**Accreditation of Forestry Programs**

Forest resources management is accredited by the Society of American Foresters (SAF). SAF is the specialized accrediting body recognized by the Council on Post-Secondary Accreditation and the U. S. Department of Education as the accrediting agency for forestry in the United States.

The wood science and technology curriculum is accredited by the Society of Wood Science and Technology. It is one of only ten North American programs so accredited.

**Summer Field Studies offered by the Division of Forestry and Natural Resources**

The division offers a wide range of summer field study opportunities and international travel experiences for WVU students and division majors to gain valuable practical experience and apply what they’ve learned in the classroom. Every summer, a wide selection of field courses is offered through the off-campus Summer Programs office. These have included courses as varied as the Vegetation of WV to Stream Ecology to international expeditions to Fiji and Costa Rica. For more information, see http://www.forestry.caf.wvu.edu for details.

The six-hour Forest Resources Management Field Practice (FMAN 400) course consists of a summer session and is designed for students who have completed the sophomore year of the forest resources management curriculum. Students live in Morgantown and travel daily to the University Research Forest for field studies. The course provides training in forest surveying, forest mensuration, GIS/GPS, forest management, and silviculture. Occasional trips are made to wood-using industries, and to other forests to study current management techniques and to experience the management of northern hardwood and spruce types.

Students in the wood science and technology program are required to complete a three-hour internship, WDSC 491 Professional Field Practice, in the summer between the junior and senior year. Students obtain employment in a planned, paid work experience lasting at least ten weeks with a wood products company or government agency and are required to prepare progress reports and a final report for their academic advisor. Students in the Wildlife and Fisheries Program are required to take a one to three hour internship, WMAN 491 Professional Field Experience. The RPTR 491 Internship is required of students who have completed the junior year of the recreation resources management curriculum. Eight weeks of full-time supervised professional field work is required of students who have completed the junior year of the recreation curriculum. The summer experiences acquaint students with management of park, recreation, and tourism enterprises.

**Forest Resources Management**

**Bachelor of Science in Forestry**

This curriculum is designed to prepare graduates for a career in management of forests and associated natural resources. In forestry, we face growing demands for wood products along with increasing public consciousness of the value of wild lands for recreation, wildlife habitat, watershed protection, aesthetics, and environmental protection. Our curriculum is designed to provide a balanced approach to forest management. The major emphasis is on management and utilization of timber resources, but we also orient students to management of forests for recreation, wildlife, and water. We also stress the importance of forest ecology, environmental protection, and aesthetic qualities in forest management.
**Curriculum Structure**

We require the completion of 128 credit hours of coursework. Required courses include biological, physical, and social sciences, English composition, communication, mathematics, forest science and management, and liberal studies. We require a six-week summer field practice; this period, along with laboratories in several of our courses, provides ample opportunity to gain field experience. Overall, we have designed the curriculum to provide the needed blend of scientific, technical, and managerial knowledge professionals need to manage public or private forest resources. Elective hours are used to develop additional professional competence in specialized areas.

**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101 Composition and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101 General Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 103 General Biology</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 111/115 Fundamentals of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>FOR 101 Careers-Natural Resources Management</td>
<td>1</td>
</tr>
<tr>
<td>MATH 126 College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>PLSC 206 Principles of Plant Science</td>
<td>4</td>
</tr>
<tr>
<td>MATH 150/155 Introduction to Calculus/Calculus 1</td>
<td>3</td>
</tr>
<tr>
<td>FOR 240 Intro. Computing-Natural Resources</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 100 Forest Resources in U.S. History or GEC Obj. #3</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 205 Dendrology</td>
<td>3</td>
</tr>
<tr>
<td>STAT 211 Elementary Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>CE 200 Land Surveying</td>
<td>3</td>
</tr>
<tr>
<td>FOR 203 Careers and Natural Resources</td>
<td>1</td>
</tr>
<tr>
<td>FMAN 222 Forest Mensuration</td>
<td>4</td>
</tr>
<tr>
<td>ECON 201 Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>FMAN 212 Forest Ecology</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 234 Wildlife, Management</td>
<td>3</td>
</tr>
<tr>
<td>FMAN 400 Forest Resource Management Field Practice</td>
<td>6</td>
</tr>
<tr>
<td>FOR 326 Remote Sensing of Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Composition and Rhetoric</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMAN 311 Silvicultural Systems</td>
<td>4</td>
</tr>
<tr>
<td>WDSC 223 Wood Anatomy and Structure</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>AGEE 421 Agricultural/Natural Resource Communications or Approved COMM Elective</td>
<td>3</td>
</tr>
<tr>
<td>FMAN 330 Principles of Forestry Economics</td>
<td>4</td>
</tr>
<tr>
<td>AGRON 202 Principles of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>AGRON 203 Principles of Soil Science</td>
<td>1</td>
</tr>
<tr>
<td>WDSC 232 Primary Conversion and Grading</td>
<td>3</td>
</tr>
<tr>
<td>FOR 438 Human Dimensions of Natural Resources Management</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMAN 433 Forest Management</td>
<td>3</td>
</tr>
<tr>
<td>FOR 421 Renewable Resources Policy and Government</td>
<td>3</td>
</tr>
<tr>
<td>ENTO 470/PPTH 470 Forest Pest Management</td>
<td>4</td>
</tr>
<tr>
<td>FHYD 444 Watershed Management</td>
<td>3</td>
</tr>
<tr>
<td>FMAN 434 Forest Resources Management Planning</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional GEC requirements, not elsewhere covered</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electives</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>128</td>
</tr>
</tbody>
</table>
Career Opportunities

Our graduates find a variety of career opportunities. Many are professional foresters with governmental agencies, such as the U.S.D.A. Forest Service and state forestry services, and many others are employed by private wood industries such as lumber and wood products companies and pulp and paper companies. Many of our graduates work in private forestry consulting or have chosen a career in urban forestry. A significant number of our students go on to graduate school, studying a wide range of scientific and technical specializations to prepare them for research, teaching, or advanced managerial careers.

As a graduate professional forester, you could expect to do field work such as estimating the volume and value of areas of timberland, planning and supervising timber harvesting operations, and doing forest protection work including fire, insect, and disease control. Managerial work would include planning timber crop rotations, evaluating the economics of alternative forest management plans, and planning for integration of forest land for recreation, timber, watershed, wildlife, and environmental protection. With experience and proven performance in these activities, professional foresters often advance to executive management positions in public forestry agencies or forest products industries.

Recreation, Parks, and Tourism Resources
Bachelor of Science in Recreation

The recreation, parks, and tourism resources major prepares students for careers providing outdoor recreation and tourism opportunities for a wide range of public, commercial, and non-profit agencies. This is a natural resource management degree program, emphasizing the ecological, economic, social, and psychological aspects of managing outdoor recreation and tourism resources. The program requires 128 credit hours of study. A required core of natural resource-based recreation and tourism management courses is complemented by forestry and natural resource management emphasis courses and other required university courses.

Further information on the recreation, parks, and tourism resources major is available at the program’s Website at http://www.forestry.caf.wvu.edu/wvu%5Fparks/ or e-mail the program coordinator at cpierska@wvu.edu. Come visit our Recreation, Parks, and Tourism Resources office in the Division of Forestry and Natural Resources, 325 Percival Hall, P.O. Box 6125, West Virginia University, Morgantown, WV 26506-6125.

In the freshman year, you may enroll in RPTR 142 Introduction to Recreation, Parks and Tourism Resources, ENGL 101, BIOL 101 and 103, FOR 101, and FOR 140. RPTR 142, 242, and 239 are required before upper-division RPTR courses may be taken for credit. At the end of the sophomore year, students are required to complete a Wilderness First Responder course (RPTR 493D). At the end of the junior year, after completing the following required RPTR courses (RPTR 142, RPTR 239, RPTR 242, RPTR 433, RPTR 485, and RPTR 493D), you must complete an approved 400-hour internship of not less than eight weeks with a recreation, parks, or tourism agency (RPTR 491). Most recreation internships occur during the summer months.

Curriculum Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Freshman Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BIOL 103</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>FOR 101</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>RPTR 142</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>RPTR 242</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>WMAN 150</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MATH 126</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PSYC 101</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>WDSC 100</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>FOR 140</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
is grounded in the RPTR core required courses and capped with a professional internship program, usually during the summer following the student’s junior year. Students are encouraged to develop focused emphasis areas in specialties such as park and outdoor recreation, adventure recreation, or sustainable tourism through careful selection of their focused electives. RPTR majors are also urged to seek both volunteer and paid seasonal employment and service learning opportunities in the recreation, parks, and tourism field to enhance their employability when graduating. Finally, RPTR majors are mentored into becoming active in professional societies and associations such as the student-led Professional Recreation and Park Society, Society of American Foresters, and National Recreation and Park Association and they are encouraged to earn professional certification in areas such as sustainable tourism, wilderness first responder, and law enforcement.

### Professional Preparation and Areas of Emphasis

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 105/106 or CHEM 111 or GEOL 110/111</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>SOC 101</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>FOR 203</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>FOR 205</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR 239</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPA 270</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>FOR 240</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>STAT 211</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR Advanced Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR 493D</td>
<td></td>
<td>3</td>
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**Sophomore Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>FMAN 212</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR 335</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Artistic Expression elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>FOR 438</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR 433</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 111 or 201</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Non-western Culture elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ARE 220</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR 485</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RESM 440 Applied GIS Env. Mgmt.</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR 491</td>
<td></td>
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</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FOR 470A</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENVP 460</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>FOR 421</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR Advanced Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AGEE 421</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RPTR 450</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 421 A</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>128</td>
</tr>
</tbody>
</table>

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West Virginia University Undergraduate Catalog
**Wildlife and Fisheries Resources**  
**Bachelor of Science**

The wildlife and fisheries resources curriculum, consisting of 128 hours, prepares students for professional positions as wildlife and fish biologists, natural resources conservation officers, wildlife and fisheries managers and planners, wildlife or fisheries communication specialists, wildlife and fisheries toxicologists, and environmental consultants. The program is unique in the region as graduates are fully trained in both the wildlife and fisheries fields. The curriculum provides a solid basic background in biology, ecology, and natural resource management. Students fulfilling this program will meet the requirements for professional certification as either a wildlife biologist (certified through the Wildlife Society) or fisheries biologist (through the American Fisheries Society). A careful selection of restricted electives enables students to specialize in related natural resource areas and to have the opportunity for widening employment in other environmental fields. Other options can be tailored to your objectives. Students will be able to consult with their advisor in the selection of courses from a group of restricted electives to develop your area of emphasis.

### Curriculum Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMAN 100</td>
<td>The Tradition of Hunting</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 150</td>
<td>Principles of Conservation Ecology</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 175</td>
<td>Intro. to Wildlife and Fisheries Management</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 224</td>
<td>Vertebrate Natural History</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 234</td>
<td>Forest Wildlife Management</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 300</td>
<td>Wildlife and Fisheries Techniques</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 313</td>
<td>Wildlife Ecosystem Management</td>
<td>4</td>
</tr>
<tr>
<td>WMAN 421</td>
<td>Renewable Resources Policy and Governance</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 445</td>
<td>Fish Management</td>
<td>3</td>
</tr>
<tr>
<td>WMAN 446</td>
<td>Forest Limnology</td>
<td>4</td>
</tr>
<tr>
<td>WMAN 450</td>
<td>Adv. Wildlife and Fisheries Mgmt. (Capstone)</td>
<td>4</td>
</tr>
<tr>
<td>WMAN 491</td>
<td>Professional field experience</td>
<td>1</td>
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</tbody>
</table>

- A Fisheries Biology Course (e.g. F.W. Fishes, BIOL 341 or 339, WMAN 550 Fish Ecology, or equiv.) ........................................... 3
- A Wildlife Biology Course (e.g. WMAN 221, 425, 426 or equiv.) ........................................................................................................ 3
- A Plant / Botany Course (e.g. PLSC 205 or equiv.) ....................................................................................................................... 3
- Restricted Electives .................................................................................................................. 12

### Additional Courses

- FOR 101 Careers in Natural Resources Management .................................................. 1
- FOR 205 Dendrology ........................................................................................................... 3
- FOR 240 Intro. To Computing in Natural Resources ..................................................... 3
- FOR 438 Human Dimensions in Natural Resources ...................................................... 3
- FOR 493L Surveys for Ecology and Management ......................................................... 4

### Supporting Courses

- WDSC 100 Forest Resources in U.S. History (or GEC #3) ........................................ 3
- FOR 140 WV Natural Resources (or GEC #4) ................................................................ 3
- LARC 212 History of Landscape Architecture (or GEC #4) .................................... 3
- SPA 270 (or GEC #6) ...................................................................................................... 3
- ECON 111 or 201 (or GEC #8) ...................................................................................... 3
- SOCA 105 or POLS 103 (or GEC #9) ................................................................. 3

### Mathematics Courses

- MATH 126 College Algebra ............................................................................................ 3
- STAT 211 Elementary Statistical Inference ............................................................... 3
- ENGL 101 and 102 Composition and Rhetoric .......................................................... 6
- BIOL (BIOL 115 & 117 OR BIOL 101–104) .............................................................. 8
- CHEM (CHEM 115 & 116 OR CHEM 111 & 112) ................................................... 8

*Davis College of Agriculture, Forestry, and Consumer Sciences*
When you attend WVU in the wildlife and fisheries resources program, you will have some special opportunities to enhance your education. We have a U.S.G.S. Fish and Wildlife Cooperative Research Unit housed within our program. This unit provides three additional faculty members conducting extensive research programs all around the country. In addition, the WVDNR provides a liaison biologist to the unit that provides a direct link from students to the state’s natural resources agency. Undergraduates benefit from the personnel at the unit in several ways: the unit and liaison provide federal and state contacts for employment opportunities; the unit research programs may provide summer employment on fish and wildlife projects, and faculty in the unit also teach in our program.

All of our faculty are involved with graduate training. This active research program provides invaluable classroom experiences as faculty remain up-to-date with all the latest studies and methods in the field. Students also benefit through volunteer experiences and summer employment opportunities for students working on research projects.

Career opportunities in wildlife and fisheries are expanding. Even so, we encourage our students to consider going for advanced degrees when they finish here. Such qualified seniors find that assistantships are readily available due to the solid course background, training, and experience they received while here at WVU.

**Minor in Wildlife and Fisheries Resources**

In order to earn a formal minor, students must complete the following courses: WMAN 150, 224, 234, 300, 313, and 445.

**Wood Science and Technology Bachelor of Science**

The wood science and technology curriculum is designed to prepare students for the challenges of a wood products industry career; an industry that employs approximately 2.5 million people nationwide according to the U.S. Census of Manufacturers. Society must provide the basic needs for materials for furniture, paper, packaging, building materials, and other products for sustaining a rapidly growing population. At the same time, protection of the environment requires proper use of natural resources. One of the most sensible alternatives for meeting material needs in an environmentally safe manner is by use of wood as a raw material. To meet society’s needs, the wood products industry must harvest timber in an environmentally sound manner and make more efficient use of the harvested forest resource. This responsibility requires development of innovative approaches to obtaining, manufacturing, using, and recycling wood products. The wood science and technology curriculum focuses on these aspects of the wood products industry. The program is accredited by the Society of Wood Science and Technology.

**Professional Areas of Emphasis**

Students choose a professional area of emphasis, consisting of 41 hours of coursework, to supplement 87 hours of core curriculum in wood science and technology. (1) The area of emphasis may be a University-approved minor plus a core of 16 hours of specialized wood science courses and restricted electives. Students transferring into wood science and technology from a related discipline may use the previous major instead of a minor as the area of emphasis provided the student has passed at least 15 semester hours of core coursework from the previous discipline as indicated by a common course prefix (i.e., FMAN) with a C grade or better, and has received approval from the wood science and technology faculty. (2) Students may also choose a specialized forest utilization area of emphasis consisting of 40 hours of forestry, wood science, restricted electives, and related courses. The forest utilization area of professional emphasis prepares graduates for careers in timber harvesting, forest engineering, primary processing of wood products, and timber procurement.
<table>
<thead>
<tr>
<th>Curriculum Requirements (Core Courses)</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 101 Professional Orientation, or equivalent 1</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 101 Composition and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Composition and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101 and 103 Biology, or equivalent 2</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 111 or CHEM 115 Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>MATH 150 Introduction to Calculus</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 101 Introductory Physics</td>
<td>4</td>
</tr>
<tr>
<td>STAT 211 Elementary Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>FOR 203 Careers in Natural Resources</td>
<td>1</td>
</tr>
<tr>
<td>FOR 205 Dendrology</td>
<td>3</td>
</tr>
<tr>
<td>FOR 222 Forest Mensuration</td>
<td>4</td>
</tr>
<tr>
<td>FOR 240 Computer Applications for Natural Resources</td>
<td>3</td>
</tr>
<tr>
<td>FOR 438 Human Dimensions of Natural Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201 Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202 Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 100 Forest Resources in U.S. History, or equivalent 3</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective 5 Elective (Artistic Expression)</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective 6 Elective (The Individual in Society)</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective 7 Elective (American Culture)</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective 9 Elective (Non-Western Culture)</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 223 Wood Anatomy and Structure</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 340 Physical Properties of Wood</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 341 Wood Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 413 Wood Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 232 Timber Procurement and Grading</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 362 Forest Products Decision-Making</td>
<td>4</td>
</tr>
<tr>
<td>WDSC 422 Forest Products Harvesting</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 465 Wood-Based Composite Materials</td>
<td>4</td>
</tr>
<tr>
<td>WDSC 494 Seminar</td>
<td>1</td>
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</tbody>
</table>

**Professional Area of Emphasis in Wood Processing**

<table>
<thead>
<tr>
<th>Area of Emphasis Based Upon a Minor or Previous Major</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDSC 330 Wood Machining</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 351 Forest Products Protection</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 337 Wood Adhesion and Finishing</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 460 Plant Layout for Wood Industries 4</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 491 Professional Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>University-approved minor or at least 15 hours of core courses in an approved discipline 5</td>
<td>15</td>
</tr>
<tr>
<td>Restricted electives 6</td>
<td>11</td>
</tr>
</tbody>
</table>

**Area of Emphasis in Forest Utilization**

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 200 Land Surveying</td>
</tr>
<tr>
<td>FOR 326 Remote Sensing of the Environment</td>
</tr>
<tr>
<td>FHYD 444 Forest Hydrology</td>
</tr>
<tr>
<td>FMAN 212 Forest Ecology</td>
</tr>
<tr>
<td>FMAN 311 Silvicultural Systems</td>
</tr>
<tr>
<td>FMAN 433 Forest Management</td>
</tr>
<tr>
<td>WDSC 423 Forest Roads 4</td>
</tr>
<tr>
<td>WDSC 491 Professional Field Experience</td>
</tr>
<tr>
<td>WMAN 234 Forest Wildlife Management</td>
</tr>
<tr>
<td>Writing (W) course</td>
</tr>
<tr>
<td>Restricted electives</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
1. Students who transfer into wood science and technology and have completed the UNIV 101 or equivalent prior to transferring do not have to take FOR 101.
2. Students who transfer into wood science and technology and have completed four hours of general plant and cellular biology prior to transferring do not have to take the BIOL 101 and 103.
3. Students who transfer into wood science and technology and have completed the GEC objective 3 prior to transferring do not have to take WDSC 100.
4. Capstone course.
5. For advanced students transferring into wood science and technology from a related major to qualify, the area of emphasis must:
   a. include a core consisting of at least 15 semester hours of coursework from the student’s previous major,
   b. must all be from a single discipline as indicated by the course prefix (i.e., FMAN),
   c. must have been passed with a C grade or better, and
   d. must be approved by the wood science and technology faculty.
6. Restricted electives must contribute to the student’s professional development and must be approved by the student’s advisor.

Special Opportunities
A regional center for development of the wood products industry, the Appalachian Hardwood Center, is allied with the wood science and technology program. The center’s staff frequently provides opportunities for educational and professional development of wood science and technology students. Students sometimes find part-time employment in the research program of the center as well as with the faculty’s teaching and research program.

Career Prospects
The wood products industry employs an estimated 2.5 million people nationwide. Yet only ten American universities provide accredited programs specifically designed to educate professionals to manage and provide technical expertise to the industry. West Virginia University is one of them. The unique nature of the program and the large base of potential employers result in an excellent job market for wood science and technology graduates. Career opportunities are quite diverse. The jobs span the spectrum from standing timber through manufacture of products to their marketing, distribution, and end use. Graduates may work in sawmills as production managers or as timber procurement foresters, buying timber, and planning harvesting operations in accordance with sound forest management and environmental practices. They may also gain employment as quality assurance managers, production supervisors, and process engineers for companies that manufacture furniture, cabinets, and state-of-the-art engineered wood products. Graduates may become product designers and estimators or they may purchase and sell materials and services. Some of our graduates go on to graduate school in wood science or related disciplines, including forestry, business administration, and engineering. They work in all parts of the nation and in both rural and urban communities, yet approximately half find employment in West Virginia. Many of the leaders in the nation’s wood products industry are WVU graduates.

Minor in Wood Science and Technology
Requirements include 18 credit hours, including WDSC 223, 340, and 341 (9 hours); and a minimum of nine hours selected from 232, 413, 422, 423, 330, 337, 351, 362, or 465.

Division of Plant and Soil Sciences
Barton S. Baker, Ph.D., Director

Nature of Program, Objectives, and Goals
Students in the Division of Plant and Soil Sciences may choose from agroecology, agronomy (including a turf emphasis), applied and environmental microbiology, horticulture, environmental protection, or soil science majors. Graduates from these curricula are employed in commercial industries involved with the production and distribution of pesticides, fertilizers, seeds and plants, and nursery, floral, and turf products. Positions as estate and farm managers, land reclamationists, city and county planning technicians, park and golf course superintendents, and environmental protectionists are also available to graduates. A
variety of state and federal governmental and private consulting positions are available as well. Graduates who wish to further their education may acquire the necessary backgrounds to enter professional or graduate programs in such fields as agricultural biochemistry, crop science, entomology, genetics, horticulture, microbiology, mycology, plant pathology, plant physiology, and soil science.

**Bachelor of Science in Agriculture**

**Curriculum Requirements: Plant and Soil Sciences**

**General Education Curriculum**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>1–3–9</td>
<td>28–29</td>
</tr>
<tr>
<td>2 (including a minimum of eight hours in biology; eight hours in chemistry; three hours in college algebra or equivalent)</td>
<td>24</td>
</tr>
</tbody>
</table>

Courses in agriculture ................................................................. 45
Elect a minimum of a three credit course, excluding Assigned topics, from each of the following disciplines
1. Animal science
2. Plant science
3. Soil science
4. Agricultural/resource economics
Elect additional courses to obtain a total of 45 hours in Agriculture

**Free and Restrictive Electives**........................................................................... 30–31

**Total** .......................................................................................................................... 128

Specific requirements of each of the program options are listed under the description of that option.

**Agroecology**

Agroecology is the interdisciplinary study of how agricultural production of plants and animals affects and is affected by the local environment. Agroecology emphasizes sustainable and environmentally friendly approaches to agricultural production. The agroecology major combines concepts of crop production with those of environmental protection in such a way that there is a sustained balance between production and environmental issues. This major provides students the opportunity to specialize in ecological/sustainable aspects of crop production. Potential areas of employment include: farm and environmental consulting, organic farms, parks, lawn care and maintenance companies, agricultural supply companies, cooperative extension, and state and federal government support agencies.

**Required Courses** Students in the agroecology major must complete all requirements for the minor in soil science and must complete two additional minors from the following four minors offered through the Division of Plant and Soil Sciences: environmental microbiology, environmental protection, horticulture, and pest management. Other required courses include: AGRL 111; AGRN 202, 203; AGRN/ENV 425; A&VS 251; CHEM 111, 112; AEM 341; ENTO 404; GEN 371; MATH 126; PPTH 401; PLSC 206; PLSC 453; STAT 211; plus a capstone course from one of the minors other than soil science.

**Agronomy**

Agronomy is the application of science to field crop production or turf management. The crop science option in agronomy emphasizes primarily the physiology, production, and quality of forage crops. The turf emphasis allows students to take courses in turfgrass management, weed science, and soil fertility. The turf emphasis also requires an internship in turfgrass management. Agronomists qualify for a wide variety of occupations, including farming, soil conservation, agricultural sales, extension, research, and turfgrass management.

**Required Courses** AGRN 452 (Capstone); BIOL 350; CHEM 115, 116; ENGL 305; ENTO 404; AEM 341; GEN 371; MATH 128 or equivalent; PHYS 101; PPTH 401; STAT 211; three hours in computer science; three hours in communication studies or speech pathology and audiology; one semester of organic chemistry including laboratory; six hours in ECON or ARE; seven hours in soil science; 15 hours in crop science.

**Additional Requirements for the Turf Emphasis** AGRN 315; AGRN 451; AGRN 410; PLSC 491.
Environmental Protection

This option prepares students for careers in areas which safeguard the quality of the environment. The curriculum consists of two elements: interdisciplinary training in a broad array of environmental protection sciences, and a specialization in either pest management or soil and water conservation. Students work with their advisor to select courses from both the environmental protection electives and the specialization electives that match their individual interests and career goals. Recent graduates in this option are employed by municipal, state, and federal governmental agencies; consulting firms, especially those specializing in land reclamation, water quality, or pest management; and companies associated with natural resource industries.

Math and Science Requirements
CHEM 115, 116, 231; MATH 126; STAT 211; GEOL 101, 102 or 110, 111*.

Required College Courses
AGRL 111, ARE Course; AGRN 202, 203; A&VS 251, AEM 341; ENVP 155, 460; PLSC 206; choose two of the following courses: GEN 371, ENTO 404, PPTH 401.

Environmental Protection Electives (15 hours from at least two areas) AGBI 410; ARE 220, 383, 410; BIOL 361; CE 443; CS 101*; or AGEE 110; ENVP 355; FOR 210, 326; GEN 371; GEOG, 205, 305, 350; PHYS 101, 102; POLS 355.

Pest Management Specialization Capstone
ENVP/ENTO 412 plus 14 hours from the following: AGRN 315, AGRN/ENVP 451; BIOL 221; ENTO/PPTH 470; ENTO 404, 410; AEM 401; PPTH 401.

Soil and Water Conservation Specialization Capstone
ENVP/AGRN 425 plus 15 hours from the following: ENVP/AGRN 455; AGEE 460, 461; AGRN 410, 415, 417, 430, 451, 454, 455; BIOL 362; CE 347, 441; AEM 401; AEM/AGRN/ENVP 420; FHYD 444; FMAN 251; GEOL 321, 365, 463; WMAN 350.

*Note: The B.S. in agriculture requires 45 hours in agriculture courses. The total hours may be met by taking the required college courses and by taking college courses offered under environmental protection electives, free electives, or one of the specializations. STAT 211; GEOL 101 and 102, or 110 and 111; and CS 101 are accepted as part of the required 45 hours in agriculture courses.

Horticulture

Horticulture is the science of production, processing, and marketing of fruit, vegetable, greenhouse, and landscape crops. Students in the horticulture option study the physiology, culture, harvesting, quality control, sales, and utilization of horticultural crops. Horticulture prepares students for careers such as orchard, vegetable farm, or greenhouse managers, landscape contractors, golf course and park horticulturists, seed and supply company representatives, state and federal nursery inspectors, and educators in schools and extension. Students will choose an area of emphasis in landscape management or in production depending on their career goals.

Required Courses
A&VS 251; AGRN 202, 203; AGRN 410; ARE course; CHEM 111, 112; BIOL 350; CS 101; ENTO 404; GEN 371 or AEM 341; HORT 220, 420, 441, 445 (Capstone); 491 or 493; MATH 126; PLSC 206; PPTH 401.

Landscape Management Area of Emphasis
LARC 105; HORT 260; HORT 360; and two courses from the following: AGEE 452, AGRN 315, AGRN 451, ARE 204, BIOL 361, ENTO 412, CE 200, HORT 262.

Production Area of Emphasis
AGRN 451; HORT 444; HORT 493; and two courses from the following: AGEE 452; AGRN 315, ARE 204, BIOL 352, ENTO 412, HORT 230, HORT 260, PLSC 453.

Bachelor of Science
Applied and Environmental Microbiology

The major in applied and environmental microbiology is ideal for students desiring a career at the forefront of human and plant health, industry, food science, and the environment. In this curriculum, future professional microbiologists are prepared with basic backgrounds in the areas of microbial ecology, environmental microbiology, soil microbiology, public health microbiology of food and water, plant pathology, and molecular biology. With supporting coursework in such areas as organic chemistry, biochemistry, genetics, plant
science, soil science, physics, calculus, and statistics students will be well prepared for employment, further educational training at the graduate level, or for professional school (medical and dental school). Employment opportunities include: environmental laboratories (federal, state, and private); pharmaceutical industry; food industry (food production and food safety); and clinical laboratories in the health care industry. This major requires 128 total hours.

**Basic Math and Science Requirements** (14 hours) CHEM 115, 116; MATH 150; STAT 211.

**Required Courses for Major** (43 hours) AGRL 111, CHEM 233, 234, 235, 236; AGBI 410; PHYS 101, 102; AGRN 202, 203; PLSC 206; GEN 371; PPTH 401; AEM 341, 401 (Capstone)

**Restricted Electives for Major** (minimum of 18 hours) AGBI 514; BIOL 312; AEM 408, 420, 445, 449, 495; ENVP 355, 460; PPTH 409, 470, 503.

**Soil Science**

The focus of the soil science major is the wise use and management of land and soil resources. This major is ideal for those students interested in soil and water conservation, soil and water quality, mined land reclamation, use of soils for construction sites, waste water treatment, and wetland preservation. Students will be prepared for positions in soil survey, soil and water conservation, wetland delineation, and environmental management with the federal or state governments, private industries, private consulting, or cooperative extension. This major also prepares students for graduate programs in earth science, environmental science, or soil science. This major requires 128 total hours. Students will choose an area of emphasis in land use or in watershed management depending on their career goals.

**Basic Math and Science Requirements** CHEM 115, 116, 231; GEOL 110, 111: MATH 150; STAT 211.

**Required Courses for Major** AGRL 111, AGRN 202, 203; AGEE 110 or CS 101; AGEE 220; ECON 201; AEM 341; ENVP 155; AGRN 310; AEM 310; PLSC 206; GEN 371; and two of the following courses: ENTO 404, GEN 371, PPTH 401.

**Restricted Electives for Major** (minimum of 15 hours) AGRN 125, 415, 417, 420, 430, 455.

**Land Use Area of Emphasis** (minimum of 12 hours) AGRN 425 (Capstone); CE 200, 351, 441; GEOL 201, 321; RESM 493.

**Watershed Management Area of Emphasis** (minimum of 12 hours) AGRN 425 (Capstone); BIOL 361; CE 347; ENVP 355, 460; GEOL 321; 463; WMAN 446.

**Minor in Aboriculture**

The minor in arboriculture is designed to provide students educational opportunities in the area of ornamental horticulture as it relates to current urban environments. Emphasis is given to the establishment and management of herbaceous and woody plants used in commercial, recreational, and home settings. The minor requires a minimum of 24 hours in forestry and horticulture related courses with a grade of C or higher in each course.

**Required Courses** – (minimum 18 credit hours) AGRN 410 (3), FOR 205 (3), HORT/LARC 260 (3), ENTO/PPTH 470 (4) or ENTO 404 and PPTH 401 (8), FMAN 315 (1), ENTO/PPTH 471 (1), FMAN 491 or PLSC 491 (3).

(Note: FMAN 491 or PLSC 491 Professional Field Experience must be related to an arboriculture topic and must be approved in advance by the director of the Division of Plant and Soil Sciences or the director of the Division of Forestry and Natural Resources).

**Elective Courses** – (minimum 6 credit hours) AGRN 315 (3), FMAN 440 (3), FOR 340 (3), HORT 262 (3), HORT 441 (3). Minor Code: U073.

**Minor in Environmental Microbiology**

The minor in environmental microbiology is designed to introduce students to the beneficial and harmful roles of microorganisms in a variety of diverse environments including plants, animals, soil, food, air, and water. Emphasis is given to the importance of microorganisms in such applied areas as public health, plant disease, pollution and pollution abatement, biological control of pests, bio-deterioration, and ecology.
Total number of required hours: 15 hours with a minimum letter grade of C in each course and a cumulative GPA of at least 2.5. Required courses: AEM 341 General Microbiology (4 hr.), and PPTH 401 General Plant Pathology (4 hr.).

Minimum of seven hours selected from the following: AEM 401 Environmental Microbiology (4 hr.), AEM 420 Soil Microbiology (3 hr.), AEM 493 Special Topics in Environmental Microbiology (*1-4 hr.), PPTH 470 Forest Pest Management (3 hr.), PPTH 493 Special Topics in Plant Pathology (*1-4 hr.), PPTH 503 Mycology (4-hr.), PPTH 409 Nematology (3 hr.). Minor Code: U048

*Maximum of four hours of special topics courses (AEM 493 or PPTH 493) can be applied toward the 15 hour total and requires approval of the division director.

Minor in Environmental Protection

The minor in environmental protection is designed to provide students the opportunity to study, through a set of selected courses, ways to safeguard the environment with emphasis on water, soil, and crop protection. Emphasis is given to the relationships among a wide range of science-based disciplines and how they collectively are applied to environmental protection. This minor requires 15 hours of required and restricted electives with a minimum letter grade of C in each course. Required courses are ENVP 155 and ENVP 460. An additional nine hours must be selected from the following courses: ENVP 355, AEM/ENVP 401, ENTO/ENVP 412, AGRN/ENVP 425, AGRN/ENVP 451, AGRN/ENVP 455. Minor Code: U061

Minor in Horticulture

The minor in horticulture is designed to provide students educational opportunities in the area of ornamental horticulture as it relates to current urban environments. Emphasis is given to the establishment and management of herbaceous and woody plants used in commercial, recreational, and home settings. This minor requires a minimum 16 hours in horticulture related courses with a grade of C or higher in each course. Required courses are PLSC 206 and HORT 220. A minimum of nine additional hours must be chosen from the following courses: HORT 420, HORT 441, HORT 444, and HORT 445. Minor Code: U062

Minor in Pest Management

The minor in pest management is designed to introduce students to various insects, plant pathogens, and weeds as pests that attack and compete with agriculture crops, ornamentals, and forest trees. Emphasis is placed on environmentally sound management system based on cultural, biological, and chemical strategies. Relationships among pests, crops, and the environment are critical in this minor. The minor requires 15 hours of pest management related courses with a grade of C or better in each course. Required courses are ENTO/ENVP 412 and PPTH 401. An additional seven hours must be selected from the following courses with no more than four hours being special topics. AGRN/ENVP 451, ENTO 410, ENTO/PPTH 470, ENTO 493, PPTH 493. Minor code: U059

Minor in Soil Science

The minor in soil science is designed to introduce students to the relationship of soils to environmental protection and agriculture production. This minor broadens and strengthens non-soils curricula where students are interested in the relationships among biological and earth science in an environmental setting. The soil science minor requires a minimum of 15 hours of soil science courses with a grade of C or better in each course. Required courses are AGRN 202, AGRN 203, and AGRN/ENVP 425. An additional eight hours must be selected from the following courses: AGRN 125, AGRN 410, AGRN 415, AGRN 417, AGRN/AEM/ENVP 420, AGRN 430, AGRN/ENVP 455. Minor Code: U060
Division of Resource Management
Timothy T. Phipps, Ph.D., Director

Programs
The Division of Resource Management offers curricula in agricultural and extension education, landscape architecture, and agricultural and resource economics. The curriculum in agricultural and resource economics allows emphasis in environmental and resource economics, or agribusiness management and rural development. Students are prepared to pursue graduate studies or work in agriculture, business, industry, government, finance, and related areas or to pursue graduate studies. The curriculum in agricultural and extension education prepares students to teach agriculture in secondary schools, enter the extension service, or accept professional employment in government, industry, or entrepreneurship. An agricultural and extension education major can also elect to specialize in environmental technology with employment opportunities available in related activities after graduation. The landscape architecture curriculum prepares students for professional careers with private firms and government agencies.

Minor in Agribusiness Management
Principles pertaining to agribusiness management requires 15 credit hours including: ARE 110, 204, 431, or 435 and 461. The remaining three or four credit hours must be chosen from: ARE 382, ARE 406, 420, 421 or 440.

Minor in Environmental Economics
Fifteen credit hours and a GPA of at least 2.0 will be counted toward the minor. Students must select 15 credit hours of courses with an environment component: one course on environmental problems or issues (3 hr.); three courses in environmental and resource economics (9 hr.); and one course on law, policy, or analysis (3 hr.). Eligible courses include: environmental problems or issues (ARE 187, ENVP 155, or FOR 140); environmental and resource economics (ARE 220, 401, and 410); and law, policy, or analysis (ARE 382, ARE 450, or RESM 493).

Minor in Equine Management
This minor is designed for students who wish to advance their knowledge of equine management practices or wish to find employment within the equine industry. Students will gain knowledge of equine management related to reproduction, nutrition, health, training methods, design of facilities, and economy of the industry. Completion of a minor in equine management will require 16 credit hours of coursework. Required courses include ANNU 260, ANS 281, ANS 344, ARE 421 and RESM 330.

Minor in Rural Community Development
This minor covers the concepts and principles pertaining to rural community development and requires courses focusing on the economy, communication and leadership, and community design principles. Total credit hours 18. Required courses: ARE 204, ARE 411, AGEE 220, AGEE 421, and two of LARC 465, LARC 466, and LARC 570.

Minor in Landscape Studies
The undergraduate minor in landscape studies is offered to any student enrolled at West Virginia University who is interested in gaining a broad understanding of the body of knowledge and the skills involved with landscape architecture. The main focus of the minor is to provide students with a comprehensive landscape architecture theoretical background, including both cultural and historical issues related to the discipline, and planning and design issues at an urban and a regional scale. Students can select among a variety of courses depending on their own interest.
Completion of a minor in landscape studies will require a minimum of 15 hours of coursework with a grade of C or better in all courses. Students completing the minor are required to take LARC 105 and LARC 212, and to select nine credit hours from the following courses: LARC 361, LARC 448, LARC 452, LARC 465, LARC 466, and LARC 570.
Agribusiness Management and Rural Development Major
Bachelor of Science

The goal of this major is to provide students with a breadth of knowledge in both the social and natural sciences upon which further professional training can be based. After graduation, students will be prepared for employment in private and public sectors of agriculture and rural development. Students with this major can expect to find employment in: agribusiness firms or farms; rural economic development agencies; financial institutions; or state and federal government agencies dealing with agriculture or natural resource management. Employment in these areas requires the essential components of this major: a broad educational background combined with knowledge of agricultural and rural economies. This major provides students with the flexibility to pursue coursework in preparation for graduate school.

General Education Curriculum
Course Requirements Hrs.
Communication.................................................................6
Basic Math and Science.......................................................13–15
The Past and Its Traditions....................................................3
Contemporary Society.........................................................3–4
Artistic Expression...............................................................3
The Individual in Society.......................................................4
American Culture..............................................................3
Western Culture.................................................................3
Non-Western Culture..........................................................3
Total ..................................................................................41–44

Required Courses
ARE 110, 150, 204, 401, 411, 431, 461, and 494; AGEE 110; ECON 201 and 202; and ECON 225 or STAT 211
Total ..................................................................................34

Restricted Electives ................................................................30
(Selected and approved in consultation with advisor; must include at least four courses from the college; capstone experience (ARE 491 or 496) is included.)
Total ..................................................................................30

Free Electives .....................................................................20–23
Total ..................................................................................128

Minor in Agribusiness Management
Principles pertaining to agribusiness management requires 15 or 16 credit hours including: ARE 110, 204, 431 or 435, and 461. The remaining three or four credit hours must be chosen from: ARE 382, 406, 420, 421 or 440.

Agricultural and Extension Education
Bachelor of Science in Agriculture

The agricultural and extension education curriculum is designed to prepare students for entry into agricultural teaching, extension, or other professional employment in government, industry, or entrepreneurship where competence in communications and leadership are required. In order to prepare career-ready graduates, the curriculum provides flexibility to develop programs in options emphasizing teacher preparation, extension education, or production and technical agriculture. Courses are selected by the student, in consultation with an advisor, that will prepare the student to achieve his or her aspirations.
<table>
<thead>
<tr>
<th>Curriculum Requirements</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Communications</td>
<td>6</td>
</tr>
<tr>
<td>Basic Mathematical Skill and Scientific Inquiry</td>
<td>13–15</td>
</tr>
<tr>
<td>The Past and Its Traditions</td>
<td>3</td>
</tr>
<tr>
<td>Contemporary Society</td>
<td>3–4</td>
</tr>
<tr>
<td>Artistic Expression</td>
<td>3</td>
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<tr>
<td>The Individual in Society</td>
<td>4</td>
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<tr>
<td>American Culture</td>
<td>3</td>
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<tr>
<td>Western Culture</td>
<td>3</td>
</tr>
<tr>
<td>Non-Western Culture</td>
<td>3</td>
</tr>
<tr>
<td>Courses in the College</td>
<td>45</td>
</tr>
<tr>
<td>Restrictive Electives</td>
<td>6</td>
</tr>
<tr>
<td>Option Requirements and Electives</td>
<td>43</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>136</strong></td>
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The three options within the agricultural and extension education major are agriculture teacher education; extension, leadership and communications; and agricultural sciences. Descriptions of these options follow.

**Agriculture Teacher Education**

An effective agriculture teacher can assist in the economic and social development of a community. Middle school, high school, and adult classes strengthened by supervised agricultural experience programs are the methods whereby the agriculture teacher helps students become involved and established in production agriculture and off-farm occupations which require agricultural knowledge and skills.

Students completing this program will meet the requirements for certification by the West Virginia Department of Education. The program provides graduates with the opportunity to become qualified to teach in the broad field of agriculture as well as to become prepared to teach in such areas as production, agribusiness, conservation and forestry, agricultural mechanics, processing, horticulture and natural resources. In addition to teaching, graduates have the opportunity for employment with governmental agencies and in private enterprise.

To be eligible for student teaching and subsequent certification to teach, the student must: possess a 2.5 grade point average on the total of all college credits, including hours earned in professional education and technical agriculture courses; must pass competency tests in reading, writing, mathematics (Praxis I), and the national teacher exam prior to student teaching (Praxis II); must pass the principles of teaching and learning test (Praxis II) for grades 7–12; and complete the required agriculture and professional education courses.

**Extension, Leadership, and Communications**

This option prepares students with a foundation for extension education, agribusiness positions related to human resource management, international and corporate training and development, agricultural literacy and public relations, political interests, and commodity service organizations.

Coursework in this option will focus on a core of agricultural courses along with emphasis in nonformal education, designing educational/training programs and professional presentations, leadership development, teaching/training methods, and interpersonal communications. A 12-credit, 12-week internship related to the student’s career objective is required.

**Agricultural Sciences**

Today agriculture faces a tremendous challenge to provide food, fiber, and industrial raw supplies for billions of people at a time when resources are becoming more limited. Agriculture, meanwhile, has become more technical and complex and qualified college graduates are needed to meet the future demands in this vital field.
The agricultural sciences option is an undergraduate studies program which allows students some measure of flexibility in meeting their own educational objectives, particularly when those objectives may not be fulfilled entirely by any other single college major. This option prepares students to enter into the broad field of production and technical agriculture. The curriculum combines a broad range of technical courses in animal science, crop and soil science, horticulture, biological systems, agricultural mechanics, and agricultural economics. Additional courses in interpersonal and group leadership and communications training give students a competitive edge in the job market.

Students who desire to become owners, managers, or employees in production and or technical agriculture realize that they need a broad-based preparation. Agriculture presents opportunities in the farming and ranching business and industry, research and development, education, communications, governmental employment, and conservation and recreation.

The experiences gained through coursework and internships prove invaluable. General agriculture internships in production and technical agriculture, agribusiness, and commodity organizations enable students to enhance their communications, problem-solving and technical abilities, and management and decision making abilities. A 12-credit, 12-week internship related to the student’s career objective is required.


**Courses required in the agricultural teacher education option** AGEE 102, 202, 426, 430, 431, 434, 438, 488, PSYC 101, 241, EDUC 200, READ 422, SPED 304, SPED 360.

**Courses required in the extension, leadership, and communications option** AGEE 102, 431, 441, 488, 491, JRL 101, PSYC 101, 241.

**Courses required in the agricultural sciences option:** AGEE 488, 12 hours of upper-level courses selected from the other divisions in the college in consultation with his/her advisor.

### Environmental and Natural Resource Economics Major

**Bachelor of Science**

The objective of this major is to provide students with the training necessary for the application of economic theory and analysis to environmental and natural resource policy. The flexibility of this major allows students, in consultation with their academic advisor, to design a program of study which focuses on environmental and natural resource issues tailored to individual interests (such as water use and quality, soil protection, waste management, or ecosystem management and land use). The curriculum reflects the breadth of training required to prepare students for careers in the private and government sectors dealing with environmental and natural resource management and policy analysis.

Students in this major can expect to find employment with state and federal government agencies or with private industry in environmental policy analysis and management of natural resources. Many students may find it desirable to obtain a graduate degree. Students completing this degree will be prepared for graduate study in environmental and natural resource economics and policy.

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Communication</td>
<td>6</td>
</tr>
<tr>
<td>Basic Math and Science (Must include two four-credit courses, each with a laboratory.)</td>
<td>14–15</td>
</tr>
<tr>
<td>The Past and Its Traditions</td>
<td>3</td>
</tr>
<tr>
<td>Contemporary Society</td>
<td>3–4</td>
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<td>3</td>
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<td>Western Culture</td>
<td>3</td>
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<tr>
<td>Non-Western Culture</td>
<td>3</td>
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<tr>
<td>Total</td>
<td>42–44</td>
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</tbody>
</table>
Required Courses ARE 220, 382, 401, 410, 450, and 494; AGEE 110; ECON 201 and 202; and ECON 225 or STAT 211; MATH 150 or equivalent.

Total .......................................................................................................................... 31

Restricted Electives
(Selected and approved in consultation with advisor; must include at least four courses from the college with at least one course in agronomy and one in plant sciences; capstone experience (ARE 491 or 496) is included.)

Total .......................................................................................................................... 30

Free Electives ............................................................................................................ 23–25

Total .......................................................................................................................... 128

Minor in Environmental Economics
Fifteen credit hours and a GPA of at least 2.0 will be counted toward the minor.

Students must select 15 credit hours of courses with an environment component: one course on environmental problems or issues (3 hr.); three courses in environmental and resource economics (9 hr.); and one course on law, policy, or analysis (3 hr.). Eligible courses include: environmental problems or issues (ARE 187, ENVP 155, or FOR 140); environmental and resource economics (ARE 220, 401, and 410); and law, policy, or analysis (ARE 382, ARE 450, or RESM 440).

Landscape Architecture
Bachelor of Science in Landscape Architecture
Landscape architecture is the art of design, planning, and arranging natural and man-made elements on the land. It applies cultural and scientific knowledge with concern for the conservation and stewardship of natural and aesthetic amenities to create an environment that serves a useful and enjoyable purpose. This involves consideration of the quality of life in urban and natural settings, as well as the interaction of humans with nature. The landscape architecture program at West Virginia University strives to equip students with techniques and skills through problem-solving in design theory, site construction, land use planning, and planting design. It emphasizes a philosophy of responsibility and commitment to ethical standards regarding the natural environment, personal relationships, and professional practice.

The faculty represents a multi-disciplinary team with practical experience in creative and scientific research, design, consultation, and public service. This diversity is the nucleus of the program, allowing for a strong undergraduate curriculum supplemented by related courses in the arts, sciences, engineering, and planning, reflecting the needs of the Appalachian region and current trends within the profession.

Graduates of the program can assume traditional landscape architectural roles, e.g., positions with design consulting firms, governmental planning departments, construction firms, transportation planning agencies, etc. In addition, WVU graduates are prepared for design and planning positions meeting the needs common to West Virginia and other rural areas.

The landscape architecture program is fully accredited by the Landscape Architecture Accreditation Board of the American Society of Landscape Architects.

Curriculum Requirements

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<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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<tr>
<td>Communications</td>
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<tr>
<td>Basic Mathematical Skill and Scientific Inquiry: (Including MATH 126, MATH 128, and PLSC 206)</td>
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<td>Non-Western Culture</td>
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CE 200...........................................................................................................................................3
Studio Art Courses................................................................................................................................6
Courses in Landscape Architecture* .................................................................................................63
Electives ...........................................................................................................................................23
Total ..............................................................................................................................................136

* In addition, each student will be required to work for at least one summer in an approved landscape architecture office or equivalent.

To be eligible to advance in proper sequence in landscape architecture, a student must attain a C grade or better for each of the following courses: LARC 120, 121, 212, 223, 231, 250, 251, 260, 261, 330, 331, 350, 351, 360, 450, 451, 465, 466, and 484 and HORT 260. Timely completion of MATH 126 and 128 and of CE 200 is also critical for advancement in the program of study.

Of the 60 hours required for a bachelor of science in landscape architecture, the following courses, or their equivalent, are required: LARC 120, 121, 212, 223, 231, 250, 251, 261, 330, 331, 350, 351, 360, 450, 451, 465/466, and 484.

A portfolio review by the faculty will be required for all students at the end of the second year of the curriculum. Projects will be submitted by the student for formal review by the entire landscape architecture faculty. If the work is unsatisfactory, the student will not be allowed to proceed to the next level of coursework until his or her work meets satisfactory standards.
Degrees Offered

**Bachelor of Arts**
- Biochemistry
- Chemistry
- Communication Studies
- Criminology and Investigations
- Economics
- English
- Environmental Geoscience
- Foreign Languages
- Geography
- History
- Individualized Major
- International Studies
- Mathematics
- Multidisciplinary Studies
- Philosophy
- Physics

**Bachelor of Science**
- Biology
- Chemistry
- Computer Science
- Forensic and Investigative Science
- Geology
- Industrial Mathematics and Statistics

**Bachelor of Multidisciplinary Studies**
**Bachelor of Social Work**

The alphabetical listing of programs contains additional information about degree programs and interdepartmental major programs.

**History of the College**

Starting with the initial charter of WVU by the Legislature in 1867, the liberal arts and the sciences were an important and central element of the University. The College of Arts and Sciences was formally created in 1895, and 11 students received degrees from the college in 1896. In the 1911-12 academic year, the West Virginia Chapter of Phi Beta Kappa was established within the College of Arts and Sciences.

On July 1, 1993, the name of the college was changed to Eberly College of Arts and Sciences to recognize and commemorate the generosity of the Eberly family, the Eberly Foundation, and the Eberly Family Charitable Trust.

Today, the Eberly College of Arts and Sciences awards degrees to around 2,000 students every year. It remains the heart of West Virginia University, providing students with a liberal education in the areas of literature and the humanities, mathematics and natural sciences, and social and behavioral sciences. In addition to teaching, the college’s 265 faculty members are actively engaged in research and scholarship, publishing approximately 400 articles and five or more books each year.
Mission

The primary mission of the Eberly College of Arts and Sciences is to promote the full development of the student as an individual and as a member of society. Students earning degrees in the college fulfill certain broad basic-education requirements and study at least one subject in some depth. The degree requirements are intended to carry forward what is usually termed "a general education," thus providing a foundation for continued growth and development after graduation.

Clearly, one purpose of a college education is to help students acquire knowledge and skills both for self-fulfillment and in preparation for the roles they will subsequently play in society. A less obvious but equally important purpose is to impart certain attitudes to students. In the interest of fulfilling both purposes, the Eberly College of Arts and Sciences strives to help students acquire the specific attributes listed below.

Knowledge

- A knowledge of the main principles, facts, concepts, and theories in a major area of concentration.
- A knowledge of Western and non-Western civilizations: their distinctive characters (belief systems, languages, intellectual, and artistic contributions), and their origins, development, and present states.
- A knowledge and appreciation of the environment in which one operates (physical, biotic, social, technological, aesthetic), including knowledge of change processes (evolutionary, technological, social, intellectual) and knowledge of past adaptations as a basis for predicting the consequences of contemporary actions and changes.
- A knowledge and appreciation of the arts, of their humanizing and energizing effects, and of one's connection with the arts through one's impulses toward creativity.
- A familiarity with the various technical languages (statistics, linguistics, etc.) that are increasingly necessary to understand the major approaches in the sciences and humanities.

Skills

- Skills in the sophisticated techniques of a major area of concentration.
- Skills in communication using a variety of channels including writing, speaking, reading, listening, and viewing.
- Skills in analyzing and solving problems by recognizing ambiguities, using proper logic, marshalling pertinent facts and arguments, and using mathematical techniques where appropriate.
- Skills in the use of the imaginative and synthetic processes of the mind, including innovative thinking and recognition of the connections among a variety of intellectual frameworks and matrices.
- Skills involved in decision making, including the ability to recognize alternatives, project consequences, and assume the responsibility for making decisions.

Attitudes

- An attitude of dispassionate self-appraisal, based upon an understanding of one's own nature and characterized by an awareness of one's own strengths and weaknesses.
- An attitude of open-mindedness, permitting one to see beyond the limits of one's own occupation, economic status, language, and culture, and including a respect for opinions different from one's own.
- A willingness to recognize and respect ethical obligations and the rights of others.
- A commitment to truth-seeking, characterized by objectivity, utilization of evidence, intellectual curiosity, and the search for wisdom.
Admission to Arts and Sciences Degree Programs

High school students and transfer students are admitted to major or pre-major programs.

Minimal college requirements for admission into most degree programs are a 2.0 overall average, and a defined minimum average in courses already completed in the discipline of the degree program. Specific requirements are described in departmental sections that follow.

Students planning to qualify for teacher certification and earn a degree from the Eberly College of Arts and Sciences should check with their advisors and the College of Human Resources and Education to determine the requirements for such certification.

Requirements for Degrees

B.A. Requirements

Students must complete WVU General Education Curriculum requirements, college B.A. requirements, major requirements, and electives to total 128 hours.

1. Foreign Language. Completion of level 204 (fourth semester). Students with no prior instruction in a language will satisfy this requirement by successful completion of courses 101, 102, 203, and 204 (or other approved courses) in that language. Students with prior instruction in a language must take the placement test in that language and begin at the level they are placed and complete 204. Students who place beyond the 204 level will satisfy the requirement by successful completion of one appropriate 300-level course in that language. (For information about placement and explanation of various options and other approved courses, see listings under Foreign Languages in the WVU Undergraduate Catalog, go to http://forlang.wvu.edu, or contact the department.) Courses used to fulfill this requirement are in addition to those used to fulfill any GEC requirement.

2. International Studies. Students must satisfactorily complete three semester hours of study of foreign countries or cultures other than those of modern western Europe or Canada, and/or their role and interaction within the contemporary international system. Completion of a course that meets GEC Objective 9 (non-western cultures) will fulfill this requirement.

3. Fine Arts. Students must satisfactorily complete a minimum of three semester hours focused on the fine arts. Completion of a course that meets GEC Objective 5 (artistic expression) will fulfill this requirement.

4. Grade Point Average. A cumulative GPA of 2.0 is required for graduation.

5. Individual department requirements may be more directive than the college’s core B.A. requirements, so long as those requirements are met.

B.S. Requirements

Students must complete WVU General Education Curriculum requirements, college B.S. requirements, major requirements, and electives to total 128 hours.

1. Foreign Language. Students completing an Eberly College bachelor of science program are encouraged (but not required) to complete two semesters of one foreign language beyond language taken at the high school level. Individual B.S. programs may require foreign language.

2. International Studies. Students must satisfactorily complete three semester hours of study of foreign countries or cultures other than those of modern western Europe or Canada, and/or their role and interaction within the contemporary international system. Completion of a course that meets GEC Objective 9 (non-western cultures) will fulfill this requirement.

3. Mathematics. Satisfactory completion of MATH 155 (or MATH 153 and 154) is required for students earning an Eberly College B.S. degree.

4. Science. Students must complete 24 hours of science coursework, with a minimum of two courses in each of three disciplines, selected from the following pairs of courses. There are six disciplines: biology, chemistry, computer science, geology/geography, math/statistics, and physics. Courses used to fulfill this requirement may be used simultaneously to satisfy GEC requirements.
Courses satisfying the B.S. science requirement are the following:

**Biology:** BIOL 115 and BIOL 117

**Chemistry:** CHEM 111 and CHEM 112, or CHEM 115 and CHEM 116, or CHEM 117

**Computer Science:** CS 110 and CS 111

**Geology/Geography:** (GEOL 101/102 or GEOL/GEOG 110/111) and (GEOL 103/104 or GEOL 201* or GEOL 203* or GEOL 230*)

**Math/Statistics:** MATH 156 and (MATH 251 or STAT 211* or STAT 215*), or (STAT 211* or STAT 215*) and (STAT 312* or STAT 331* or STAT 421*)

**Physics:** PHYS 101 and PHYS 102, or PHYS 111 and PHYS 112

*Note: A three-credit-hour course. If completion of three pairs of courses—one pair from each of three disciplines, as grouped above—does not equal a total of 24 hours, students may elect any course(s) from the above list to complete the minimum of 24 hours, with the following exceptions: students may earn credit for only one set of PHYS courses (PHYS 101 and 102, or 111 and 112); students may earn credit for only one set of CHEM courses (CHEM 111 and 112, or 115 and 116, or 117 and 118); students may not earn credit for both STAT 211 and 215; students may not earn credit for both GEOL 103 and 230.

5. **Grade Point Average.** A cumulative GPA of 2.0 is required for graduation. Individual department requirements may be more directive than the college’s core B.S. requirements, so long as those requirements are met.

**Credit Limitations**

The following do not count toward the hours required for graduation:

- Courses in which the grade received is other than A, B, C, D, P, or S. Credit by examination, however, is counted toward hours required for graduation unless it was granted for courses otherwise excluded in this list.
- Any course passed more than once, unless a course is designated as repeatable in the catalog.
- For all B.A. candidates more than 42 hours in one subject (e.g., BIOL, FRCH, POLS), with the following exceptions: (1) for English (ENGL), the maximum excludes credits in English 101, 102, 103; (2) for foreign languages, the maximum excludes the 6–12 hours used to fulfill the foreign language requirement of the Eberly College of Arts and Sciences; (3) for sociology and anthropology (SOCA) the maximum allows 42 hours in sociology and 42 hours in anthropology; (4) for all B.A. candidates in the college, one-credit orientation courses numbered 199, and professional field experience courses numbered 491 are not counted against the maximum hours in one subject.
- More than 72 hours of transfer credit from accredited junior or community colleges.
- More than 18 semester hours of credit for which only a grade of P is recorded. (See Pass/Fail Grading.)
- Any course in which the final grade is F. The student must take the course again in residence at WVU if the student wishes to replace the F through the D/F repeat options.

**Minimum and Maximum Load**

A minimum of 12 hours in a semester is required for full-time status in the Eberly College of Arts and Sciences. No student enrolled in the college may enroll for more than 19 hours in a semester without permission from the Academic Standards Committee.

**Credit by Examination**

Credit by examination provides students the opportunity to receive credit in courses by demonstrating that they have acquired sufficient knowledge of a subject without formal enrollment in a course or study in the classroom. This opportunity is offered only to students enrolled full- or part-time at the University. The initiation of a credit-by-examination request does not entitle a student to special in-class instruction or tutoring by an instructor.

Students may petition to receive credit by examination for any course listed by a department in the college as a course for which credit by examination is appropriately awarded. Applications, course lists, and examination schedules are available each semester.
A student may apply to challenge a course for credit by examination if:

• The student is at the time of examination registered in the University;
• The student’s official record does not show credit for the course (i.e., any grade of S, P, A, B, C, D, or I);
• The student is not officially enrolled in the course at the time of examination (a student who withdraws from a course after the end of the official registration period is officially enrolled in that course until the end of the semester, and not eligible to take the course by examination during that semester); and
• A grade of F has not been recorded on the student’s record for the course within two calendar years of the date of the examination. A student may challenge the same course by examination only two times.

Credit only (not a grade) will be awarded for the successful completion of the examination with a grade of C or higher. Because a comprehensive examination is used to establish credit, it is the policy of the college that a student should demonstrate at least an average (C) knowledge of course content to receive any credit. The criteria for earning a C are made known in advance to students who request the information from the department offering the course examination.

A non-refundable fee is charged for credit by examination and must be paid within the prescribed period prior to each examination period.

Eberly College of Arts and Sciences Requirements
Degree Program Requirements
Major Subject Requirements are listed separately in the catalog by department or degree program. To qualify for graduation, the student must have spent at least two semesters and have accumulated a minimum of 30 semester hours and completed major requirements in a degree program.

Transfer Credit Except with the approval of the department chair or degree program coordinator, no upper-division course (300 or 400 level) in the major taken at another institution will be counted toward meeting the requirements of the major.

Grade Point Average All departments and degree programs in the college require at least a 2.0 (C) cumulative grade point average for admission; some departments or programs require a higher grade point average (overall or in the discipline) for admission or graduation. See specific departments for requirements.

Academic Minors
Most major programs in the Eberly College of Arts and Sciences also offer formal academic minors. In addition, minors are available in Africana studies, leadership studies, and Native American studies. If a student successfully completes the requirements for a formal minor, this will be recorded on the student’s official record and will appear on transcripts.

Requirements for academic minors are set by the department offering the minor. A formal minor must include at least 15 hours of coursework with a minimum of nine hours at the upper-division level (course number of 300 or above). Specific courses may be required as well as a minimum grade or grade point average for courses in the minor. Courses in the minor may not be taken pass/fail. The minor field may not be the same as the student’s major field.

Application for Graduation and Diploma
All candidates for degrees in the Eberly College of Arts and Sciences must complete an application for graduation and diploma in 221 Armstrong Hall. The application should be completed during the semester prior to the candidate’s expected semester of graduation to allow the student’s records to be evaluated for completion of college and University requirements. If a student does not graduate on the date for which the student applied initially, the student must re-apply for a later date. No candidate can graduate without completing an application.
Africana Studies Program
Robert Maxon, Coordinator
http://www.wvu.edu/~asp

Africana Studies Minor
The Africana Studies Program is an academic unit within the Eberly College of Arts and Sciences. It offers a multidisciplinary minor, which seeks to analyze the African world experience from the point of view of African peoples and those of African descent. The broad educational purpose of the program is to engender among all students an intellectual appreciation and understanding of the history and cultures of people of African descent throughout the world.

Requirements
The Africana studies minor requires: 15 credit hours, including ASP 220 and ASP 420 (six hours), and nine additional hours in two subject areas, six of them upper division (300 and above), selected from ENGL 139, 154, 254; FLIT 215, 266, 271; GEOG 243, 293, 443; HIST 427, 428, 429, 430, 433, 434, 451, 452; MUSIC 175, 477, 492B; POLS 335, 358; SOCA 235, 256 or any ASP offerings (e.g. ASP 293, 493). Grades of C or higher must be earned in all courses applied to the minor. Students are encouraged to work with the ASP coordinator to complete an individualized curriculum plan. Further information about the program may be obtained from the Department of History, 220 Woodburn Hall, P.O. Box 6303, Morgantown, WV 26506-6303 or visit us on the web at http://www.wvu.edu/~asp/.

Faculty Associates
Faculty members with interest in African and diaspora studies from across the University are affiliated with the Africana Studies Program through their teaching, research, and service.

Biochemistry
Jeffrey D. Wells, Biology Chair
Terry Gullion, Chemistry Chair
http://www.as.wvu.edu/biochem.html

Degree Offered
Bachelor of Arts

Nature of Program
The biochemistry curriculum prepares students for careers requiring a strong background in basic principles of the physical and life sciences. Students may earn either the bachelor of science (B.S.) in biochemistry through the Division of Animal and Veterinary Sciences in the Davis College of Agriculture, Forestry, and Consumer Sciences, or a bachelor of arts (B.A.) in biochemistry, with an area of emphasis in either molecular biology or in chemistry, through the interdepartmental bachelor of arts program in the Eberly College of Arts and Sciences.

Students completing a biochemistry major are prepared for professional employment in the expanding fields of agricultural and environmental sciences, chemical industry, health-related industries, and biotechnology-based industries. The curriculum provides students with the interdisciplinary background in biochemistry, biology, chemistry, mathematics, physics, and molecular biology necessary as preparation for professional schools of human and veterinary medicine, dentistry, optometry, and pharmacy. It also provides strong preparation for graduate study in fields such as animal and plant agriculture, biochemistry, biology, biotechnology, chemistry, food science, nutrition, and physiology.

Performance Requirements
To maintain biochemistry major status and to graduate, students must maintain at least a 2.0 overall GPA and a 2.0 cumulative GPA in coursework in biology, chemistry, and biochemistry.
Degree Requirements

A total of 128 hours is required for graduation. The biochemistry core curriculum includes the following required courses (48 hours): AGBI 199; MATH 155 (or MATH 153 and 154) and 156; PHYS 101 and 102 or PHYS 111 and 112; BIOL 115, 117, 219, and 310; CHEM 115, 116, 233, 234, 235, 236.

Following completion of the biochemistry core curriculum, students choose to pursue either a molecular biology area of emphasis or a chemistry area of emphasis. Completion of the molecular biology area of emphasis requires 30 hours beyond the biochemistry core curriculum. The following courses are required (20 hours): BIOC 339 or AGBI 410/411; CHEM 215, 341 and 342; BIOL 313 or 410; Senior Seminar in Biochemistry; and a minimum of four hours of research (BIOL 386 or BIOL 486 or BIOC 492). The remaining ten hours may be selected from the following courses: BIOL 312, 313, 315, 324, 386, 410, 411, 412, 413, 436, 437, 486, 493; BIOC 492.

Completion of the chemistry area of emphasis requires 30 hours beyond the biochemistry core curriculum. The following courses are required (18 hours): AGBI 410/411; CHEM 215, 341, 342, 401, 403 (which serve as the capstone experience); BIOL 313 or 410; and Senior Seminar in Biochemistry. The remaining 12 hours may be selected from the following courses: BIOL 313, 436, 493; CHEM 310, 312, 313, 335, 339, 411, 422, 491, 497, 514, 531, 547; BIOC 492. The student’s program of study must include at least one CHEM course numbered 310 or higher. CHEM 117 and 118 may be substituted for CHEM 115, 116, and 215.

Biochemistry Program Honors

The option of graduating with biochemistry program honors is available to students with a 3.5 overall grade point average and the approval of the faculty in the department of the student’s area of emphasis. Graduation with biochemistry program honors includes a senior thesis based upon an approved research project conducted under the supervision of a faculty mentor. For further information, and to apply for admission, qualified students should consult their advisors.

Biology

Jeffrey Wells, Chair
Richard Thomas, Associate Chair for Undergraduate Advising and Recruitment
Clifton Bishop, Associate Chair for Undergraduate Assessment and Curriculum Development
http://www.as.wvu.edu/biology.html

Degrees Offered

Bachelor of Arts
Bachelor of Science

Nature of Program

The Department of Biology offers two degree programs, the bachelor of science and the bachelor of arts in biology. Pre-medical and environmental biology tracks are available in either degree program. These two programs are structured to meet the foundational needs of all students who are interested in a career in the broad area of the life sciences.

The undergraduate programs in biology provide excellent preparation for students planning to apply to graduate programs in the biological sciences or to professional schools, including medical, osteopathic, dental, physical or occupational therapy, optometry, pharmacy, veterinary medicine, physicians assistant, and chiropractic schools and programs. A degree in biology prepares students for a wide range of careers in the biological sciences including medicine, biotechnology, genetics, forensics, environmental biology, and other biologically related technical fields in government and private industry. With appropriate electives, a student with a degree in biology may also choose to enter the fields of law, journalism, education, business, health care administration, pharmaceutical sales, or work for a variety of federal agencies.
After completing an initial four-semester core sequence in the biological sciences, students in the biology B.A. program may choose to specialize in courses from four major areas of biology: cellular and molecular biology, organismal biology, ecology and evolution, or integrative biology. Those students pursuing the B.S. degree in biology are required to take at least one course from each of the major areas of biology to ensure an advanced broad-based knowledge of biology.

Irrespective of the degree program chosen, students will experience a wide variety of classroom environments from large lecture sections to small group discussions and intensive laboratory-oriented courses. Laboratory courses include topics such as comparative anatomy, recombinant DNA technology, plant ecology, plant physiology, and molecular endocrinology as well as many other laboratory experiences across the biological disciplines.

The two programs are similar during the first two years. They differ primarily in their mathematics requirements and in their biology requirements—the bachelor of science program requires more upper-division biology courses.

**Admission Requirements**

Requirements for admission to degree programs in biology include completion of BIOL 115, BIOL 117, and CHEM 115 with a minimum of C in each; a minimum GPA of 2.0; and a minimum GPA of 2.0 in all attempted biology courses.

**Bachelor of Science Requirements in Biology**

The B.S. in biology requires a minimum of 38 hours in biology or approved courses in the biological sciences with 128 hours total required for graduation. Required courses include:

- Biology: BIOL 115, 117, 219, 221, and 321 which must be taken in this sequence.
- Chemistry: CHEM 115 or 117 (which should be taken concurrently with BIOL 115 if possible); CHEM 116 or 118; CHEM 233, 234, 235, and 236.
- Mathematics: MATH 155 (or MATH 153 and 154), STAT 211, MATH 156 (optional).
- Physics: PHYS 101 or 111 and 102 or 112.

The inclusion of MATH 156 and PHYS 111 and 112 is strongly recommended.

Bachelor of science candidates must take 21 hours of electives selected from any of the following four groups of courses. At least two of the selected courses must have a laboratory and at least one course must be selected from each of the four groups.

- **Group I. Cell and Molecular Biology:** BIOL 310, 311, 312, 313, 315, 316, 324, 325, 410, 411, 412, 413, 414, 415, and 432.
- **Group IV. Integrative Biology:** BIOL 302, PHYS 225, AGBI 410 or BIOC 339 or BIOC 531.

Only two of the non-BIOL courses listed above can be used to fulfill the 21-hour elective requirement. With permission from the department, students may enroll in BIOL 386 and 486 for credit; however, only six hours of BIOL 386 and 486 may be used towards the 21-hour elective requirement. Graduate (500-level) courses in biology may be taken if approved by the dean and department.

BIOL 235, 293, 491, and 493 do not satisfy the required 21 hours of electives in biology. They can serve as general electives.

**Bachelor of Arts Requirements in Biology**

The B.A. with a major in biology requires a minimum of 32 hours to a maximum of 42 hours in biology, with 128 hours total required for graduation. Required courses include:

- Biology: BIOL 115, 117, 219, 221, and 321 which must be taken in this sequence.
- Chemistry: CHEM 115 or 117 (which should be taken concurrently with BIOL 115), CHEM 116 or 118, 233, 234, 235, and 236. Agricultural Biochemistry (AGBI) 410 may be taken in lieu of CHEM 234 and 236 with permission of the biology graduate and professional schools.
• Mathematics: MATH 155 (or MATH 153 and 154) and MATH 156 or MATH 150 and STAT 211.
• Physics: PHYS 101 or 111 and 102 or 112.
• Fifteen hours of required biology electives, one of which must have a laboratory, may be selected from the following list: BIOL 386 (limited to four hours of credit), 486 (limited to four hours of credit), 301, 302, 310, 311, 312, 313, 315, 316, 324, 325, 336, 337, 338, 339, 340, 341, 350, 351, 352, 353, 361, 362, 363, 410, 411, 412, 413, 414, 415, 436, 437, 438, 439, 440, 441, 450, 461, 462, 463, 464, 493 (B and above), PHYS 225, AEM 341, AEM 401, GEOL 331, AGBI 410 or BIOC 339 or BIOC 531.

Only one approved non-BIOL course can be used to fulfill the 15-hour elective requirement. Permission of the department must be obtained to enroll in BIOL 293, 386, 486, 491, and 493A; however, only four credit hours of 386/486 may be used towards the 15-hour elective requirement. Graduate (500-level) courses in biology may be taken if approved by the dean and department.

BIOL 293, 235, 491, and 493A do not satisfy the required 15 hours of electives in biology. They can serve as general electives.

Pre-Medical Bachelor of Science Requirements in Biology

Biology is the most popular major for students intending to enter medical school both at WVU and nationwide. A biology degree provides the student with all the preparation necessary for medical school and the medical school entrance exam—the MCAT. The courses included in this area of emphasis have been found to improve both performance and confidence of students attending medical school. Students with aspirations to attend top-rank-medical schools should include at least three hours of independent research (BIOL 386 or BIOL 486) in their program of study if they are to be competitive.

Students intending to graduate with a B.S. in biology with a premedical emphasis must take a minimum of 21 hours of upper division courses. In addition to the introductory courses listed for the B.S., students must take the following courses:
• General requirement: BIOL 310, 436, and 440.
• Biochemistry requirement: one of AGBI 410, BIOC 339. Seniors with good GPAs may take a 550-level biochemistry course if they obtain departmental permission.
• Ecology and evolution requirement: One of BIOL 338, 461, 464.
• Laboratory requirement: At least one of BIOL 315, 336, 441, AEM 341.
• Remaining hours must be chosen from: BIOL 302, 312, 313, 315, 316, 324, 325, 337, 348, 386, 410, 411, 412, 413, 438, 486, or PHYS 295.

Note: Students may only count one of AGBI 410, BIOC 339, AEM 341, or PHYS 295 towards their 21 hours.

Pre-Medical Bachelor of Arts Requirements in Biology

Students intending to graduate with a B.A. in biology with a premedical emphasis must take a minimum of 15 hours of upper division courses. In addition to the introductory courses listed for the B.A., students must take the following courses:
• General requirement: BIOL 310, 436, and 440.
• Biochemistry requirement: One of AGBI 410, BIOC 339. Seniors with good GPA’s may take a 550-level biochemistry course if they obtain departmental permission.
• Remaining hours must be chosen from: BIOL 302, 312, 313, 315, 316, 324, 325, 336, 337, 338, 348, 386, 410, 411, 412, 413, 438, 441, 461, 464, 486, or AEM 341.

Note: Students may only count one of AGBI 410, BIOC 339, AEM 341, or PHYS 295 towards their 21 hours.
Honors Program
A departmental honors program for qualified students provides the opportunity to do independent research. To be eligible, a student must have a 3.4 overall average and the approval of the departmental honors faculty. Qualified students should consult their advisors about admission.

Individual original research, a senior thesis, and a seminar are required parts of the honors program, which requires three semesters to complete.

Bennett Department of Chemistry
Terry Gullion, Chair
Jeffrey L. Petersen, Associate Chair
http://chemistry.wvu.edu/

Degrees Offered
Bachelor of Arts
Bachelor of Science

Nature of Program
The Bennett Department of Chemistry offers three degree programs: the bachelor of science with a major in chemistry, the bachelor of arts with a major in chemistry, and the bachelor of arts in biochemistry with an area of emphasis in chemistry. These programs meet the needs of all students who have an interest in the broad field of chemistry.

The Department of Chemistry is located in Clark Hall, a state-of-the-art teaching facility for chemistry. Clark Hall offers many new instruments, numerous safety features, excellent ventilation and ample hoods, and complete accessibility for the physically handicapped. The department also has modern research facilities in the adjacent Chemistry Research Laboratory building, where advanced undergraduates may participate in research projects.

The bachelor of science with a major in chemistry is approved by the American Chemical Society. This program is for students who desire to qualify for professional positions in industrial and governmental laboratories as well as those who plan to do graduate work in chemistry or allied areas in preparation for research careers in industry or academia.

The bachelor of arts with a major in chemistry is for students who pursue careers requiring a good background in the basic principles of chemistry. Areas such as medicine, dentistry, or other health-related sciences; secondary school teaching; chemical laboratory technical work; law or business may be pursued with a proper choice of electives.

The two programs are similar during the first two years. Students in the B.S. program should complete the calculus requirement as soon as possible as a prerequisite for both the physics and physical chemistry sequences. The two degree programs differ primarily in the chemistry requirements. The B.S. program requires more upper-level chemistry courses than the B.A. program.

Chemistry Scholarships
In addition to financial aid offered by the University, the department maintains five scholarship programs specifically for chemistry majors. The John A. Moore Trust Scholarships, the Charles L. Lazzell Scholarship, the Carpenter Family Scholarship, the Robert L. and Patricia Miller Stultz Chemistry Scholarship, and the Hodge Scholarships are awarded to students in either the B.S. or B.A. programs with records of outstanding achievement and demonstrated financial need. Several of these scholarships are restricted to West Virginia residents. Scholarship recipients are expected to remain as chemistry majors and to maintain a 3.0 average in their degree programs in order to be eligible for continued support.

Admission Requirements
In addition to college requirements, admission to either program and continuance in each requires a cumulative average of 2.0 or higher for courses in chemistry taken in the WVU Department of Chemistry.
Degree Requirements

Bachelor of Science with a Major in Chemistry

A total of 128 hours is required, subject to the general course exclusions for all degrees. The following courses are required: CHEM 117 and 118 or CHEM 115, 116, and 215; CHEM 233, 234, 235, 236, 310, 313, 335, 346, 347, 348, 349, 401, 403, 422, 423, AGBI 410, plus six hours of approved chemistry electives: MATH 155 (or MATH 153 and 154), 156, 251; Physics (PHYS) 111, 112. The six hours of approved chemistry electives must be selected from the following courses: CHEM 312, 339, 411, 450, 460, 463, 490, 493, 496, 497, 498, 514, 531, 532, 547; subject to the restriction that only three hours of CHEM 490, 493, 496 or 497, separately or combined, may be counted toward the six-hour requirement. The following courses in other areas are recommended for consideration as general electives: Computer Science (CS) 101; ENGL 305; MATH 261, 465; PHYS 314, 451; STAT 331. A 2.0 average must be maintained in all chemistry courses above CHEM 236. A C or better grade in all prerequisites for chemistry courses is required for chemistry majors; the courses involved are chemistry courses, PHYS 111 and 112; MATH 155 (or MATH 153 and 154), 156, and 251.

Bachelor of Arts with a Major in Chemistry

The following courses are required: CHEM 115, 116 and 215, or CHEM 117 and 118; CHEM 233, 234, 235, 236, 341, 342, 401, 403 plus seven hours of approved chemistry electives; MATH 155 (or MATH 153 and 154), 156; PHYS 101, 102. The seven hours of approved chemistry electives must be selected from the following courses: CHEM 310, 312, 313, 335, 339, 411, 422, 423, 450, 460, 463, 490, 493, 496, 497, 498, 514, 531, 532, 547, subject to the restriction that only three hours of CHEM 490, 493, 496, or 497, separately or combined, may be counted toward the seven-hour elective requirement. A grade of C or better in all prerequisites for chemistry courses is required for chemistry majors; the courses involved are chemistry courses, PHYS 101 and 102; MATH 155 (or MATH 153 and 154) and 156. Also, a 2.0 average must be maintained in all chemistry courses above CHEM 236.

Options

Students in the B.A. program may use AGBI 410 to meet part of the seven-hour chemistry elective requirement; however, at least three hours must be selected from chemistry courses numbered 310 or higher.

Students in the B.A. program may take CHEM 346, 347, and 348 in lieu of CHEM 341 and 342 and three hours of chemistry electives. CHEM 349 may be taken as two hours of chemistry elective.

Students in either degree program may seek admission to the departmental honors program. A student must have a 3.5 average in chemistry courses taken at WVU and must have the endorsement of the chemistry faculty. A student may apply for admission to the program at any time after the student’s first semester and no later than three semesters before graduation.

The program includes a written report based upon a research project performed under the supervision of a member of the chemistry faculty. For further information students should consult the associate chairperson.
Communication Studies
Matthew M. Martin, Chair
Andrea Weber, Undergraduate Coordinator
http://communicationstudies.wvu.edu/

Degree Offered
Bachelor of Arts

Nature of Program
The Department of Communication Studies offers a curriculum to meet the needs of liberal arts and pre-professional students oriented toward communication-related careers. The undergraduate curriculum focuses upon the application of theory and research in human communication to a variety of personal, social, and organizational settings. Majors may elect to follow either a data analysis specialty or an applied communication emphasis. All majors complete a capstone sequence that consists of two courses intended to integrate academic coursework and apply course material to real-world experience.

Data Analysis Specialty
This curriculum is designed for students who desire a broad, liberal-arts emphasis or who plan to enter graduate study in communication. Special emphasis is given to the design, collection, and analysis of human communication data. In addition, students acquire background in interpersonal, nonverbal, organizational, and mass communication.

Admission Requirements
To be admitted to the major, students must have a cumulative grade point average (GPA) of 3.0; a cumulative 3.0 GPA in all communication studies classes; completed COMM 200 and 201 with a combined GPA of 3.0; and completed at least 30 hours of coursework.

The data analysis specialty area of emphasis requires 128 hours, of which students must complete a minimum of 36 hours in communication studies that includes COMM 200, 201, 401, 403, and 491. While students may take more than three credits of COMM 491 Field Experience, only three credits of 491 will count toward the necessary 36. All students must complete a minimum of 30 hours of credit, 21 of which must be in communication studies, following the semester in which they were admitted to this program. Students must also complete 21 hours of coursework outside of the department. Within these 21 hours, students must complete CS 101, STAT 211 or ECON 225, MATH 126, and PSYC 202.

Applied Communication Studies
This curriculum is designed for students who plan careers in business or government organizations. Along with a core of general communication coursework, it allows students to design a plan of study that will meet their varying interests and career goals.

Admission Requirements
To be admitted to the major, students must have a cumulative grade point average (GPA) of 2.5; a cumulative GPA in all communication studies classes of 2.5; completed COMM 200 and 201 (prior to admittance), 403, and 491 (following admission to the program). While students may take more than three credits of COMM 491 Field Experience, only three credits of 491 will count toward the necessary 36. Additionally, within the 36 hours of communication studies courses, students must complete 15 hours from the following (Group A): COMM 105, 202, 306, 307, 308, 309, 316, 317, 404, 405, 406, and 408. An additional three hours are selected from the following (Group B): COMM 212, 303, 304, 305, and 314. All students must complete a minimum of 30 hours of credit, 21 in communication studies, following the semester in which they are admitted to this program.

Students must also complete 21 hours of coursework outside of the department. Within these 21 hours, students must complete CS 101 and STAT 111. The department
Eberly College of Arts and Sciences

recommends that STAT 111 be taken prior to COMM 201. Additional decisions involving elective coursework to fulfill this 21-hour requirement will be made in consultation with a communication studies advisor.

Graduation

Students must obtain a cumulative GPA of 2.5 in all courses in the department to be certified for graduation with a major in communication studies. Courses in communication studies that the student wishes to count toward the major must be completed with a grade of C or better. The minimum requirement for a major in communication studies is 36 hours. A maximum of 42 hours in communication studies may be counted toward graduation.

Advisement

Before or during the second semester of the freshman year, students interested in pursuing a major in communication studies should consult with a department advisor.

Minor in Communication Studies

Students may elect to complete a 15-credit-hour minor in the field of communication studies. This minor is designed to provide a broad overview of the field. Requirements are: (a) COMM 100 + 102, or 100 + 104, or 112, or 122 or 303 (three hours); (b) COMM 105 and 306 and 308 (nine hours); (c) COMM 305 or 309 or 316 (three hours). A GPA of 2.0 in courses counted toward the minor is required.

Computer Science

Brian D. Woerner, Chair
John M. Atkins, Associate Chair for Academic Affairs
http://www.lcsee.cemr.wvu.edu/

Degree Offered

Bachelor of Science

Curriculum in Computer Science

Degrees Offered

Bachelor of Science In Computer Science (College of Engineering and Mineral Resources)
Bachelor of Science In Computer Science (Eberly College of Arts and Sciences)

Computer science is a discipline that involves the understanding and design of computational processes. The discipline ranges from a theoretical study of algorithms and information processing in general, to a practical design of efficient and reliable software that meets given specifications. This differs from most physical sciences, engineering included, that separate theoretical underpinnings of the science from applications within it.

Partly because of the dual nature of computer science, and partly because students need flexibility in choosing a plan that best fits their needs, the department offers two B.S. degree programs: one degree conferred by the College of Engineering and Mineral Resources (CEMR), the other by the Eberly College of Arts and Science (ECAS).

Nature of the Program

The B.S.C.S. option through CEMR introduces students to engineering principles through Engineering 101/199 and required courses in computer engineering. Chemistry and a two-semester sequence in physics is also required, but the student gains flexibility in choosing senior-level computer science (CS) courses, which leaves open the opportunity to explore much of software engineering or other areas. This option is well-suited for freshman engineering students who meet pre-computer science entrance requirements, and for engineering students who want to double major in computer science and computer engineering.
The B.S.C.S. option through ECAS offers flexibility in choosing a liberal education that could include courses, even dual majors, offered in many colleges: Eberly College of Arts and Sciences, Business and Economics, Creative Arts, or any others for which course prerequisites are satisfied. The required two-semester sequence in science can be fulfilled through a variety of science disciplines, as can the additional third lab science required course. A few requirements on selection of senior level CS courses lean to the theoretical side of the discipline. This option is best suited for students who want a more liberal education with the opportunity to pursue minors or double majors outside of engineering.

From WVU Admission to Completion of B.S.C.S. Degree: CEMR and ECAS

Entering freshman and transfer students face admission standards, pre-degree requirements, and degree requirements before completing their chosen program. Transfer students, especially those already having college credit for mathematics or computer science courses, need to read the Transfer Students section.

1. WVU and College Admission

   Admission to the pre-computer science program in Lane Department of Computer Science and Electrical Engineering requires prior admission to WVU and to either the Eberly College of Arts and Sciences (ECAS) or CEMR, depending on the degree program chosen. WVU and college requirements can be found in the index of this catalog. Look under:
   • Admission, Freshman (for WVU)
   • Arts and Sciences (for ECAS)
   • Engineering and Mineral Resources (for CEMR)

2. Pre-Computer Science Admission Lane Department of Computer Science and Electrical Engineering.

   At this point, all students have satisfied Section 1. Those pursuing a bachelor’s degree through CEMR automatically become members of the pre-CS program. Those in the ECAS degree program also become members automatically provided they satisfy the following two requirements:
   • 2.5 grade point average in high school.
   • Mathematics ACT score of 26, or mathematics SAT score of 620. Composite ACT score of 20, or combined SAT score of 950.
   ECAS students who do not meet the requirements are admitted to general studies. They may gain admission to pre-computer science later as transfer students. See Transfer Students.

3. Pre-Computer Science Requirements

   Pre-computer science (pre-CS) consists of core courses required of both CEMR and ECAS tracks. Pre-CS consists of the following courses, and each course (or transfer equivalent) must be completed with a grade of C or better: CS 110, 111, and 220, and MATH 155 (or MATH 153 and 154)

   Students may also take CS 300-level courses during this time, but no student may take any CS 400-level course until finishing pre-CS.

4. Computer Science Degree Program Requirements

   Having satisfied all pre-CS requirements, students now become computer science degree candidates (CS). Typically, CS students spend their junior and senior years completing WVU and college course requirements while taking all remaining CS core and elective courses as required of their degree plan. All such courses, listed below, must be finished with a C or better.

CEMR Track

• STAT 215
• CS 310, CS 350
• CPE 310/311
• Pick four technical electives (12 hrs): CS 400-level course
• CS 480, CS 481 (capstone series)
ECAS Track
- STAT 215
- CS 310, CS 350
- Pick one theory course: CS 420, 422, 426
- Pick one systems course: CS 450, 451, 453, 455
- Pick one applications course: CS 410, 430, 440, 470, 472
- Pick two technical electives (6 hrs): CS 400 level, MATH 400 level, CPE 400 level
- CS 480, CS 481 (capstone series)

5. Suggested Four-Year Plan of Study
Both degree plans (CEMR or ECAS) require 128 hours of coursework. Contact the department for suggested plans of study for each.

Transfer Students
Students wishing to transfer into pre-computer science or computer science must satisfy admission requirements and must petition the Lane Department of Computer Science and Electrical Engineering for admission. If petitioning:
- In person, come to the department’s office and ask for the undergraduate coordinator. Bring a transcript of all college-level coursework attempted.
- By mail, be sure to include a transcript of all college-level coursework attempted and an indication of when the transfer is desired. On the envelope in the lower-left corner, write “Transfer petition for UG CS.” Mail to Lane Department of Computer Science and Electrical Engineering, WVU, P.O. Box 6109, Morgantown, WV 26506-6109.

Transfer students are expected to meet the following requirements:
- A grade point average of at least 3.0 in all college-level work attempted.
- A grade of C or better in any transfer course that will count as pre-CS or CS.

The number of transfer students accepted into the department is governed by the enrollment capacities of the degree programs. First admission priority is given to those students currently matriculated at WVU; second priority, to students enrolled in computer science curricula at external colleges and universities; third priority, to students enrolled in other degree programs at external colleges and universities. Within the last two priorities, preferential admission is in the following order: West Virginia residents, U.S. citizens or permanent residents, and international students.

Minor in Computer Science
Any student may take a minor in computer science by taking the following courses and making a C or better. The symbol “/” means sequence courses:
- CS 110 / 111.
- Pick one from: CS 210, 220, 230.
- CS 310 and 350.
- At least one CS 400-level course.

Economics
Clifford B. Hawley, Interim Chair
http://www.as.wvu.edu/econ.html

Degree Offered
Bachelor of Arts

Nature of Program
The Department of Economics offers two majors in economics: one through the College of Business and Economics and the other through the Eberly College of Arts and Sciences. The College of Business and Economics grants a bachelor of science in economics. The Eberly College of Arts and Sciences grants a bachelor of arts with a major in economics.

The program leading to the B.A. degree is designed for students who wish to combine fundamental training in economics with a liberal arts education. In addition to the general education and related requirements, students have in excess of 40 credit hours of unrestricted electives.
Economics students are taught to identify the costs and the benefits of a decision, which are sometimes not obvious. The economist has the skill to identify the real consequences of a decision. That skill is valued highly. Economics is a useful major for anyone interested in a career in politics, business, law, foreign service, government, banking, or any other field in which the ability to make or analyze policy decisions is important. The demand for people with degrees in economics, both at the graduate and undergraduate levels, is high.

Economics deals with some of today’s most pressing issues: global warming, poverty, international trade, unemployment, the income distribution, education, the deficit, the emerging economies, and national defense.

Admission Requirements
Students making application for initial admission to the major in economics must meet the following requirements:

- Completion of 58 or more credit hours with a cumulative grade point average of 2.5 or better.
- Completion of the following courses with a minimum grade of C in one and a minimum grade of B in the other: ECON 201 and 202.
- Completion of ECON 225 or STAT 211 with a grade of C or better.
- Completion of ENGL 101 and 102 with a passing grade.
- A semester of calculus, MATH 150 or 155 (can be replaced by MATH 153 and 154), with a grade of C or better.

Degree Requirements
ECON 201, 202, 225, 301, 302, and 481 are required. Any student planning to pursue graduate work in economics should take MATH 155 (or MATH 153 and 154) and 156. Additional recommended courses can be determined in consultation with an economics advisor.

Majors are also required to take 15 additional hours of economics courses numbered 300 or above for a minimum of 24 semester hours of upper-division coursework in economics. Economics majors must maintain a grade point average of 2.0 for all economics courses (to be computed using the last grade earned in each economics course). Economics majors are required to have a grade of C or better in ECON 301 and 302.

Economics majors may take a maximum of nine of their 33 credit hours of economics courses out of residence. Transfer students must take a minimum of 15 credit hours of upper-division economics courses in residence. The undergraduate advisor can waive this requirement under special circumstance.

Minor in Economics
To earn a minor in economics, a student must complete the following courses with a grade point average of 2.0 or better: ECON 201, 202, 301, 302, and two upper-division economics electives.

English Language and Literature
Donald Hall, Chair
Timothy Sweet, Associate Chair
http://english.wvu.edu

Degree Offered
Bachelor of Arts

Nature of Program
The department offers programs for students who intend to pursue a graduate degree in English, attain secondary certification to teach English or language arts, concentrate in literature and language as preparation for entrance into professional schools, or concentrate in creative writing or professional writing and editing. Students interested in undergraduate creative writing should speak with the coordinator of creative writing to be sure an appropri-
ate program file is developed. Because English majors have varying interests in literature, language, and writing, they are strongly urged to consult the department's undergraduate advisors to plan their coursework.

**Admission Requirements**

Students may apply for admission to the degree program when they have completed 58 hours with an overall 2.0 grade point average, a minimum 2.0 average for English courses taken at WVU, and grades of C or better in ENGL 101 and 102 or 103 and all required English courses taken prior to admission (see list below). Majors must maintain at least a 2.0 cumulative average in all English courses taken at WVU to maintain their status.

**Degree Requirements**

An English major requires a minimum of 33 hours in literature, language, and writing, exclusive of ENGL 101 and 102 or 103. A maximum of 43 hours in English, exclusive of ENGL 101 and 102 or 103, may be included within the 128 hours required for graduation.

**Required Courses**

- ENGL 241, 242, 261, and 262; one course from ENGL 221, 321, or 323; ENGL 263 or 363; at least 12 additional hours of courses at the 200-level or above offered by the Department of English in literature, language, theory, or writing; a capstone course, ENGL 418, 491A, or 496. At least nine hours of the student’s total coursework for the major must be at the 300 level or above. Students pursuing English education should contact the college of Human Resources and Education for their list of required electives. Students must earn a grade of C or better in all courses that are counted toward the major plus ENGL 101 and 102 or 103.

**Concentration in Creative Writing**

English majors may obtain a concentration in creative writing by fulfilling the requirements for a minor in creative writing.

**Concentration in Professional Writing and Editing (PWE)**

English majors may obtain a concentration in PWE by completing 15 hours of coursework that includes: ENGL 301, 302, 303; 304 or 305; and 491A. Students must earn a grade point average of 3.0 or higher across these five courses. Students must successfully complete at least nine concentration hours before being eligible to take ENGL 491A.

**Minor in English**

Any student admitted to a degree program within the University may take a minor in English. Such a minor consists of any 15 hours beyond ENGL 101 and 102 or 103 with a minimum of nine hours at the upper-divisional level. Students are advised to design their own English minor to complement the work in their major. Only courses in which the student earns a grade of C or better can be applied to the English minor.

**Minor in Creative Writing**

Any student admitted to a degree program other than English may take a minor in creative writing. Such a minor consists of 15 credit hours taken in the following sequence:

- One course, with a grade of B or better, from among ENGL 212, 213, or 214.
- With permission of the instructor, one course from among ENGL 312, 313, or 314.
- With permission of the instructor, ENGL 318.
- With permission of the instructor, ENGL 418.
- One additional course from among ENGL 212, 213, and 214 (which may be taken at any time) or ENGL 312, 313, and 314 (which must be taken after the completion of one of the 200-level courses).

**Minor in Professional Writing and Editing (PWE)**

Any student admitted to a degree program other than English may take a minor in PWE. Such a minor consists of 15 credit hours as follows: The minor requires at least 15 hours of coursework. Two courses are required of all PWE minors: ENGL 301 and 302.
The remaining nine credits must be chosen from the following four options: ENGL 303, 304, 305; ENGL 221 or 321. To earn this minor, students must earn a grade point average of 3.0 or higher across five PWE courses.

**Certificate in Professional Writing and Editing (PWE)**

The PWE certificate is intended for non-traditional students who are not eligible to earn a PWE minor because they are not earning a WVU major or degree. WVU students who are eligible to complete a PWE minor are not eligible for the certificate.

Students may elect to complete a 15-credit-hour certificate in PWE, which is designed to provide both an overview of the field and experience writing and editing. To earn this certificate, students must complete the following courses with a grade point average of 3.0 or better: English 301, 302, 304, 305. Students will need to complete successfully at least nine credit hours in this program before being eligible to take English 491A (internship).

**Publications**

*Victorian Poetry*, a critical journal of Victorian literature, is edited by the Department of English. The journal was established at WVU in 1963 and has become internationally known, with subscribers in 27 countries.

*Calliope*, a publication of WVU student writing, is sponsored by the Department of English and the English Honorary and Club.

*The Loop*, an online literary magazine.

*NASSR-L*, an electronic discussion group, is devoted to scholarship in British Romantic studies.

**Foreign Languages**

Angel Tuninetti, Chair  
Susan Braidi, Associate Chair  
http://forlang.wvu.edu/

**Degree Offered**

*Bachelor of Arts*

**Majors:** French, German, Spanish language; Chinese Studies, Russian Studies

**Nature of Program**

Coursework is offered in foreign literatures and cultures, linguistics, and languages, including Arabic, Chinese, French, German, Italian, Japanese, Latin (Classics), Russian, and Spanish. Literature courses taught in English are designated as Foreign Literature in Translation (FLIT) courses. Culture and film courses taught in English are designated as Foreign Cultures (FCLT) courses. Other areas of instruction are Language (LANG), dealing with second language acquisition and teaching methodology, Linguistics (LING), and English as a Second Language (ESL). The department houses the WVU Intensive English Program, which offers instruction in English as a second language for students seeking admission into the University, or to improve their command of the language.

The primary goal of the program in foreign languages is to provide students with a solid liberal arts education that is the foundation for personal and professional success and growth over a lifetime. The curriculum is designed to provide students with well-developed cognitive and communication skills and with a broad knowledge base that will enable them to pursue additional studies at the graduate level or to enter the job market in positions that will demand the ability to communicate in more than one language and in a variety of cultural contexts.

**Career Goals for Graduates**

In today’s rapidly increasing global economy, students may use foreign language study to add a valuable international dimension to myriad career opportunities such as teaching, business, economics, government work and foreign service, journalism, law, medicine, and computer, and other scientific research.
Placement Testing

Students who have studied French, German, or Spanish in high school and who wish to continue the study of these languages at WVU must take a computerized placement test before entering the program. Those who complete the course in which they are placed with a B or better will be eligible to apply for back credit for all courses in the 101, 102, 203, and 204 sequence out of which they placed. Students who place at the 300-level must complete their first 300-level course with a B or better to be eligible for back credit. Fees for this back credit are waived. The placement test can be taken one time only and must be taken before completing any coursework in the languages at WVU. Students who have studied a language other than those listed above must see the appropriate language coordinator for course placement.

Admission Requirements

To major in foreign languages, students must have satisfactorily completed elementary and intermediate course sequences in a given language, with an overall 2.0 GPA.

Degree Requirements

Students may select from five areas of emphasis (three language majors in French, German, and Spanish; and two language studies majors in Chinese Studies and Russian Studies) to complete a bachelor of arts in foreign languages. In each area of emphasis, the major requires 33 hours of coursework beyond the intermediate level (203–204 or the equivalent) in the language of study, including a three-credit capstone experience. The capstone may be taken anytime after completion of 21 hours beyond the intermediate level (204 or the equivalent).

The requirements for the language majors are:

French: FRCH 301, 302, 303, 304, 331 or 332, 431 or 432, 496 (capstone), LING 311, and nine hours of electives (including no more than six hours at the 200-level and no more than three hours in an area other than French).

German: GER 301, 302, 303, 304, 331 or 332, 341 or 441, 496 (capstone), LING 311, and nine hours of electives (including no more than six hours at the 200-level and no more than three hours in an area other than German).

Spanish: SPAN 301, 302, 303, 304, 330 or 340, 331 or 332 or 341 or 342, 480 or 481 (capstone), LING 311, and nine hours of electives (including no more than six hours at the 200-level and no more than three hours in an area other than Spanish).

The 33 hours for the major may include up to 6 credit hours in the area of emphasis language at the 200-level, excluding FRCH/GER/SPAN 203–204 (or the equivalent). Students may, with consent of their department advisor, include three credit hours in an outside area of study, either within the Department of Foreign Languages or in another department; e.g., political science, history, geography, foreign cultures (FCLT), foreign literature in translation (FLIT). The outside course may be upper or lower division. No more than nine hours of lower-division coursework will be counted for the major.

The requirements for the language studies majors are:

Chinese studies: Students must select 18 hours including the capstone course from the following courses: CHIN 301, 302, 303, 304, 461, 465, and 491 or 497, and upper-division study abroad courses. Students must select six hours of the following courses, one of which must be a Writing course: FCLT 210, FLIT 216 or 217. Students must select nine hours of electives from 1) alternate upper-division courses in Chinese language; or 2) alternate FLIT or FCLT courses in Chinese literature or culture; or 3) courses from another related field in or outside of the department, with approval of advisor.

Russian studies: Students must select 15 hours from the following courses: RUSS 301, 302, 303, 304, 331, 332, 341, 342 or 451. Students must select 15 hours of electives from 1) any alternate upper-division courses in Russian; 2) six hours of FLIT or FCLT courses, selected from the following courses: FCLT 250, 280; FLIT 256, 257; 3) nine hours of other electives, selected from the following courses: HIST 217, 218, 419, 420; LING 311; additional FCLT, FLIT, or RUSS courses or upper-division study abroad courses with approval of advisor.
Residency Requirements
Students completing a major in foreign languages/foreign language studies at WVU must fulfill a residency requirement of 15 credit hours on campus in their language/area of study, excluding courses numbered 100, 101, 102, 200, 203, 204, 493, and courses obtained through credit by examination.

Grade Point Average
Foreign language majors must achieve a minimum grade point average of 2.25, both overall and in the major, to qualify for graduation. They must also satisfy University General Education Curriculum and Eberly College of Arts and Sciences requirements and earn a total of 128 hours of credit.

Other Coursework/Second Majors/Minors
Students are strongly encouraged to work closely with advisors and faculty in the department to select cognate courses, second majors, and/or minors (such as history, political science, humanities, geography, sociology, and/or business and economics) that will complement their work in foreign languages and lead to meaningful career options. Students wishing to teach should contact the College of Human Resources and Education to inquire about the requirements for teacher certification.

Dual Degree in Business and Foreign Languages
The coordinated dual degrees in business and foreign languages provide global opportunities to students seeking both a bachelor of arts with a major in foreign languages and a bachelor of science in business administration. For details, see Special Programs on page 279.

Programs Abroad
The Department of Foreign Languages regularly offers language courses abroad. Currently, summer courses are offered in Argentina, Brazil, China, France, Germany, Italy, Spain, and Taiwan. Students participating in a summer program normally register for six credit hours. Contingent upon funding and faculty availability, the department will offer similar programs in the period 2009–2011.

Minor
Students may complete an academic minor in Chinese studies, foreign cultures (FCLT)/foreign literature in translation (FLIT), French, German, Italian studies, linguistics, Russian studies, Spanish, and teaching English as a second language (TESL). Requirements for all minors in the Foreign Language Department: Students must achieve a GPA of at least 2.25 in the coursework for the minor, and they must complete at least six of the upper-division hours on campus (exclusive of courses numbered 493 or courses obtained through credit by examination).

Requirements for the minors in French, German, and Spanish consist of a total of 15 hours of coursework beyond the intermediate level (203–204, or the equivalent) with at least nine hours at the upper-division level. The minor must include two of the following courses in the target language: 301, 302, 303, or 304; and nine additional hours. Students may take up to six hours in the target language at the 200-level (exclusive of courses numbered 200, 203, and 204). LING 311 may also be used as three of the additional nine hours.

The minor in foreign cultures/foreign literature in translation requires a selection of 15 hours of FCLT/FLIT courses, nine of which must be at the upper-division level. At least two different national literatures must be represented in the selection.

The minor in linguistics requires LING 311, 411, 412, 511, and 514.

The minor in teaching English as a second language (TESL) requires LING 311, LANG 322, LANG 421, LING 511, and one of the following: LING 512, 514 or LANG 422.

The minor in Chinese studies requires 15 hours of coursework, as follows: nine hours from the following Chinese language courses: CHIN 301, 302, 303, 304, 461, 465, and upper-division study abroad courses; three hours of Chinese civilization and culture: FCLT
210; and three hours of electives from 1) alternate upper-division courses in Chinese lan-
guage; or 2) alternate FLIT or FCLT courses in Chinese literature or culture; or 3) courses
from another related field in or outside of the department, with approval of advisor.

The minor in Italian studies requires 15 credit hours beyond ITAL 204. The minor must
include ITAL 303 and 304 (for which 204 is a prerequisite), and three other courses chosen
from the following: 1) Restricted electives: no more than six credits chosen from ARHS
114, 120, 331, HIST 201, 205, 480, 481; 2) Unrestricted electives chosen from: ARHS 160,
354, 360; CLAS 231, 232; FCLT 240; HIST 204, 330, 331, 400, ITAL 293, 371, 493, 496,
or occasional special topics courses in various fields (upon approval of coordinator). Of
the 15 hours, at least nine must be at the upper-division (300-400) level.

The minor in Russian studies requires 15 hours of coursework, as follows: 12 hours
from the following upper-division Russian courses: RUSS 301, 302, 303, 304, 331, 332,
341, 342 or 451; and three hours from the following: 1) any alternate upper-division courses
in Russian; 2) FCLT/FLIT courses, selected from FCLT 250, 280; FLIT 256, 257; or 3) other
electives with approval of advisor.

Endorsement in English as a Second Language (ESL)
The ESL endorsement is an 18-credit program for students who already possess or
will be working towards teaching certification. The ESL endorsement requires LANG 322,
LANG 421, LANG 422, LING 511, LING 514, and LANG 491.

Additional Points of Information
• Foreign language courses are divided into elementary, intermediate, and advanced
levels. The elementary level, courses 101 and 102, provides beginning work in
understanding, speaking, reading, and writing the languages, with emphasis on com-
municative competence. The vocabulary is limited to words of high frequency.
The intermediate level, courses 203 and 204, continues training in the four basic
skills, with greater emphasis on reading. The vocabulary is greatly extended, especially
the passive or recognition vocabulary.
In the advanced-level courses, 301, 302, 303, and 304, the four basic skills are
further developed. All classroom questions and discussions are in the foreign language.
The work is based on reading assignments followed by classroom discussions, oral
drills, and written exercises.
• Courses numbered 100 are intensive and equal to courses 101 and 102.
Students may receive credit for either course 101 and 102 or 100 but not for both.
Courses numbered 200 are the intensive equivalent of courses 203 and 204.
Students may receive credit for courses 203 and 204 or 200 but not both.
• The Department of Foreign Languages offers a credit by examination program for
elementary and intermediate classes in Arabic, Chinese, French, German, Italian,
Japanese, Portuguese, Russian, and Spanish only. Information about the program
is available in the Department of Foreign Languages.

Forensic and Investigative Science
Keith Morris, Director
http://forensicgateway.wvu.edu/

Degree Offered
Bachelor of Science

Areas of Emphasis
Forensic Biology, Forensic Chemistry, Forensic Examiner

Nature of Program
The Forensic and Investigative Science (FIS) program comprises three areas of em-
phasis (forensic examiner, forensic biology, and forensic chemistry.) Each provides a strong
background in the physical and biological sciences associated with forensic science. The
program is fully accredited by the Forensic Education Programs Accreditation Commission
(FEPAC).
Because of the unique nature of the program and forensic science employment, strict policies and procedures apply related to issues that could affect a student’s ability to obtain a background check. These policies are available from the program office and faculty.

**Admission Requirements**

Students interested in the FIS program will be admitted as pre-program majors as freshmen and sophomores. Outstanding freshman may be admitted as direct admits if they meet the requirements for admission to the Honors College. Strong high school preparation in biology, chemistry, physics, algebra, trigonometry, and pre-calculus is recommended. Computer literacy is essential. Students who wish to enter the program must apply for admission and must have completed or be enrolled in courses listed below under the pre-program requirements. Because of the individualized instruction in classrooms, laboratory courses, and internships, enrollment is limited. Applicants must have a minimum cumulative GPA of 2.75 in the pre-program requirements and no less than a C in any course. In addition to the program application, other requirements include a letter of recommendation focusing on personal integrity and character and an extensive written assignment. In accordance with the unique nature of the program, a statement related to a drug-free lifestyle and zero criminal history is required. Following the submission of all appropriate application materials, the Forensic Science Admissions Committee will interview qualified students. Admission to the limited number of places in the three FIS areas of emphasis will be on a competitive basis. Prior to applying for acceptance into the major (typically done at the end of the sophomore year), transfer students must have completed or be in the process of completing a one-year residency at the WVU Morgantown campus. Students must have completed or be enrolled in FIS 201 Introduction to Forensic Science. Additional information and criteria for selection are available from the program areas.

**Degree Requirements**

The first two years of study are virtually identical to that taken by biology, chemistry, and other majors allowing for easy transition to one of these majors should the student elect not to pursue a degree in forensic science. The final two years are composed of specific courses related to the chosen area of emphasis as well as courses taken by all FIS students. Courses taken by all students include FIS 314, 401, 404, 406, 410, and 480. A four-year plan of study for each area of emphasis is available from the academic advisor.

**Required Pre-Program Coursework**

Pre-program courses that should be taken in the first and second year are: BIOL 115, 117, and 219; CHEM 115, 116, 233, 234, 235, 236; ENGL 101 and 102; MATH 155 (or MATH 153 and 154) and 156; PHYS 101 or PHYS 111; SPA 270; STAT 215; and FIS 201. Students interested in the forensic chemistry option are strongly encouraged to take the PHYS 111/112 series. They should also complete PHYS 102/112 by the end of the sophomore year. If students are interested in the forensic chemistry track, they are strongly encouraged to visit the program advisor in 208 Oglebay Hall during their freshman year.

**Internship**

Early in the semester following acceptance into the major, the student will submit an application for placement in an approved internship site. Few if any internships are available in Morgantown. The internship coordinator will submit the student’s internship application materials to the requested site(s) for review. The host agency reserves the right to reject any student’s application. The length of internships must be a minimum of 420 hours. Although some internships may be paid, most are not and students must plan to have the resources necessary to support themselves during this experience. The internship course is graded on the P/F scale.

**Performance Requirements**

Students must maintain a minimum overall GPA of 2.75 and complete all required courses each term with a grade of at least a C (or P in courses offered only on a pass/fail grading basis); required courses offered for a letter grade that students have chosen to take
on a pass/fail basis cannot be applied to the degree. A student who does not meet these requirements may be placed on probation, suspended, or dismissed from the program. The forensic and investigative science program reserves the right to suspend or dismiss any student who does not perform at an overall level considered satisfactory. WVU reserves the right to modify the program as needed. Students should work closely with the program’s advisor when registering for courses to assure that program requirements are being met.

Program Courses Required After Acceptance into Forensic and Investigative Science Program

**Forensic Biology Area of Emphasis**
BIOL 310, 324/325, 432, CHEM 215, STAT 316
Must also take two of the following elective biology courses: BIOL 410, 411, 441, or 464

**Forensic Chemistry Area of Emphasis**
CHEM 215, 310, 313, 335, 460, 463, and STAT 316

**Forensic Examiner Area of Emphasis**
FIS 301, 302, 304, 335, 402, 409, 480
Must also take one elective course from the following: BIOL 324, CHEM 215, CHEM 460

**All Areas of Emphasis**
AGBI 410, FIS 314, 386, 401, 404, 406, and 410

**Geology and Geography**
Trevor M. Harris, Chair
Helen M. Lang, Associate Chair in Geology
Timothy A. Warner, Associate Chair in Geography
http://www.geo.wvu.edu/geology/undergrad

**Degrees Offered**
- Bachelor of Arts
  - Majors: Geography, Environmental Geoscience
- Bachelor of Science
  - Major: Geology

**Geology**

**Nature of Program**
The bachelor of science degree in geology is designed for students interested in geology positions within either the private or public sector, as well as for students who will pursue graduate work. Qualified students are encouraged to seek a graduate degree; however B.S. geologists who have developed solid technical and communication skills have excellent employment prospects in the energy industry and environmental and geotechnical firms.

Instructional facilities and equipment include laboratories for mineralogy, petrology, geochemistry, sedimentology, paleontology, hydrogeology, geophysics, geomorphology, structural geology, and excellent computer facilities. Field studies are stressed in upper-level classes, capped by a six-credit field course examining folded and faulted sedimentary rocks as well as igneous and metamorphic rocks in South Dakota, Wyoming, and Montana. A wide variety of resources are available to augment classroom learning, including cooperative research programs with the West Virginia Geological and Economic Survey, the National Energy Technology Laboratories of the U.S. Department of Energy, the West Virginia Department of Natural Resources, Monongahela National Forest, and numerous private geoscience firms. Internships are encouraged to broaden the learning experience and to enhance employment prospects.
Admission Requirements

Admission to the geology program requires a cumulative GPA of at least 2.0 and an average of at least 2.0 in lower-division geology courses.

Degree Requirements

Candidates for the bachelor of science in geology are required to take a total of 42 hours of geology courses (excluding GEOL 203 and 351). Students are urged to take supporting courses in such fields as geography, mining and petroleum engineering, hydrology, soil mechanics, soil science, biology, and computer science, depending on their primary interest within geology. Students planning to attend graduate school in geology or seek employment in the energy industry should complete a full year of calculus.

**Required Courses for a B.S. with a major in geology:** GEOL 101 and 102, or 110 and 111 (or GEOG 110 and 111), 103, 104, 284, 285, 311, 321, 331 or 454, 341, 404, 462 or 463, and six hours of upper-division geology electives; CHEM 111 and 112, or 115 and 116; PHYS 101 and 102, or 111 and 112; STAT 211; MATH 126 and 128; MATH 155 (or MATH 153 and 154) and GEOL 351, or MATH 155 (or MATH 153 and 154) and 156.

An average of at least 2.0 must be attained in required upper-division geology courses. Each student must successfully complete a W course in GEOL to fulfill the university writing course requirement.

Minor in Geology

Students interested in a geology minor are urged to contact the department.

Requirements for the minor: 16 hours of geology courses including GEOL 101 and 102, or GEOL 110 and 111, are required. Nine hours must be upper division. Students must achieve a grade point average of at least 2.0 in all geology courses. Courses graded pass/fail may not be applied toward the geology minor.

Environmental Geoscience

Bachelor of Arts

The B.A. in environmental geoscience is a joint program in the Department of Geology and Geography for students interested in geological and geographical approaches to environmental issues. Emphasis is placed on the physical, human, and spatial aspects of Earth and its environment. The broad and interdisciplinary nature of the degree program is designed to produce geoscientists who can identify environmental problems, apply a variety of approaches to their remediation, and be conversant among the wide range of disciplines for whom the environment is of special concern.

The course requirements for the degree reflect the diversity of environmental problems that we face today from the atmosphere (air pollution), to the hydrosphere (water pollution), to the lithosphere (ground pollution), and how these problems affect our quality of life. The courses required for the degree also reflect the increased demands placed upon modern environmental scientists that include being able to recognize and understand the sources and impacts of various pollutants within the physical environment, being able to compile and analyze environmental data, understanding the regulatory aspects of environmental protection, and being able to effectively communicate issues of importance with other environmental scientists and with the general public.

Graduates of this program will find employment in a wide array of fields including the assessment and remediation of environmental problems, land-use planning, geographic information systems, involvement in the legislative process by which laws are formulated to protect the environment, the application of such laws as part of a federal or state regulatory agency, or as a member of the journalistic community using the various methods of mass communication to increase the public awareness of situations that adversely affect the environment.
Geology and Geography Courses

The program requires a total of 128 hours for graduation. A minimum of 38 hours must be taken from the following list of geology and geography courses including the 23 required hours plus a minimum of 15 hours at the 200, 300, or 400 level selected from the elective list. One of the geology/geography elective courses must be a designated “methods” course. No more than 50 hours of geology/geography courses can be used for the B.A.

The selection of courses from the following lists are designed to provide competence within four important areas of understanding required for an environmental geoscientist: 1) a firm understanding of the physical makeup of the environment including the atmosphere, the hydrosphere, and the lithosphere, 2) a familiarity with the tools with which the environment can be described and evaluated, 3) an understanding of how humans have impacted the environment, and 4) the steps that can be taken to protect the environment and, if already adversely affected, what can be done to ameliorate the problem.

**Required Courses** (23 hours): GEOL/GEOG 110, 111 (or GEOL 101, 102), 103, 104, 200, 400*; GEOG 106, 107, 307.


**Required Courses Outside the Department** (14 hours): CHEM 111, 112, or 115, 116 or CHEM 111 and PHYS 105; MATH 126, 128.

*Used to fulfill the college writing course requirement.

#Methods courses.

**Electives Non-Geology/Geography** (12 hours): ARE 187, 220, 382; AGRN 202, 203, 455; BIOL 101, 102, 103, 104, (or 115, 117), 105, 106; CHEM 231; CS 101, 110; FMAN 212; HIST 284; MATH 150, 155^; POLS 338; STAT 211, 312.

^Credit cannot be obtained for both MATH 150 and MATH 155. MATH 155 may be replaced by MATH 153 and 154.

**Geography**

http://www.geo.wvu.edu/index.html

**Nature of Program**

The undergraduate major in geography provides students with the knowledge and skills needed to analyze the variation in human activity that exists among places, regions, and countries. This knowledge allows geographers, for example, to explain why some places are more or less developed than others, to suggest ways in which development can be planned, and to examine the relationship between the natural environment and human activities.

Geography students receive specialized training in one of the program’s four options: geographic information science (GiSc), globalization and development, natural resources and environment, and urban and regional planning. An individualized program of study is also available combining elements of the four options. Geography graduates are qualified for a number of careers in both the private and public sectors. In industry, geographers are hired as geographic information system analysts, business location researchers, environmental impact consultants, market analysts, and cartographers. In government, geographers can work as local urban planners, regional and state economic development specialists, environmental and resource development analysts, land-use planners, international development agency advisors, teachers and trainers, researchers, cartographers, as well as geographic information system analysts. Some graduates may also use their training to pursue careers as environmental or community activists in non-profit organizations. Finally, many geography students go on to graduate school to obtain further training, most commonly in geography or planning, but also in fields as diverse as law, information science, and environmental studies.
Admission and Degree Requirements

Admission to the geography program requires a cumulative grade point average of at least 2.0 and an average of at least 2.0 in geography courses. A geography major requires a total of 128 hours, including 33 hours of geography courses.

Core requirements (14 hours): GEOG 102, 106, 107, 108, 199, and 240.
Core elective requirements (choose 3 hours): GEOG 150, 205, 209, 210.
Methods and applications (choose 3 or 4 hours): GEOG 350, 462, 455, 407.
Capstone Course (choose 3 hours): 491, 496, 499.

Areas of Emphasis

Geographic Information Science (GISC)

This option provides a foundation in the theory and practice of geographic data handling, emphasizing the use of computer systems for storing, retrieving, analyzing, and displaying spatial information. Geographical analysis of human and natural environments generates information for decision-makers in business, government, and educational settings using contemporary technology such as geographic information systems (GIS), image processing of remotely sensed data, and geographical models. The GISC option provides instruction in the capture of data from field survey, aerial photography, satellite imagery, and other digital sources. The significance of spatial patterns and processes are understood through mapping, computer-oriented techniques, and statistical applications. The department has state-of-the-art laboratories and computer software for practical training and education in GIS and remote sensing.

Recommended Courses: GEOG 150, 300, 350, 415, 452, 453, 455, and 462.
Suggested courses in other disciplines: FOR 140, 326; MATH 155 (or MATH 153 and 154), 156, 251, 261; STAT 211, 215, 312, 331, 421, 445; CS 100, 110, 111, 220, 210, 330, 415, 440, 470; HIST 284; ART 111, 112, 223; CE 200, 205, 405; PHYS 108.

Natural Resources and Environment

A rapidly expanding interest in the environment and sustainable development has put geographers in a good position to analyze the destruction of, and measures to maintain, environmental systems. This option emphasizes the interaction between natural resources, the physical environment, and economic development in developed and developing regions. It provides training for students interested in problems concerning the conservation of natural resources, environmental impact and economic development, and strategies for sustainable resource utilization. Geographical information science, remote sensing, and cartographic training is available for analyzing environmental problems resulting from the exploitation and management of energy, mineral, land, and water resources. Theoretical issues concerning political ecology are also provided.

Recommended Courses: GEOG 110 and 111, 300, 307, 321, 407, 411, 415, 455, 491. Suggested courses in other disciplines: GEOL 101, 102, 103, 104; BIOL 363; CHEM 111, 112; CE 200; ENGL 305; FOR 140, 326; HIST 284; MATH 128; POLS 336, 338; STAT 101; CS 101.

Globalization and Development

The globalization and development option emphasizes rural, urban, and regional development in the United States, Africa, and Europe. Theoretical and practical issues in the study of development and underdevelopment are raised within the suggested courses. The training provided in this track will equip students with a background for careers or advanced study in economic development, sustainable development and policy, third world planning, urban social planning, gender studies, and policy formation. Students are exposed to issues such as social equity vs. efficiency, community development, uneven development, and gender studies. In addition, students are strongly encouraged to participate in the internship program to gain practical experience in planning and regional development.

Recommended courses include, but are not limited to: GEOG 209, 210, 411, 412, 425, 443, 491, and a regional course from 240, 241, 243, or 244. Suggested courses in other disciplines: ECON 461; 462; POLS 220; SOCA 322, 323, and 405.
International Area Studies
The international arena has changed dramatically in recent decades with political transitions, economic restructuring, and social upheaval. Geography plays an important role in analyzing these global shifts. The international area studies option gives students the opportunity to specialize in one or more regions of the world and gain a basic background in international economic, political, and cultural relationships. The program not only deals with specific regional problems, but also global issues, nationalism, development, the international division of labor, and gender issues. The program has particular expertise in western and southern Africa, East Asia, and Europe. Recommended courses: GEOG 241, 243, 244, 302, 310, 412, 415, 491. Suggested courses in other disciplines: ECON 201, 202, 451, 454, 455; ENGL 305; HIST 104, 105, 106, 464; POLS 103, 250, 260, 361, 364; SOCA 255, 256; MDS 126.

Urban and Regional Planning
The planning focus within this option prepares students to participate in the social processes that influence contemporary urban and regional development. The training provided in this track will equip students with a background for careers or advanced study in urban and regional planning, economic development, sustainable development and policy, third world growth, urban social planning, gender studies, rural planning, and policy formation. More importantly, students are strongly encouraged to participate in the internship program to give them practical experience in planning and regional development.

Recommended Courses: GEOG 209, 210, 411, 412, 425, 443, 491, and a regional course from 240, 241, 243, or 244. Suggested courses in other disciplines: ECON 461; 462; POLS 220; SOCA 322, 323, and 405.

Individualized Program of Study
With the approval of the undergraduate coordinator, a student may design an individualized program of study consisting of a minimum of 33 hours of geography courses. The individualized program is arranged with the student's advisor. It shall include no more than six hours of GEOG 491 and 492.

Internship
An internship is a field-based academic option that uses the workplace as an extended classroom/laboratory. As part of the internship, students usually spend summer months or a semester working at a public agency, private business, or non-profit organization where they are supervised by experts in such areas as GIS, planning, the physical environment, international affairs, or economic development. The professional learning experience is recommended for majors in geography with at least 45 total credit hours and 12 credit hours in geography. See the geography internship advisor for additional information.

Geography Minor
Any student admitted to a degree program at WVU may complete a minor in geography. The minor consists of 15 hours of coursework with a minimum of nine hours at upper division level (course number 300 or above). The geography minor is available in five areas: geographic information science (GISc), planning and development, natural resources and environment, international area studies, and an individualized program. Students must achieve a GPA of at least 2.0 in the 15 hours taken for the geography minor. Requirements include GEOG 102 or 108, 107, and nine additional hours in courses related to the student’s specific area.

Honors Program
Qualified students in geography are encouraged to participate in the department’s honors program, which begins in the senior year and culminates in an individual senior thesis. Entry requires a 3.3 overall GPA.
History
Elizabeth Fones-Wolf, Chair
William S. Arnett, Director of Undergraduate Studies
Katherine Aaslestad and James Siekmeier, Phi Alpha Theta Advisors
http://history.wvu.edu/

Degree Offered
Bachelor of Arts

Program Objectives and Goals
The Department of History offers courses focusing on a variety of world regions and time periods. Degree requirements insure that majors obtain an acquaintance with the history of several such regions and periods and that they develop skills in research and writing. Majors and non-majors may qualify for membership in Phi Alpha Theta, the national history honorary.

Admission Requirements
Students who meet University admission requirements and are in good standing may be directly admitted to the history major.

Major Requirements
• History majors must complete a total of 33 hours in history courses. They must choose 12 hours from the following introductory courses: HIST 101, 102, 104, 105, 106, 108, 152, 153, 179, 180, 271, and 272. They must complete HIST 484 and 18 additional hours beyond the introductory courses with nine hours each from two of the following three areas: United States; Europe; Africa, Asia, and Latin America. At least nine of the 18 hours must be at the 300 and 400 levels. One course must be taken in African, Asian, or Latin American history.
• History majors must complete a formal minor of at least 15 hours in a related field outside history but within the Eberly College of Arts and Sciences. With approval of the student’s advisor, a minor outside the college may be completed as prescribed by that department or college.
• History majors must maintain a cumulative 2.2 GPA for all courses in the department to graduate with a major in history. Courses in history that the student wishes to count toward the major must be completed with a grade of C or better. The minimum requirement for a major in history is 33 hours. A maximum of 42 hours in history may be counted toward graduation.

Minor in History
Any student may take a minor in history. A minor consists of any 15 hours of courses in history. Six hours should be chosen from the following introductory courses: HIST 101, 102, 104, 105, 106, 108, 152, 153, 179, 180, 271, and 272. A minimum of nine hours should be selected from other history courses at the 300–or 400–level. Students are advised to design their own history minor to complement studies in their major. Only course grades of C or better can be applied to this minor.

Career Prospects
The bachelor of arts with a major in history is designed to prepare students for careers in teaching, business, and government, and for graduate work in history, law, and related social sciences and humanities.
Program in the Humanities
Sharon Ryan, Coordinator

No Degree Offered

Nature of Program
The study of the humanities is the study of our effort to understand ourselves through history, literature, religion, philosophy, and fine arts. It is also the study of our effort to comprehend the masterpieces of the past and present as we seek to deepen our understanding of ourselves and our culture: what we are, why we are, and what our options for significant life are.

Individualized Major Program
Katherine Karraker, Coordinator
http://www.as.wvu.edu/indiv.html

Degree Offered
Bachelor of Arts
Major: Interdepartmental Studies

The individualized major provides the opportunity for a student to arrange an individually tailored program when the educational aims of the student fall between established department or program boundaries, and when these needs cannot be met by the Multi-disciplinary Studies Program. This major is administered directly by the assistant dean for Undergraduate Studies of the Eberly College of Arts and Sciences. Students should develop a program during the sophomore year since they are normally expected to embark on this program by the beginning of the junior year. An individualized major typically involves only two or three academic areas—at least one of which must be in the Eberly College—and the program should be planned so that the student attains the academic depth at least matching the depth and rigor of a traditional major.

Following the initial discussion with the assistant dean, students should seek counsel with individual faculty members, one of whom will become the student’s advisor. The student must submit a formal proposal to the assistant dean for acceptance into the program. The student should seek the advisor’s assistance with preparation of the proposal, and must then obtain an endorsement from a faculty member in each area of academic concentration; this endorsement should attest to the academic integrity of the student’s proposal. The proposal should include (a) a definition of the area of concentration, (b) a statement of the objectives served by the proposed program, and (c) a listing of courses that will constitute the program.

Since its approval in 1972, the individualized major program has attracted a number of interesting and challenging student proposals. Representative examples include a program in religious studies composed of courses in religious studies and communication studies; a psychobiology major that aims at the integration of knowledge about the physiological and psychological mechanisms involved in learning; and a European culture program that combines elements from the Departments of History, Foreign Languages, and Political Science.

More detailed information about the formal proposal is available at 213 Woodburn Hall.
Industrial Mathematics and Statistics
Edgar Fuller, Mathematics Chair
E. James Harner, Statistics Chair
http://www.math.wvu.edu/mathstat/index.html

Degree Offered
Bachelor of Science
Major: Interdepartmental Studies

Nature of the Program
The curriculum in industrial mathematics and statistics (IMS) provides students with the critical skills and knowledge needed to apply both statistics and mathematics to industrial and scientific problems. IMS is concerned with the mathematical, statistical, and computer modeling of various physical, biological, and social processes. Graduates will be trained to work in business, industry, and government, or they will be able to pursue a graduate degree in any of the mathematical sciences. Industrial mathematics and statistics is vital to our economic competitiveness and is critical to the development of our increasingly scientific/technological society.

Industrial mathematics and statistics is built on a foundation of differential/integral calculus, differential equations, applied probability, and statistics.

The mathematical tools encompass linear algebra, numerical analysis, continuous models rooted in differential equations, and discrete models linked to finite mathematical structures and Markov processes. Scientific computing extends the rudiments of programming into data visualization, the development of algorithms, and selected topics using high-level languages. Statistical topics especially relevant to industrial and scientific applications include design and analysis of experiments, statistical models, sequential analysis, reliability models, and time series analysis. These statistical methodologies are grounded in fundamental concepts of statistics and probability such as discrete and continuous probability distributions, stochastic processes, estimation and hypothesis testing, and exponential family models.

Performance Requirements
To maintain major status and to graduate, students must maintain at least a 2.0 overall GPA and a 2.0 cumulative GPA in coursework in mathematics and statistics.

Degree Requirements
A total of 128 hours is required for graduation. The following background courses are required (19 hours): MATH 155 (or MATH 153 and 154), 156, 251, 261, and STAT 215. The IMS program has the following core courses (12 hours) that all students must take: MATH 441 and; STAT 312 and 461 Mathematical Modeling.

The student then has the option of selecting a mathematics or a statistics emphasis (nine hours):

Mathematics emphasis: MATH 420 plus one mathematics and one mathematics or statistics course from the list of recommended electives below, or other department-approved courses.

Statistics emphasis: STAT 313 and STAT 445 or STAT 462 plus one mathematics or statistics course from the list of recommended electives below, or another department-approved course.

The required capstone experience for the IMS program requires the following courses: one hour of STAT 482 or MATH/STAT 491 or MATH/STAT 495; one hour of MATH/STAT 494; one hour of MATH/STAT 496. These courses should be taken during the student’s senior year.

Students must also satisfy all requirements of the college’s bachelor of science. For IMS students interested in computer science, the following normally restricted courses are available to IMS majors: CS 110, 111, 210, 220, 250, 320, and 330.
**Recommended Electives**
The recommended electives in mathematics and statistics are: MATH 283, 364, 420, 456, and 465; MATH/STAT 222; STAT 217, 313, 316, 331, 421, 445, and 462.

**International Studies**
Joe D. Hagan, Director
http://internationalstudies.wvu.edu/

**Degree Offered**
*Bachelor of Arts*
*Major: Interdepartmental Studies*

**Nature of The Program**
The international studies major is composed of internationally oriented courses drawn from several disciplinary and interdisciplinary study areas. Students take courses from such departments as economics, foreign languages, geography, history, political science, and sociology.

**Admission Requirements**
Admission to the degree program may be requested upon completion of 58 hours with a cumulative grade point average (GPA) of at least 2.0.

**Degree Requirements**
Students majoring in international studies initially take a variety of general introductory core courses (including a foreign language) and then focus on a specific area of emphasis with more advanced courses.

*Introductory Core Courses*
The introductory core is intended to introduce students to various perspectives on international affairs and prepare them for advanced study in the major. Required: ECON 201 and 202; INTS 199. Nine hours (three courses) from the following courses: ENGL 139; FLIT 113, 114, 115, 116, 117, 118; GEOG 102, 107, 108; HIST 102, 104, 105, 106, 108, 180; HUM 105, 120; MDS 126; POLS 103, 250, 260; SOCA 105.

*Area of Emphasis*
Majors are required to select an area of emphasis for specialized advanced study. The international studies program offers two types of areas of emphasis: regional tracks and global affairs tracks. Although students typically choose a single area of emphasis among either the regional or international tracks, it is possible and often valuable to combine an international track with a track on a specific geographical region.

Regional areas of emphasis offered in the program are Africa/Middle East, the Americas, Asia, and Europe. Students pursuing a regional area of emphasis are expected to pursue extensive language training at the advanced level and take courses dealing with the culture, politics, and history of the region as well as its social and economic problems. Foreign study is strongly encouraged as part of each area of emphasis and such coursework is typically counted towards the major's requirements. Each area of emphasis provides expertise necessary for government or private sector careers centered around a broad understanding of a particular geographical region. The requirements for the regional area of emphasis are as follows:

**Africa and the Middle East Required:** FRCH 301 and 302; or GER 301 and 302. Twelve hours (six courses) from the following courses: ECON 451, 454, 455; FRCH 303, 304; GEOG 302, 310; GER 303, 304; HIST 464; POLS 361, 364, 368; SOCA 322; WMST 245. Eighteen hours (six courses) from the following courses: FLIT 266; GEOG 243, 411; HIST 427, 428, 429, 430, 433, 434; MUSC 477; POLS 356, 358; RELG 232; SOCA 256.

**The Americas Required:** SPAN 301 and 302. Twelve hours (four courses) from the following courses: ECON 451, 454, 455; GEOG 302, 310; HIST 463, 464; POLS 361, 364, 368; SOCA 322; SPAN 303, 304; WMST 245. Eighteen hours (six courses) from the following courses: FLIT 251, 252, 266, 271; GEOG 240, 411, 466; HIST 241, 242, 409, 410; POLS 355, 367; SOCA 255; SPAN 330, 331, 332, 431, 461, 462.
**East Asia Required:** JAPN 301 and 302. Twelve hours (four courses) from the following courses: ECON 451, 454, 455; GEOG 302, 310; HIST 463, 464; JAPN 303, 304; POLS 361, 364, 368; WMST 245. Eighteen hours (six courses) from the following courses: FLIT 221, 222; GEOG 411; HIST 425, 426; PHIL 350; POLS 350, 354, 369; RELG 231.

**Europe Required:** FRCH 301 and 302; or GER 301 and 302; or RUSS 301 and 302; or SPAN 301 and 302. Twelve hours (four courses) from the following courses: ECON 451, 454; FRCH 303, 304; GEOG 302, 310; GER 303, 304; HIST 464; POLS 361, 364, 368; RUSS 301, 302; SPAN 303, 304. Eighteen hours (six courses) from the following courses: FLIT 211, 212, 231, 232, 241, 242, 243, 261, 262, 263, 273, 274, 433, 434, 435; FRCH 331, 332, 421, 461, 462, 534, 535, 635, 636; GEOG 241, 411; REL 331, 332, 341, 361, 362, 433, 434, 435, 441, 545, 547; HIST 205, 207, 209, 217, 218, 221, 232, 405, 406, 407, 408, 410, 413, 414, 417, 419, 420, 421, 422, 431, 432, 446; POLS 351, 353, 366; RUSS 341, 342, 451; SPAN 340, 342, 441, 461, 462.

The global affairs areas of emphasis encompass five aspects of contemporary global affairs: international business, international development, international environment, and diplomacy and international security, and intelligence and national security. Coursework in these areas emphasize general international affairs courses as well as certain general skills courses that provide background into the more technical aspects of these issues areas. Along with appropriate study abroad programs, students in these areas are encouraged to pursue internships in the policy making or business community in Washington, D.C., the United Nations, or in foreign countries. These five global affairs areas of emphasis are designed to provide the background for careers in government (e.g., the various national security bureaucracies as well as agencies dealing with development and the environment) and/or the private sector (e.g., multinational corporations as well as non-governmental agencies dealing with international policy issues). The requirements for the global affairs tracks are as follows:

**International Development Required:** GEOG 302; POLS 240, 300 or SOCA311; STAT 211. Eighteen hours (six courses) from the following courses: ACCT 201, 202; ECON 451, 454, 455; GEOG 310; HIST 464; POLS 361, 364, 368; SOCA 322; WMST 245. Eighteen hours (six courses) from the following courses: GEOG 243, 309, 411, 412, 466; HIST 242, 409, 411, 425, 428, 430, 433, 434; POLS 354, 355, 356, 358; SOCA 255, 256.

**International Business Required:** ACCT 201, 202; ECON 225, 451, 454. Twelve hours (four courses) from the following courses: ECON 455; GEOG 302, 310; HIST 464; POLS 361, 364, 368; SOCA 322; WMST 245. Twelve hours (four courses) from the following courses: GEOG 243, 241, 243, 309, 411, 412, 466; HIST 242, 209, 214, 218, 221, 242, 409, 410, 411, 414, 418, 420, 422, 425, 426, 428, 430, 433, 434; POLS 350, 351, 353, 354, 355, 356, 358, 366, 367, 369; SOCA 255, 256; SPAN 461, 462.

**International Environment Required:** BIOL 105; GEOG/GEOL 110; POLS 261. Fifteen hours (five courses) from the following courses: ECON 451, 454, 455; ENVP 155; FOR 425; GEOG 205, 302, 310, 415; POLS 338, 364, 368; WMAN 150; WMST 245. Twelve hours (four courses) from the following courses: GEOG 240, 241, 243, 309, 411, 412; HIST 209, 214, 218, 221, 242, 409, 410, 411, 414, 418, 420, 422, 425, 426, 428, 430, 433, 434; POLS 350, 351, 353, 354, 355, 356, 358, 366, 367, 369; SOCA 255, 256.

**Diplomacy and International Security Required:** GEOG 302; POLS 300 or SOCA 311, POLS 368; STAT 211. Twelve hours (four courses) from the following courses: ECON 451, 454; GEOG 310; HIST 463, 464; POLS 310, 362, 365, 361, 364; SOCA 345; WMST 245. Twelve hours (four courses) from the following courses: GEOG 240, 241, 243; HIST 209, 214, 218, 221, 242, 409, 410, 411, 414, 418, 420, 422, 425, 426, 428, 430, 433, 434; POLS 350, 351, 353, 354, 355, 356, 358, 366, 367, 369; SOCA 255, 256.

**Intelligence and National Security Required:** POLS 301; POLS 302, POLS 362, POLS 365; and FRCH 301 and 302; or GER 301 and 302; or JAPN 301 and 302; or RUSS 301 and 302; or SPAN 301 and 302. Twelve hours (four courses) from the following courses: ECON 451, 454; GEOG 310; HIST 463, 464; POLS 310, 361, 364; SOCA 345; WMST 245. Twelve hours (four courses) from the following courses: GEOG 240, 241, 243; HIST 209, 214, 218, 221, 242, 409, 410, 411, 418, 420, 422, 425, 426, 428, 430, 433, 434; POLS 350, 351, 353, 354, 355, 356, 366, 367, 369.
Academic Advising
All international studies pre-majors and majors, including those enrolled in the University Honors Program, are advised by designated faculty in the international studies program.

Options: Internships and Study Abroad
Students are strongly encouraged to take advantage of opportunities for professional internships and study abroad, which may be undertaken for academic credit (often fulfilling specific course requirements for the major) with the approval of students’ designated international studies advisors. Through internships, students gain first-hand knowledge of private and business organizations engaged in international social, economic, and governmental affairs. To experience another society and in many cases to improve their foreign language capabilities, students may also study abroad for a summer, one semester, or an entire academic year. Interested students should consult their international studies advisor.

Minor in International Studies
Any student admitted to a major program other than international studies may complete a minor in international studies. Toward this minor, students must satisfy the following requirements:

- Completion of one upper-division course (three hours) outside the discipline of the major, selected from the advanced core cluster of courses in international studies: ECON 451, 454; GEOG 302, 310; HIST 463, 464; POLS 250, 260, 364, 368.
- Completion of four upper-division courses (12 hours) outside the discipline of the major, in one of the following areas in international studies. In each area of emphasis, courses must be taken in at least three departments. This requirement is intended to broaden students’ awareness of their areas of emphasis in the minor, beyond the perspectives of single academic disciplines. For the purposes of international studies, all FLIT and foreign language courses are considered to be in one department.
  - **Africa and the Middle East** ECON 455; GEOG 243, 411; HIST 427, 428, 429, 430, 433, 434; MUSC 477; POLS 356, 368; RELG 232; SOCA 256; WMST 245.
  - **The Americas** ECON 455; FLIT 251, 252, 266, 271; GEOG 240, 411, 466; HIST 241, 242, 409, 410; POLS 355, 367; SOCA 255; SPAN 330, 332, 431, 461, 462, 494; WMST 245.
  - **East Asia** ECON 455; FLIT 221, 222; GEOG 411; HIST 425, 426; PHIL 350; POLS 350, 354, 369; RELG 230, 231; WMST 245.
  - **International Development** ECON 455; GEOG 243, 309, 411, 412, 466; HIST 242, 409, 411, 425, 428, 430, 433, 434; POLS 354, 355, 356, 358; SOCA 255, 256; WMST 245.

To complete the minor successfully, students must achieve a grade point average of 2.0 in approved international studies courses. Courses graded P/F may not be applied to the international studies minor.

Leadership Studies
Lawrence S. Cote, Director
http://leadershipstudies.wvu.edu/

Nature of Program
The leadership studies program is an 18-hour undergraduate academic minor open to students in all majors. Students pursuing this interdisciplinary minor are guided through discovery of their full potential as leaders, and effective followers. The addition of leadership knowledge and skills to the student’s West Virginia University portfolio is likely to be perceived as a valuable asset by future employers.
Curriculum
The leadership studies curriculum is tailored to complement the student’s major. Study includes research-based theory, lessons learned from experienced leaders, concepts of service leadership and the actual practice of leadership. Completion of the minor prepares the student for a future as a trusted leader in a wide variety of personal, community, and employment contexts, and as an effective, well informed follower. Individualized coaching and mentoring is a characteristic of this program.

Extra Curricular Component
Students pursuing this minor are strongly encouraged to participate in the many extra curricular leadership events and programs co-sponsored annually by leadership studies and its affiliates and program partners. These collaborating organizations and program partners include the on-campus Leadership Studies Student Association (LSSA), Student Government Association (SGA), and other WVU academic disciplines. Program partners off-campus include selected other university-based leadership programs (such as the Center for Ethical Leadership of the LBJ School of Public Affairs at the University of Texas-Austin), the West Virginia Roundtable and its annual West Virginia Leadership Conference, and the International Leadership Association (ILA), in which WVU has an institutional membership.

Leadership studies students are strongly encouraged to build academic study abroad into their overall undergraduate curriculum, ideally with leadership study and/or applied leadership theory as one focus of the international experience(s).

Scholarships
The study of leadership is supported by several scholarships and awards. These funds support academic and extra curricular enrichment activities to enhance the student’s study, practice, and understanding of “mobilizing others to bring about sustained positive change,” the definition of leadership for this minor. They include the Milan Puskar Leadership Scholars Program, the Emma G. Noe Scholarship, the Johnathan M. Hollfield Annual Leadership Lecture, and the annual West Virginia Roundtable Susan and David C. Hardesty Jr. Leadership Scholarship. For more information about the application process please contact the Leadership Studies Office or check the website.

Instructors
Most instructors for leadership studies courses have a combination of academic preparation and formal study in leadership and/or related fields, and ‘real world’ experience as acknowledged leaders in their respective career fields. Students interact with WVU faculty and administrators who teach courses regularly in this program, and individuals from the community with distinctive achievements as leaders. Numerous leaders-in-practice volunteer as guest lecturers, panelists, and as leader mentors for the capstone-practicum course LDR 401.

Admission Requirements
Students must meet with the faculty director of leadership studies or assistant for advising to complete an initial 18-hour plan of study, ideally prior to registering for the second core course LDR 301.

Minor Requirements
Core Courses (nine hours). LDR 201, 301, 401 completed in sequence.
Elective Courses (nine hours). The list of currently approved elective courses is available on the website and in the Leadership Studies Office. The nine hours must be 300-level or above (upper division) from at least two different fields, with no more than six hours completed in one field. Students may not use upper division courses required for their major nor another academic minor as a leadership studies elective. Students may petition the director of leadership studies in writing to propose substitute elective courses that help tailor the 18 hour minor to individual career interests, and unique opportunities to develop the skills and knowledge of each emerging leader. Elective courses also include: LDR 382 offered for one credit hour each, up to three of which may be completed to satisfy a portion of the electives requirement. LDR 382 courses have included non-hierarchical
leadership, leadership in literature, participatory methods for leaders, leadership in the arts, and parliamentary procedure as a tool for leaders. LDR 493 and LDR 495 are offered for one to six credit hours and focus on topics like fund-raising, rural economic sustainability, stage presence for leaders, and leadership in sports, and often include a study abroad component.

**Completion of the Minor**

Students must obtain a grade point average (GPA) of 3.0 for the nine hours of core courses, and a GPA of 2.5 for the nine hours of elective courses.

**Mathematics**

Edgar Fuller, Chair  
http://www.math.wvu.edu/drupal/node/17

**Degrees Offered**

* Bachelor of Arts  
* Bachelor of Science

**Nature of Program**

The Department of Mathematics provides a curriculum with programs for:

- An undergraduate major and minor in mathematics.
- The pre-service elementary and secondary teacher.
- Students interested in the applications of mathematics to the fields of computer science, statistics, engineering, physical, natural and social science, and business and economics.
- The non-science major, to explain the ideals and objectives of mathematics.

**Admission Requirements**

To be admitted to the mathematics degree program, students must have at least a 2.0 overall grade point average (GPA); must have completed MATH 155 (or MATH 153 and 154), 156, and 283 with at least a grade of C in each; and must have at least a 2.5 GPA in all of the required mathematics courses attempted prior to the request for admission. MATH 283 should be taken no later than the sophomore year, and if that course has not been completed with a grade of at least a C, a student may request admission on a provisional basis; the petition should be addressed to the Mathematics Academic Standards Committee.

**Degree Requirements**

Mathematics majors must complete at least 39 hours of approved courses in the mathematical sciences, plus a capstone requirement. For the bachelor of arts degree and the bachelor of science degree, the required courses are: MATH 155 (or MATH 153 and 154), 156, 251, 283, 343 or 441, 222 or 420, STAT 215 or 461, and two additional upper-division courses. These two courses may be selected from those numbered above 200 with the exclusion of MATH 231, 331, 332, and 455. It may be possible to substitute one of the two additional courses with an upper-division course offered by another department. The content of such a course must be at an advanced level mathematically and its acceptability will require prior departmental approval.

In addition, for the B.A. degree, students must take at least one of MATH 261 and 378 and at least two from MATH 341, 381, 451, 456. For the B.S. degree, students must complete MATH 261 and 451 and take at least one course from MATH 341, 381, 456.

Students completing the B.A. program must complete WVU GEC requirements, Eberly College of Arts and Sciences B.A. requirements, major requirements (above), and electives to total 128 hours.

Students completing the B.S. program must complete WVU GEC requirements, Eberly College of Arts and Sciences B.S. requirements, major requirements (above), and electives to total 128 hours.
Successful completion of the major requires that the student receive at least a grade of C in each of the required mathematics courses presented for the degree, or a cumulative grade point average of at least 2.25 in the courses numbered above 200. An upper-division mathematics course for which the grade is lower than C (including a grade of W) may be repeated only once. In this case, the second grade is used to compute the mathematics grade point average and determine whether the 2.25 average is satisfied. A student with a valid medical or emergency reason for failing to receive an acceptable grade in two attempts may petition the Mathematics Academic Standards Committee for permission to register a third time.

**Recommended Electives**

Students should choose a computer science elective so that they can achieve programming proficiency. Programming skills are a prerequisite for MATH 420. Elective courses are selected in consultation with a departmental advisor; they should be based on interests and goals.

**Minor in Mathematics**

Students who wish to pursue mathematics as a secondary field, either to support another major or to obtain deeper insight into mathematics itself, can receive a minor by successful completion of 24–25 hours of approved courses.

Two tracks lead to the minor. The corresponding required courses are:

**Track One** MATH 155 (or MATH 153 and 154), 156, 251, 283; at least one course chosen from among MATH 341, 343, 381, 451; two additional courses chosen from those numbered above 300 with the exclusion of MATH 331, 332, and 493, and the inclusion of STAT 461.

**Track Two** MATH 155 (or MATH 153 and 154), 156, 251, 261; at least one course chosen from MATH 375, 420, 456, and 465; and two additional courses chosen from those numbered above 300 with the exclusion of MATH 331, 332, and 493, and the inclusion of STAT 461.

The student’s interests and goals will determine which plan is most appropriate as well as which electives best meet these interests and goals. The choice should be made in consultation with the student’s major advisor; additional information may be obtained from one of the advisors in the Department of Mathematics.

Successful completion of the minor requires that the student receive a grade of at least a C in each of the mathematics courses presented for the minor, or a cumulative grade point average of at least 2.25 in these courses.

**Placement into Mathematics Courses**

To enroll in a freshman-level mathematics course, a student must demonstrate a satisfactory understanding of background material, either in the prerequisite courses specified in this catalog or by satisfactory performance on the Quantitative Reasoning Assessment (QRA). The QRA is given during orientation for freshman and transfer students. It is also given before classes begin each semester. Students intending to take the QRA before classes begin must register for the exam prior to the day the test is given. Sign-up can be done by visiting the department website. There is no fee for the exam. The QRA may only be taken twice during a four-year period. Students who do not meet the prerequisites will be dropped from their math class during the first week of classes.

**Math Learning Center**

The Department of Mathematics offers help to students in mathematics courses through its Math Learning Center, located in room 301 Armstrong Hall. The Math Learning Center is a free, drop-in help center for students enrolled in undergraduate math classes through calculus. Hours are posted at the beginning of each semester and announced in mathematics classes. The phone number is (304) 293-7273.
Multidisciplinary Studies Degree Program
Evan Widders, Coordinator
http://mds.wvu.edu/

Degree Offered
Bachelor of Arts (B.A.) and Bachelor of Multidisciplinary Studies (B.MdS.)

The multidisciplinary studies degree program is comprised of three related minors. The program does not limit students to courses of study in a particular college or school, but rather stresses the importance of breadth of knowledge and cross-disciplinary communication. The program emphasizes flexibility and combines specialized knowledge from individual disciplines with a unique ability to approach problems from divergent perspectives. Students learn to apply their minors to real-world problems and to apply multidisciplinary techniques in communicating the strengths of their self-chosen course of study.

Each student chooses three minor areas and must demonstrate how these areas work together toward his/her educational and/or career goals. For example, a student may choose the areas of business administration, sport and exercise psychology, and advertising, with the goal of a career in sports and special events marketing/coordination. MDS students participate in a capstone during their final semester, as a means to incorporate all three disciplines into a senior project, presentation, and paper.

Curriculum
The bachelor of multidisciplinary studies (B.MdS.) degree program requirements include the following:

- Completion of the General Education Curriculum
- Completion of ENGL 101 and 102, or 103
- Completion of a writing (W) course in addition to ENGL 101 and 102, or 103
- Completion of a mathematics course in addition to any additional math requirements of the selected minors
- Completion of three minors in which none of the courses has been used to satisfy General Education Curriculum requirements
- A grade of C or better in all minor coursework
- Completion of at least 60 credit hours of 200-level or above coursework. Of the 60 hours, 30 must be 300–400 level coursework
- Completion of the MDS 199 orientation course with a grade of C or better
- Completion of the MDS 492 capstone course with a grade of C or better
- Achievement of a cumulative grade point average of at least 2.0
- Completion of at least 128 credit hours

Students also have the option of earning a bachelor of arts (B.A.) degree with a multidisciplinary studies major. This option encourages students who choose multidisciplinary studies to couple foreign language study with University and MDS program requirements. This essentially provides a fourth area of concentration for B.A. students, and aligns with national and institutional goals of producing international citizens. Requirements for the bachelor of arts degree with a multidisciplinary studies major are:

- Completion of all requirements for the multidisciplinary studies degree program, listed above; and
- Completion of the Eberly College of Arts and Sciences bachelor of arts requirements.

Admission
Admission to the program is possible after completion of at least 58 credit hours with a cumulative grade point average of at least 2.0. Students may not declare the MDS degree before completion of 58 credit hours. Admission and completion of the degree program are the result of an academic program articulated by the student with assistance from the student’s academic advisor. The student must enroll in MDS 199 and develop a plan identifying three areas of study and explaining how the student intends to integrate the knowledge and skills from each area to formulate an educational and/or career goal.
Special Policies

The required MDS capstone course must be taken in the student’s semester of graduation. An MDS student who is graduating in the summer may take no more than 14 credit hours in summer.

Native American Studies
Bonnie M. Brown, Coordinator
http://www.wvu.edu/~nas/earnnasminor.html

The minor in Native American Studies is an interdisciplinary program offered through the Eberly College of Arts and Sciences. The curriculum is designed to develop greater respect for and understanding of Native views by providing historical and contemporary information about the unique heritage of Native Americans.

Students who choose the NAS minor come from a variety of academic programs as far-ranging as business, engineering, art, history, and health sciences, to name a few. NAS graduates put their minor to use in practical ways, such as in cultural resource management, education, law, and government. Students who complete the NAS minor enhance their ability to think in nontraditional ways and interact more effectively with diverse populations.

Requirements for the Minor

Students must complete a total of 18 hours (this includes nine lower-division and nine upper-division).

The following three lower-division courses, which ALL satisfy WVU GEC requirements, are required for the NAS minor: NAS 200, ENGL 156, HIST 264.

Students have many courses to choose from to fulfill the nine hours of upper-division credit. A sampling of these courses includes: COMM 316, ENGL 356, HIST 441, POLS 355, SOCA 358, SOCA 359, SOCA 405, NAS 493, NAS 495.

Students may not count more than three hours of NAS 495 toward the minor. Students must earn a C or better in each course counted toward the minor. Of the upper-division courses listed, English 356, NAS 493, NAS 495 are wholly focused on Native Americans; the other courses have a partial focus on Native Americans. NAS 493 subjects include such topics as: Eastern Woodland Indians, Lakota studies, contemporary Native American issues, research with indigenous peoples, and so on.

Students should consult with the NAS coordinator to learn about other courses of interest and opportunities for additional academic exploration of Native American topics.

Philosophy
Sharon Ryan, Chair
http://philosophy.wvu.edu/

Degree Offered
Bachelor of Arts

Nature of Program

The Department of Philosophy is a small, academically vibrant, student-centered, undergraduate program. Our mission is to provide an outstanding, liberal arts education with all the advantages of a large research University.

Philosophy students are trained to understand and to respond both critically and creatively to philosophical problems, theories, and arguments. Philosophy students investigate fundamental questions that have puzzled human beings for ages. Philosophy deals with questions such as: What do we know and how do we know it? What is morally right and how should we live? What is the nature of the human mind and self? Is there a God and how might human beings know about God? What is the ideal form of government? What is the ultimate nature of reality?

The areas in which students receive instruction include logic, ethics, social-political philosophy, philosophy of law, theory of knowledge, philosophy of science, continental philosophy, metaphysics, history of ancient and modern philosophy, and philosophy of religion.
Because of the vigorous critical thinking students enjoy in a philosophy class, the study of philosophy provides very strong preparation for a wide range of careers including law, business, medicine, and journalism. Those who desire a career teaching philosophy in college will need the Ph.D. degree.

Philosophy is an especially strong major for students going to law school. We offer a pre-law area of emphasis within the philosophy major.

For students without any definite career plans, philosophy is an excellent major in that it provides skills essential for any career that requires clear communication, problem solving, strong writing, evaluation and/or creation of policies and procedures, comfort with complexity and disagreement, and careful and creative thinking.

Admission Requirements
Students who meet general admission requirements for the University are eligible to become pre-philosophy majors. Upon completion of 58 college credit hours with a grade point average (GPA) of at least 2.0, as well as a GPA of at least 2.0 in all courses completed in philosophy, students are eligible for admission to the degree program in philosophy.

Major Requirements
A degree in philosophy requires 30 hours in philosophy, including 18 hours of work at the 300 level or above. The following courses are required: PHIL 244, 248, 260, 301 or 302, 321 or 346, and 494 or 496. A grade of C or higher must be earned in required courses, and majors must possess at least a 2.0 average in all philosophy courses in order to graduate.

Students who decide to take PHIL 496 Senior Thesis, instead of 494 Junior-Senior Seminar should make arrangements with a faculty member during the semester preceding the one in which he or she plans to write the thesis. Only students who have a 3.7 average or higher in philosophy courses are eligible to write the senior thesis. Ability to enroll in PHIL 496 will depend upon the availability of a faculty member who is able to work with the student, the student's level of preparation for successful completion of a thesis, and the student's submission of an appropriate proposal for the thesis.

Minor in Philosophy
Any student admitted to an undergraduate degree program at WVU may complete a minor in philosophy. The minor is designed to acquaint students with a broad range of philosophical topics and skills, and to introduce them to the fundamental issues in philosophy. The minor consists of 15 hours in philosophy, with at least nine hours at the upper level (300 level or above).

Pre-Law Area of Emphasis in Philosophy
Philosophy is an excellent preparation for law school. The course of study for the pre-law area of emphasis includes all of the requirements for the philosophy major as well as PHIL 130, 323, and 325.

Physics, Astronomy, and Physical Science
Earl E. Scime, Chair
http://physics.wvu.edu/

Degrees Offered
Bachelor of Arts
Bachelor of Science

Nature of Program
There are two degree options for students in physics. The bachelor of science is designed for students committed to a career in research and is typically followed by graduate work in physics, chemistry, materials science, optical sciences, astrophysics, engineering, or in other physical sciences such as meteorology, oceanography, etc. Some students accept positions in industry or in a government laboratory immediately after completing the B.S.
This degree program provides a comprehensive grounding in the fundamentals of physics and is usually accompanied by participation in one of the active research programs within the department.

The bachelor of arts degree is more flexible. By allowing more free elective choices, it prepares a student for a career that combines a science background with subsequent professional training. Typical career paths for this degree program include secondary education, medical school, patent law, forensics, health, physics, environmental engineering, journalism, government policy, and business management.

The courses in physics provide a mix of theoretical concepts and practical examples. Each course within a degree plan builds upon the knowledge base acquired in previous courses and, together, these courses allow a student to acquire the combination of physical insight and mathematical skill needed for success in today's demanding job markets. The department also offers introductory survey courses in physics and astronomy which are of interest to a broad range of students in the social sciences, fine arts, humanities, health sciences, and education. These courses use a minimum of mathematics to introduce the principles of physics and they provide many examples from the "real world" of the environment, energy, space, communications, transportation, and medicine.

Admission Requirements

Admission to the B.A. and to the B.S. in physics programs requires, in addition to college requirements, at least a 2.5 GPA in all required introductory physics and mathematics courses (which must include PHYS 111, 112, MATH 155 (or MATH 153 and 154), 156, 251, and 261 or their equivalents).

Degree Requirements

The B.A. degree requires a minimum of 128 hours. This includes: 31 hours of University requirements (GEC and Capstone); two hours of Eberly College of Arts and Sciences requirements (foreign language); and 54 hours in physics department requirements (30 in physics, eight in science, 16 in mathematics). Continuance in the program requires that the student maintain at least a cumulative 2.2 GPA in all physics and mathematics courses. Any physics or mathematics course for which the grade is lower than C (including a grade of W) may be repeated only once. In this case, the second grade is used to compute the GPA and determine whether the 2.2 average is satisfied. Specific course requirements are, in physics: Orientation 199 (physics section), PHYS 111, 112, 211, 314, 331, 333, 341 (2 hrs.), and six hours of electives. In mathematics: MATH 155 (or MATH 153 and 154), 156, 251, 261. In science: eight hours from biology, chemistry, computer science and/or geology. In addition students have at least 31 hours of unrestricted free electives which can be used to prepare for entry into a professional program (teaching, law, medicine, other physical sciences, for example) or into the job market.

The B.S. degree requires a minimum of 128 hours. This includes: 31 hours of University requirements (GEC and Capstone); and 71 hours in physics department requirements (44 in physics, eight in one other science, 19 in mathematics). The student must maintain at least a 2.2 cumulative GPA in all physics and mathematics courses in order to continue in the program. Any physics or mathematics course for which the grade is lower than C (including a grade of W) may be repeated only once. In this case, the second grade is used to compute the GPA and determine whether the 2.2 average is satisfied. Specific course requirements are, in physics: Orientation 199 (physics section), PHYS 111, 112, 211, 314, 331, 333, 332 or 334, 341 (two semesters), 451, 461, plus nine hours of electives. In mathematics: MATH 155 (or MATH 153 and 154), 156, 251, 261, plus one three-hour elective. In addition, students have at least 26 hours of unrestricted free electives.

The areas of emphasis (AOEs) described below encourage students to tailor and expand on the basic B.S. physics degree requirements to develop specialized competencies in selected interest areas that span more than two disciplines. Courses proscribed in each AOE description are instead of 14 hours of physics courses (the four physics electives and one semester of PHYS 341) required in the B.S. degree. Several of the AOE's require basic science courses in chemistry or computer science, which fulfill the college requirement of eight hours in a third science, so that these are not an extra requirement. Completion of an AOE is posted to the student's transcript and the courses in the AOE can be used to satisfy the physics elective requirements and the University capstone requirement. The
AOEs emphasize research experience and each requires either a summer research experience (at WVU or another institution) or a capstone experience in the area of emphasis. Students wishing to complete more than one area of emphasis will need to complete a summer research or capstone experience in each AOE. The research experience must be approved by the student’s undergraduate physics advisor. Example academic schedules for each AOE can be found at www.wvu.edu/~physics.

The area of emphasis in **applied physics** is designed for those who are interested in employment or future study in applied physics or engineering. In addition to the 32 hours of physics, the other requirements are: EE 221, 223, 251, 252, and MAE 241, 242, 331, 423. Also required is a capstone experience or a summer research experience emphasizing an applied physics topic.

The area of emphasis in **astro/space physics** is designed for those who are interested in future study in astronomy or astrophysics. In addition to the 30 hours of physics, the other requirements are: ASTR 367, PHYS 321, PHYS 481, GEOL 455, EE 221, 223, 465, MAE 331, and a second semester of PHYS 341 with an astrophysics emphasis. Also required is a capstone experience or a summer research experience emphasizing astro/space physics.

The area of emphasis in **biophysics** is designed for those who are interested in future study in medicine with a strong physics preparation. In addition to the 32 hours of physics, the other requirements are: CHEM 115, 116, 233, 234, 235, 236, 346, 348, BIOL 115, 117, 219, 310, and BIOC 339, and PHYS 225. Also required is a capstone experience or a summer research experience focused on medical physics or biophysics.

The area of emphasis in **computational physics** is ideal for those who are interested in computation. In addition to the 32 hours of physics, there are 24 hours of computer science requirements: CS 110, 111, 210, 470, one CS elective, and Math 420. One additional three-hour elective must be chosen from either physics or computer science. All required physics or computer science electives must be from courses at or above the 200 level. Also required is a capstone experience or a summer research experience emphasizing computational physics.

The area of emphasis in **materials science** is designed for those who are interested in employment or future study in materials science. In addition to the 32 hours of physics, the other requirements are: PHYS 471, 321, CHEM 115, 116, 341, CHE 366, CHE 466, EE 450, and a second semester of PHYS 341 with an emphasis on condensed matter. Also required is a capstone experience or a summer research experience emphasizing materials science.

The area of emphasis in **medical physics** is designed for those who are interested in future study in medical physics. In addition to the 32 hours of physics, the other requirements are: CHEM 115, 116, 233, 234, 235, 236, BIO 115, 117, 310, EE 425, 465 and PHYS 225. Also required is a capstone experience or a summer research experience emphasizing medical physics.

Early departmental advising is recommended in setting up a well-planned program.

**Minor in Physics**

The minor is designed to introduce students to the basics of contemporary physics and to acquaint them with the rich diversity of current physics. Students who wish to pursue physics as a second field can receive a minor in physics by successful completion (2.0 average or higher in the physics courses) of PHYS 111, 112, and 314 as well as six credit hours from any PHYS course or courses numbered 300 or above.

**Minor in Astronomy**

The minor is designed to provide a broad overview of the field of astronomy. The astronomy minor consists of 21 credit hours of course work. Required core courses: PHYS 111; PHYS 112; PHYS 314 (12 hrs). Minors also complete nine credit hours from any ASTR courses numbered 300 and above. Physics majors may complete an astronomy minor, provided the ASTR courses counted toward the minor are not counted as electives toward the physics major. A minimum grade of C or better is required in each course counted toward the minor.
Political Science
Joe D. Hagan, Chair
John C. Kilwein, Associate Chair
Robert E. DiClerico, Director of Undergraduate Studies
http://polisci.wvu.edu/

Degree Offered
Bachelor of Arts

Nature of Program
The undergraduate curriculum in the Department of Political Science has six main objectives:

• To acquaint students with the nature and role of government in modern society, thus contributing to the general education of political science majors. In order to achieve this objective, the department offers the general political science emphasis. This emphasis is open to any student who has an interest in political science but who has not yet focused on a specific career goal.

• To impart a basic knowledge and understanding of the public policy-making process, including the techniques used by policy analysts and public administrators. To accomplish this objective, the department offers the public policy and administration emphasis. Students having a desire to work in government and/or to obtain an advanced graduate degree in public policy studies or public administration at WVU, or elsewhere, should enroll in this emphasis. Additional information concerning graduate programs in public administration and public policy (M.A., M.P.A., or Ph.D.) at WVU is in the WVU Graduate Catalog online at http://coursecatalog.wvu.edu.

• To provide pre-professional training for students preparing to enter the legal profession. Students interested in legal careers should enroll in the pre-law and legal studies area of emphasis.

• To develop specialized knowledge in the field of environmental studies for students whose career interests are natural resource management and protection. Students with this interest should choose the environmental studies emphasis as their major.

• To develop understanding of the international and global dimensions of world and national politics. Students who wish to concentrate their coursework in international relations and foreign affairs as preparation for careers in this area should enroll in the international and world affairs area of emphasis.

• To provide pre-professional training for students who intend to pursue political science as a career. Those who intend to be teachers, researchers, or administrators should plan to enroll in graduate school after completing their bachelor’s degrees. The professional political scientist who intends to teach or do applied research in public policy should choose the public policy and administration emphasis. This emphasis will prepare students for the M.A. and Ph.D. with a focus on public policy studies or the M.P.A. with a focus on public administration.

Admission Requirements
Students may apply for admission to the Department of Political Science after completing 58 credit hours with a cumulative grade point average (GPA) of 2.1 or better. In addition, students must maintain a cumulative GPA of 2.0 in order to remain a political science major. Freshman and sophomore students with a 2.0 GPA may apply as pre-political science majors. Upon admission, each student will be assigned a faculty advisor in the department. Pre-political science majors should enroll in the special class POLS 199, which introduces freshmen and sophomores to the political science faculty, academic requirements, and career opportunities in political science.
Degree Requirements
A cumulative and political science GPA of 2.0 is required for graduation. In addition, no major with an incomplete in a political science course will be certified for graduation.

- Students majoring in political science must take POLS 102, 230 or 240, 250, 260, 270 or 271 and 300 and a minimum of 39 hours total in political science including the senior capstone course. Courses may be selected from the following fields.


- The department also offers courses that deal with the scope of political science and the various techniques employed by political scientists to investigate and analyze political data. POLS 300 is required of all majors.

- Students may also arrange to take selected special courses dealing with a special topic or involving experiential learning. These courses are scheduled on a group or tutorial basis with individual faculty members. Courses available for this type of instruction are POLS 293, 388, 389, 491, 493, and 494. These courses also count toward the 39 hours required in political science. However, no more than six hours of POLS 491 Field Experience may count toward the 39-hour requirement. POLS 491 is graded on a pass/fail basis.

- With the exception of the pre-law and legal studies and the government and business emphases, all political science majors must take 12 hours in a secondary field. The choice of a secondary field depends on the interest of the student and the particular emphasis in which the student is enrolled. Secondary fields available include: economics, geography, history, philosophy, psychology, sociology and anthropology, statistics and/or computer science, business, English, journalism, social work, communication studies, mathematics, foreign languages, the natural sciences, and interdepartmental studies. No teaching practicum may be used to satisfy major or secondary field requirements.

- All majors are required to take ECON 201 and 202.

Areas of Emphasis
Each political science major must enroll in a political science emphasis, depending on his or her academic or career interest. The areas of emphasis and the individual requirements of each are as follows:

General Political Science Emphasis (general liberal arts) Students selecting the general emphasis are expected to take courses that expose them to the full range of the discipline of political science and the other social sciences. Required: POLS 102, 230 or 240, 250, 260, 270 or 271 and 300; ECON 201 and 202; 39 hours total in political science courses; six hours from PSYCH 101, SOCA 110, 105, GEOG 102, 108 and PHIL 170; and 12 hours in a secondary field.

Public Policy and Administration Emphasis (public service careers) Students enrolling in the public policy and administration emphasis take courses that prepare them for work in government, non-profit organizations, and selected private businesses. This area emphasizes training in public policy analysis, public administration, selected policy issues (such as energy, environment, and civil rights), and statistical techniques. Required: POLS 102, 220, 230 or 240, 250, 260, 270 or 271 and 300; ECON 201 and 202; six hours of policy courses selected from POLS 315, 331, 333, 334, 335, 336, 338; STAT 211 and CS 101; and 12 hours in a policy field or selected secondary field.

Pre-Law and Legal Studies Emphasis (careers in law or criminal justice) Students selecting the legal studies emphasis are required to take a variety of substantive and skills courses which are recognized as valuable background for the study of law. This specialized curriculum is drawn from several departments, including English, philosophy, statistics, accounting, sociology and anthropology, and psychology. Required: POLS 102, 230 or 240, 250, 260, 270 or 271 and 300; ECON 201 and 202; nine hours (three courses) from the following law-related courses in political science POLS 210, 312, 313, 314, 315, 344, 363;
nine hours (three courses) from the following skills courses CS 101, ACCT 201 and 202, SPA 270, ENGL 201, STAT 211, PHIL 170, 260, ECON 225; and six hours (two courses) from the following substantive courses in law-related disciplines SOCA 232, 233, 330, 331, 334, and 461, PHIL 130, 325, ECON 441 and 445, PSYC 251.

**Government and Business Emphasis (careers in government and/or business)** Students choosing to enroll in the government and business emphasis take courses that will enable them to develop extensive knowledge of government and politics, government as it relates to business, and introductory knowledge of business principles and practices. Students in this emphasis will target jobs in either the public or private sectors. Required: POLS 102, 230 or 240, 250, 260, 270 or 271 and 300, POLS 310, 317, 318, 334; ECON 201 and 202; 12 hours from ACCT 201 and 202, MATH 126, 129, 155, 156, 124, 150, ECON 225, STAT 211, and CS 101; nine hours from BUSA 310, 320, 330, and 340; and three hours from SOCA 334, 337, PSYC 231, and ECON 441, 445, and 481.

**Environmental Studies Emphasis (careers in natural resource management and policy)** Students in the environmental studies emphasis receive training in the natural sciences and in the politics of natural resource policy and evaluation. Designed for students who anticipate a career dealing with environmental problems, this emphasis requires: POLS 102, 220, 230 or 240, 250, 260, or 270, 271, 300, 336 or 338; ECON 201 and 202; MATH 155 (or MATH 153 and 154) and ECON 225; six hours from ARE 220, 382, 410; and 12 hours in either biology, chemistry, or geology.

**International and World Affairs Emphasis (careers in international affairs)** Students choosing the international and world affairs emphasis specialize in several main sub-fields of the discipline, including international relations, foreign policy analysis, and foreign and comparative governments. This emphasis is one of two options available to students interested in international relations. The Department of Political Science, in cooperation with other departments, also offers the interdepartmental major in international studies, which is headed by a faculty member in the Department of Political Science. This major offers an extensive treatment of international affairs from the perspective of a variety of disciplines. The international and world affairs emphasis, on the other hand, is offered exclusively by the department. Required: POLS 102, 230 or 240, 250, 260, 270 or 271, and 300; ECON 201 and 202; six hours (two courses) from the following courses dealing with international relations POLS 360, 361, 362, 363, 364, 365, 366, 367, 368; three hours (one course) which focuses on an industrialized country POLS 350, 351, 352, 353; three hours (one course) which deals with a developing country POLS 354, 355, 356, 358; six hours from the following history courses HIST 209, 242, 425, 426, 430, 463, 464; and 12 upper division hours in a secondary field.

**Minor in Political Science**

Any student admitted to a major program other than political science may complete a formal academic minor in political science. In order to earn a formal minor, students must complete one of the following options.

**General Political Science** Required courses: six hours from POLS 102, 210, 220, 230 or 240, 250, 260. Any three additional courses from POLS 310–379. POLS 493 and 494 may be counted toward the minor with departmental approval.

**American Politics and Policy** Required courses: six hours from POLS 102, 210, 220, 230 or 240. Any three additional courses from 310–349. POLS 493 and 494 may be counted toward the minor with departmental approval.

**International and Comparative Politics** Required courses: POLS 250, 260. Any three additional courses from 350–369. POLS 493 and 494 may be counted toward the minor with departmental approval.

**Law and Legal Studies** Required courses: POLS 102, 210. Any three additional courses from 312, 313, 314, 331, 335, 363. POLS 493 and 494 may be counted toward the minor with departmental approval.

**Political Theory Required** courses: POLS 270, 271. Any three additional courses from 370–379. POLS 493 and 494 may be counted toward the minor with departmental approval.

Students must achieve at least a 2.0 in the 15 hours taken in political science. Courses graded P/F may not be applied toward the minor.
Honors Program

The Department of Political Science, in cooperation with the University Honors College, offers courses that are open exclusively to honors students. These courses are listed in the University's Schedule of Courses each semester. Students who meet the standards of the University Honors Program may enroll in these courses.

Psychology
Michael Perone, Chair
http://www.wvu.edu/~psychology/

Degrees Offered
Bachelor of Arts
Bachelor of Science

Admission Requirements
Requirements for admission to the degree programs in psychology include completion of PSYC 101, PSYC 201, and STAT 211, with a minimum grade of C in each, a minimum cumulative GPA of 2.0, a minimum cumulative GPA of 2.0 in all attempted psychology courses; and completion of 58 credit hours.

Degree Requirements
Required Courses PSYC 101, 201, 202, 301, 302; STAT 211; either PSYC 241 or 251; one course from PSYC 423, 424, 425, 426; and other selected courses; three additional courses, with no more than one at the 200 level, from PSYC 231, 232, 241, 251, 281, 293, 331, 342, 343, 345, 351, 362, 363, 364, 379, 382, 423, 424, 425, 426, 474, 493. Completion of the psychology capstone course (PSYC 401) and a three-credit capstone experience are required within the 12 months prior to graduation.

An overall 2.0 average in all psychology courses attempted is required for graduation. In addition, a minimum grade of C is required in the following courses: PSYC 101, 201, 202, 241 or 251, 301, and 302, and STAT 211.

Students seeking the B.S. degree in psychology must also complete the college B.S. degree requirements plus one additional elective course from PSYC 423, 424, 425, or 426.

Recommended courses for students primarily interested in graduate work in psychology are: PSYC 331, 491, 495; additional courses from 423, 424, 425, 426, and 498.

For students primarily interested in a career in mental health or applied psychology requiring a B.A., the following courses are recommended: PSYC 241, 251, 362, 474, 491, and appropriate courses from among 231, 281, 363, 364, 379, and 382. For students majoring in psychology as a liberal arts field, including students who plan to attend graduate or professional school in a field other than psychology and students planning to work in a field not directly related to psychology but who wish a broad exposure to the field of psychology, the following courses are recommended: PSYC 241, 251, 331, and at least one course from among PSYC 281, 363, 364, 379, 382, and 474.

All psychology majors are encouraged to take upper-division courses that provide them an opportunity to apply basic principles of psychology. For this purpose, PSYC 490, 491, and 495 are recommended. Students must have instructor consent before enrolling in these courses.

Common electives for psychology majors include biology, child development and family relations, computer science, mathematics, philosophy, political science, social work, sociology and anthropology, and statistics courses.

Minor in Psychology

Students enrolled in any non-psychology degree program within the University may elect to complete a minor in psychology. The minor is designed to provide a broad overview of the field of psychology. The minor consists of 18–19 credit hours of coursework. Required core courses (12–13 hours) include PSYC 101, 202 (Note: STAT 211 is a prerequisite for PSYC 202), one of PSYC 241, 251, 281; and one of either PSYC 301 or 302. Two electives
(6–7 hours) must be taken from the following: PSYC 301 or 302 (in addition to previous requirement), 331, 342, 343, 345, 351, 363, 365, 382, 474, or selected 493. Students are encouraged to design their minor using courses from the above list to complement courses in their major. A minimum grade of C or better is required for each core course. A GPA of 2.0 across courses counted toward the minor is also required.

**Applied Psychology Emphasis**

Psychology majors interested in a career working in applied mental health or organizational settings following completion of their bachelor’s degree may select the elective courses listed below. Students who complete these courses with a minimum grade of B in each may request a departmental certificate of completion and cover letter detailing the applicability of these courses to work in applied settings, which the student may then provide to potential employers. Students wishing to complete this emphasis should plan their curriculum carefully, and need to be aware that they will not be given special priority for gaining admission to the listed courses. The four elective psychology courses must include: PSYC 362 and 474; and two courses from PSYC 231, 363, 379, and 382. Students must also take at least 12 credits of PSYC 491.

**Honors Program**

The Department of Psychology honors program is designed to provide special enrichment, attention, and recognition for exceptional psychology majors. Admission to the program requires completion of nine hours of psychology, a psychology GPA of 3.5, and an overall GPA of 3.4. Graduation with departmental honors in psychology requires the same GPAs and completion of an honors thesis (three to six hours of PSYC 498). Information about the program is available in the department’s student records office or from the director of undergraduate training.

**Regents Bachelor of Arts**

Carol Hando, Coordinator

More information about this program is available at http://rba.as.wvu.edu/

**Nature of Program**

Especially designed for the adult, the regents bachelor of arts degree offers the possibility of earning college-equivalent credit based on the assessment of life and/or work experiences. An initial assessment fee is charged, with an additional posting fee for credits posted to the transcript.

**Degree Requirements**

Total credits are 128, including 40 upper-division credits, and 36 credits in general education (at least six hours each in communication skills, humanities, social sciences, and natural or physical sciences, and three hours in mathematical science). This program has no major. Students may earn areas of emphasis.

**Admission**

Admission is open only to students who graduated from high school four or more years ago. For those passing a high school equivalency test, admission must be four years after their class graduated from high school. Students who possess a baccalaureate degree are ineligible, nor can the RBA degree be awarded as second bachelor’s degree.

**Fees**

Tuition and fees are the same as for those in other undergraduate programs. For those seeking college equivalent credit there is an initial $300 assessment fee and an additional $10 per credit hour fee for credits posted to the transcript.

Additional information is available from the Coordinator, Regents B.A. Program, 221 Armstrong Hall, P.O. Box 6289, West Virginia University, Morgantown, WV 26506-6289. Phone: (304) 293-5441. E-mail: regents_ba@mail.wvu.edu.
Religious Studies
Aaron Gale, Coordinator
http://religiousstudies.wvu.edu/

Degree Offered
Bachelor of Arts

Nature of Program
The Program for Religious Studies in the Eberly College of Arts and Sciences meets the needs of West Virginia University students by offering instruction in the history and practice of many world religions including Judaism, Christianity, Islam, Buddhism, and Near Eastern traditions. In addition, the program offers opportunities to explore many other interesting areas of study including Hebrew and Christian scriptures, ethics, and current topics of interest. The Program for Religious Studies also seeks to address issues of interest within the WVU community by providing activities such as guest lectures and panel forums for students and the public.

In the Program for Religious Studies, students have the unique opportunity to study religious issues from a scholarly perspective. Hence, religion courses at West Virginia University are intended to stimulate interest in the academic discipline of religious studies, which involves studying world faiths objectively, without an agenda. Yet our courses often complement students’ own religious beliefs. Instructors utilize various methodologies which allow students to immerse themselves in, and learn about, many different traditions. Some of these methodologies include studying ancient texts, examining the history and traditions of various world cultures, the use of resource texts from reputable scholars, and the analysis of archaeological data.

The degree in religious studies offers a general liberal arts education for students entering such professions as law, medicine, and business, if electives are chosen carefully. This major is useful to anyone seeking a professional career in religion, such as the ministry, teaching, graduate study of theology, biblical studies, and religious journalism.

Admission Requirements
Admission to the degree program in religious studies requires a cumulative grade point average (GPA) of at least 2.0. Students must earn an overall GPA of 2.0 as well as a 2.0 in all religious studies courses counted toward the major in order to graduate with a religious studies major.

Degree Requirements
If admitted to the Program for Religious Studies, the student will be required to complete satisfactorily 30 hours of coursework, including:

One 100-level course (RELG 102 or 105)
Three 200-level courses (RELG 210, 219, 222, 223, 230, 231, 232, 255, or 293)
Six 300-400 level courses (PHIL 308, RELG 350 and 494 are required; choose remaining courses from RELG 303, 304, 305, 306, 310, 493, or SOCA 336.

Minor in Religious Studies
Any student admitted to an undergraduate degree program at WVU may undertake a minor in religious studies. The minor consists of 15 hours of coursework in religious studies, with at least nine hours at the upper-level (300-level or above). A grade of at least C must be earned in all courses counted toward the minor.

It is the responsibility of students minoring in religious studies to maintain close contact with the office of the Program for Religious Studies concerning the scheduling of the above courses.
Slavic and East European Studies  
Robert Blobaum, Coordinator  
Lisa DiBartolomeo, Associate Coordinator  
http://www.sees.wvu.edu/  

Degree Offered  
Bachelor of Arts  

Nature of Program  
The Slavic and East European Studies (SEES) interdisciplinary major offers an integrated approach to the study of the languages, cultures, history, geography, politics, economies, religions and societies of Eastern Europe. This region includes: Russia, Ukraine, Belarus, Latvia, Lithuania, Estonia, Poland, Czech Republic, Slovakia, Bulgaria, Macedonia, Serbia, Montenegro, Bosnia, Croatia, Albania, Romania, and Moldova. The demand of government and the private sector for individuals specializing in this resurgent area of Europe has renewed in recent years, even as economic, political, and cultural changes have served to make Eastern Europe more accessible. The program incorporates diverse disciplines, language study, and study abroad to provide students with a deep as well as broad grasp of the region’s past, present, and future.  

Career Goals  
In today’s increasingly global setting, business, diplomacy, and scholarship all benefit from a thorough knowledge of at least one foreign language and a familiarity with the culture, history, and economics of the region speaking that language. A major in SEES prepares students for further study in graduate or professional schools, as well as contributing background that may be applied to work in government, foreign service, non-governmental organizations (NGOs), and international business or law.  

Admission, Residency, and Other Requirements  
There are no special requirements for direct admission into the SEES major, but once admitted students must achieve a minimum grade point average of 2.25, both overall and in the major. They must also satisfy University General Education Curriculum (GEC) and Eberly College of Arts and Sciences requirements and earn a total of 128 hours credit in order to graduate. Although study abroad is strongly encouraged, a student completing a major in SEES must fulfill a residency requirement of 15 hours in the major on campus, excluding courses numbered 100, 101, 102, 200, 203, 204, and courses obtained through credit by examination.  

Degree Requirements  
Students majoring in SEES are required to complete a minimum of 36 hours of coursework, of which the following are required: 1) SEES 101 (three hours); 2) Language (six hours, either 300-level Russian, or another SEES-approved language; 3) ECON 453 or 454 (three hours); 4) History (of which three hours must be HIST 417 or 418): HIST 217, 218, 220, 417, 418, 419, 420 (six hours): 5) POLS 351, 366 or approved upper division special topics course (three hours); FLIT/FCLT (of which three hours must be either FCLT 281, 380, 381, or 382): FLIT 256, 257, FCLT 250, 280, 281, 380, 381, 382 or other culture course (six hours); and a SEES capstone: SEES 491, 492, 497 (three hours).  

The remaining courses (six hours total credit) may be chosen from the following list: additional language courses other than Russian, ECON 453, ECON 454, HIST 220, HIST 417, HIST 418, POLS 351, POLS 366, or additional FLIT/FCLT courses from the list above. Credit may also be obtained through study abroad, credit by exam, or by successful completion of approved special topics courses.
Other Coursework/Second Majors/Minors

Students are strongly encouraged to work closely with advisors and faculty in the SEES program to select related courses, second majors, and/or minors (such as international studies, Russian studies, foreign languages, history, political science or economics) that will complement their work in SEES and lead to meaningful career options.

Minor in Slavic and East European Studies

The minor in Slavic and East European studies is an interdisciplinary program recognizing students’ successful completion of coursework focusing on the languages, culture, history, politics, economies, and religions of Eastern Europe with award of an academic minor degree. Students must take 18 hours: (1) SEES 101 (three hours); 2) six hours of one SEES-related language; 3) nine hours of upper division coursework selected from the following: ECON 453, ECON 454, FCLT 380, 381, 382, HIST 417, HIST 418, either HIST 419 or HIST 420, POLS 351 or POLS 366, and approved special topics or study abroad courses. A maximum of three hours of upper-division RUSS courses, in addition to the language hours under (2), may be counted toward the minor. Only courses in which the student earns a grade of C or higher may be applied to the SEES minor.

Social Studies

Degree Offered

Bachelor of Arts

Major: Interdepartmental Studies

Nature of Program

The bachelor of arts in interdepartmental studies with an emphasis in social studies is designed specifically for students who intend to be certified to teach social studies in grades 5–12 and to complete a master’s degree in education in the College of Human Resources and Education following fulfillment of degree requirements for the bachelor of arts in the Eberly College of Arts and Sciences. The bachelor of arts and master of arts in education degrees will be granted simultaneously upon completion of both degree programs.

Admission Requirements

Admission to the degree program may be requested upon completion of EDUC 100, EDUC 200, and 59 hours with cumulative grade point average of at least 2.75. Applicants also must pass the PPST (or qualify for a waiver) and submit a prescribed portfolio.

Degree Requirements

The social studies major consists of courses drawn from several disciplinary areas so to prepare teachers for the broad array of required social studies courses they will teach. In addition to completing WVU and college requirements, the degree program requires:

- Economics (9 hours)—ECON 201, 202, and either 451 or 454
- Geography (12 hours)—GEOG 102 or 108, 107, 209, and 240
- History (24 hours)—HIST 152, 153, 250, 179, 180, and three (3 cr.) HIST electives, 400 level is suggested.
- Political Science (9 hours)—POLS 101 or 220, 102 or 210, and 260
- Psychology (6 hours)—PSYC 101 and 241
- Sociology and Anthropology (6 hours)—SOCO 101 or 107, and ANTH 105
- Education (21 hours)—EDUC 100, 200, 301, 311, 312, 400, 401, 410, 411
- Special Education (6 hours)—SPED 304 and 360
- Curriculum and Instruction (3 hours)—C&I 454
- Geology (4 hours)—GEOL 101/102

Academic Advising

All social studies pre-majors and majors are advised in the College of Human Resources and Education.

Eberly College of Arts and Sciences
School of Applied Social Sciences
Division of Social Work
Karen Harper-Dorton, Chair
Linda Ferrise, Program Director
Sam Leizear, Field Instruction Coordinator
Brenda Morgan-Patrick, Admissions Coordinator and Advising Specialist
http://socialwork.wvu.edu/

Degree Offered
Bachelor of Social Work

Nature of Program
The Division of Social Work provides a comprehensive program of professional education in social work, including degree programs at the baccalaureate and master’s levels, and a range of part-time and continuing education opportunities.

Our programs are fully accredited by the Council on Social Work Education, which makes graduates eligible to seek licensure as social workers in West Virginia and other states, depending on individual state laws. The degree programs offered by the Division of Social Work allow students the opportunity to prepare for entry-level professional practice at the baccalaureate level and to specialize at the advanced (graduate) level of study. The baccalaureate program prepares social workers for generalist practice and is a recognized national leader in the development of baccalaureate-level curriculum to support this educational goal.

Social work, one of the oldest human-service professions, is based upon the social and behavioral sciences used to understand and to help individuals, groups, families, and communities. Social work is a profession concerned with helping people accomplish life goals and realize their full potential. Four major purposes of social work are:

• To enhance the problem-solving, coping, and developmental capacities of people.
• To promote the effective and humane operation of the systems that provide people with resources and services.
• To link people with systems that provide them with resources, services, and opportunities.
• To develop and improve social policy.

In carrying out these purposes, social workers seek to solve problems associated with financial need, social and cultural deprivation, racial injustice, gender inequalities, physical and mental health, disadvantaged children, troubled youth, disturbed family relationships, and aging. Therefore, social workers are needed in a variety of service agencies, both private and public: schools, hospitals, correctional institutions, residential treatment settings, adoption agencies, industry, community service organizations, prisons, the courts, veteran’s bureaus, nursing homes, children’s services, and public welfare agencies. Because the social work arena is so broad, students will find it easy to discover a career path in social work that meets their interests and career goals.

Job opportunities for B.S.W. graduates are expected to continue increasing in the coming years. Given the positive national reputation of our B.S.W. program, our graduates often find themselves actively sought by employers.

Undergraduate Program Objectives
The objectives of the B.S.W. program are derived from the philosophy and goals of the Division of Social Work and the mission of the University, the objectives of the social work profession, and the needs of people in our society.

B.S.W. Program Goals And Objectives
1. Prepare undergraduate students for competent entry-level generalist practice, with an emphasis on rural and small-town settings, through a curriculum including liberal arts, social work foundations, and professional social work knowledge and skills.
a. Apply critical thinking skills within the context of professional social work practice.
b. Understand and interpret the history of the social work profession and its con-
temporary structures and issues.
c. Apply the knowledge and skills of generalist social work practice with human
and social systems of all sizes.
d. Use theoretical frameworks supported by empirical evidence to understand
individual development and behavior across the life span and the interactions
among individuals and between individuals and families, groups, organizations,
and communities.
e. Analyze, formulate, and influence social policies.
f. Evaluate research studies, apply research findings to practice, and evaluate
their own practice interventions.
g. Use communication skills differentially across client populations, colleagues,
and communities.
h. Use supervision and consultation appropriate to social work practice.
i. Function within the structure of organizations and service delivery systems and
seek necessary organizational change.
j. Acquire a working knowledge of service delivery to rural and small-town
populations.

2. Prepare students to engage in effective, responsible, and creative practice within the
value base and ethical standards of the social work profession;
a. Understand the value base of the profession and its ethical standards and prin-
ciples, and practice accordingly.
b. Internalize the profession's value base and gain skill in its application to resolv-
ing ethical dilemmas.
c. Gain recognition of how one's own personal values can impact service delivery
and reconcile value conflicts that will prevent effective service provision.

3. Prepare students for practice with diverse and at-risk populations and to further
social and economic justice;
a. Practice without discrimination and with respect, knowledge, and skills related
to clients' age, class, color, culture, disability, ethnicity, family structure, gender,
marital status, national origin, race, religion, sex, and sexual orientation.
b. Understand the forms and mechanisms of oppression and discrimination and
apply strategies of advocacy and social change that advance social and eco-
nomic justice.

4. Enrich the liberal arts curriculum of West Virginia University by providing opportuni-
ties for the undergraduate student body in general to increase their sensitivity, know-
ledge, and understanding of human needs, social problems, social welfare issues,
and approaches and alternatives toward resolving social problems;
a. Provide undergraduate courses available to non-social work majors that contri-
bute to student understanding of human diversity, social problems, social
welfare programs, and alternatives for the resolution of problems.
b. Provide extra-curricular programming available to the general student body
that contributes to understanding of human diversity, social problems, social
welfare programs, and alternatives for the resolution of problems.

5. Provide a foundation for continuing professional development.
a. Recognize the need for and commit to participate in activities that foster on-
ging, post-graduation professional growth and development.
b. Provide a sound educational foundation for the student who may be appropri-
ately interested in future graduate-level education within the Division of Social
Work, in other graduate social work programs, or in other allied graduate programs
of study.
c. Encourage participation in continuing social work education to lay the foundation
for a career-long learning and professional growth.
The 2 + 2 Program

WVU and several colleges have entered into a joint commitment to increase the college-going rate within the state of WV and throughout the country, as well as the number of social workers within the state, through a special 2+2 arrangement that will lead to a bachelor of social work degree from WVU. Current affiliation agreements for the 2 + 2 program include Pierpont Community and Technical College, WV Northern Community College, and Bermuda College. For students from these colleges to enjoy the benefits of the 2+2 program they must be ready to enter the major when they matriculate to WVU. Although historically students from these other colleges have always had the opportunity to gain entrance to the B.S.W. program at WVU, the benefits of a more formalized linkage with these colleges are numerous. For example, brochures on the 2+2 program, The WVU-B.S.W. Connection, are available on students' home campuses, and designated faculty on those campuses work closely with WVU's B.S.W. program director to ensure a strong linkage between those campuses and WVU, which ensures students will have a smoother transition to WVU. Furthermore, expectations for entry and completion of the degree are now more clear to students, so the B.S.W. degree can be completed in a more timely manner. Students in the 2+2 program must meet the admissions standards for WVU and the B.S.W. program and must follow the B.S.W. program’s policies for transfer students.

Admissions

Students interested in pursuing a degree in social work are identified as pre-majors until they are admitted into the program through a formal admission process, at which time they become social work majors. Our pre-majors enjoy the benefits of advisement by an academic counselor in the Division of Social Work who provides information about careers in social work and assists in planning students’ academic program and registering students for their coursework every semester. Incoming freshmen become pre-majors in social work by indicating their interests in pursuing a degree in social work when they submit their initial application to WVU’s Office of Admissions and Records.

In order for social work pre-majors at WVU, its branch campuses, or in the 2+2 program to enter the social work major, they must meet the B.S.W. program’s admission criteria, complete a formal application for admission, and have their application approved by the Division of Social Work B.S.W. Admission Committee. The admissions process is competitive and students are selectively admitted to the program for their final two years of education, which includes the upper-division courses in social work.

Social work requires the ability to establish positive, supportive, and nonjudgmental interpersonal relationships. The ultimate test of a student’s interpersonal skills is in relationship to clients. However, observed positive relationships with faculty and students serve as indicators of potential for future professional development and suitability for practice in the field. Social work is a profession whose members are expected to adhere to the National Association of Social Workers Code of Ethics and to conduct themselves in a professional manner. Therefore, the criteria for admission to the major, as well as for continuation in the program, include academic standards of a scholastic and cognitive nature, as well as of an affective and professional nature. To be eligible for admission to the major, students must meet the following minimum criteria:

- Have a 2.25 GPA on a four-point scale. (Note: the GPA will be calculated to include any substantial amount of coursework transferred to WVU from other institutions.)
- Complete 100 hours of appropriate human service activity (paid or volunteer) by the time of application for admission and receive a supportive or generally positive reference from the supervisor(s), as documented on the B.S.W. program’s form.
- Complete 58 credit hours by the conclusion of the semester during which application to the program is made.
- Earn a C or better in SOWK 147 and 151 by the time of application for admission. (Students applying to the program through the 2+2 arrangement or as transfers from another institution can replace the SOWK 147 course with another minority course approved by the B.S.W. program director. When they matriculate to WVU, they must take SOWK 147, along with their first semester of upper-division social work courses.)
• Successfully complete the General Education Curriculum Objectives by the conclusion of the semester during which application to the program is made.
• Demonstrate college-level writing skills.
• Show motivation to pursue a career in the field of social work.
• Show potential for commitment to the National Association of Social Workers (NASW) Code of Ethics.
• Possess a basic level of communication and interpersonal skills, which provide a sufficient foundation for building professional interactional skills.
• Show potential for professional development, such as responsiveness to feedback and willingness to address areas that might interfere with effectiveness as a future helper.
• In general, be sensitive to and respect human diversity, with a basic capacity for nonjudgmental behavior toward individuals whose values, beliefs, and lifestyles may be different from the student’s own.
• Be reliable in carrying responsibilities as demonstrated in classes and volunteer experience (punctual, dependable, observes assignment deadlines, meets attendance expectations, etc.)
• Show a basic level of self-awareness in assessing strengths and weaknesses as these might impact carrying out professional responsibilities.

Students who present an overall GPA of 3.0 or above and meet the other admission criteria are guaranteed admission to the program. A certain number of slots are set aside for students from each 2+2 program campus who meet the minimum 2.25 GPA. Other students who meet the minimum GPA and all other admission criteria are admitted on a space-available basis. Applications for admission are reviewed once a year. Beginning every January, applications are reviewed for entry to the major the following fall semester.

As part of the division and the B.S.W program’s academic standards, students may be denied admission to the major or continuance in the program for conduct that violates the code of ethics of the National Association of Social Workers. Students shall be provided appropriate safeguards for appealing such decisions and shall be provided with an opportunity to demonstrate that the conduct in question has been modified to the point of being in compliance with the ethics code. Should the student not be able to make the necessary modifications in conduct, he or she shall be counseled out of the program in accordance with established University policy as set forth in WVU’s student handbook, The Mountie. Procedures for terminating a student from the program follow the school’s academic performance review policy.

Transfer Students
If you are a transfer student, including 2+2 students, and you wish to enter the social work pre-major or major, you must contact WVU’s Office of Admissions and Records, and the B.S.W. program director, no later than the semester before you intend to matriculate to WVU. For entry to the B.S.W. program, you must meet all requirements that apply to pre-major status. If your plan is to matriculate to WVU in the fall semester as a social work major, you should contact WVU’s Office of Admissions and Records the prior December and complete your application to the B.S.W. program for admission to the major in January.

Upper-division social work courses taken at other institutions do not automatically transfer to WVU and meet our program’s requirements. To gain approval for these courses you must have earned a B or better in the course(s) and you must submit course syllabi and other appropriate course materials to the B.S.W. program director. Courses that are not approved count as electives. The lower-division social work courses taught on 2+2 campuses have received approval via the formal agreement with the program.

Requirements for the Degree
The undergraduate social work program consists of a foundation in the liberal arts, a minimum of 38 upper-division hours and six lower-division hours in social work, a minimum of nine upper-division hours in required social and behavioral sciences courses, and an additional requirement of nine upper-division social science hours with at least three hours in each of the fields of sociology, psychology, and political science. All social work students
are required to take three additional hours of coursework dealing with racial or other minority groups selected from a list of courses designated by the undergraduate social work program. A total of 128 hours is required for the degree. Of these, 58 credit hours must be in upper-division coursework. You are encouraged to consult with your advisor regarding the selection of electives appropriate for your career interest.

To establish a social work major and to qualify for graduation, you must have been enrolled for at least two semesters and have accumulated a minimum of 30 hours as an upper-division student in the social work program, or under its guidelines. Also, you must fulfill the following: complete all required social work courses—in their proper sequence—with grades of C or higher, maintain an overall GPA of 2.0 or above, and maintain a GPA of 2.0 or better in all upper-division social science courses specifically required of the social work major.

Students who are unable to meet the performance standards for social work courses are permitted to repeat a course one time. If the student is unsuccessful in the second attempt, he or she must leave the program. If a student is unsuccessful in either SOWK 494 or 491, both courses must be repeated and successfully completed to meet graduation requirements. The specific curriculum requirements for graduation are as follows.

In addition to University requirements, social work students are required to take the following courses: PSYC 101, POLS 101 or 102, and 220, and SOCA 101, 221, and 107. In science, you must take BIOL 101 and 103. You must also take an additional nine hours of social and behavioral science requirements with three hours each in psychology, sociology, or political science. You must also take an additional course with minority content.

**Required Social Work courses include:**
- Lower division: SOWK 151
- Upper division: SOWK 300, 310, 319, 320, 322, 324, 330, 350, 360, 491 (12 credits), 493 (6 credits of special topics electives), 494 (writing course).

**Typical Study Load**
Students with grade point averages under 3.0 are only rarely permitted to carry more than 18 credit hours. If your grade point average is 3.0 or above and you want to carry 19 to 21 hours, you must petition the chair of the Division of Social Work through your advisor. Students are not permitted to carry more than 21 credit hours in a semester.

**Field Instruction Requirements**
Field instruction, which occurs during your senior year, after all other coursework has been completed, is a key component of your total educational experience in the undergraduate social work program. During the field practicum (SOWK 491) you will have the opportunity to demonstrate through actual social work service-providing activities your ability to utilize and apply the knowledge, values, and skills you have acquired while at WVU or as a result of other life experiences.

To enter the field practicum, you must meet the following criteria:
- Senior rank (at least 89 hours completed).
- A 2.0 overall grade point average.
- Completion of all social work courses with grades of C or better.

Field placement activities are usually carried out for one semester as a modified block system, but part-time students may be interested in a two-semester placement called a concurrent system. The block system requires students to spend four full work days in placement over the course of one complete semester (63 days). The concurrent system requires students to spend two full work days in placement over the course of two semesters. A minimum of 441 clock hours of field placement work must be completed during the field practicum. While in field placement, students participate in SOWK 494 Social Work Senior Seminar, which provides educational support for the practicum.

After consultation with your advisor, and with the approval of the B.S.W. program director and field instruction coordinator, you will be assigned to an approved field placement setting. Field placement assignments are in social welfare organizations and agencies in Monongalia or surrounding counties. These organizations have met the criteria for participation in our field instruction program.
To successfully complete requirements for graduation, students must demonstrate, through educationally focused field experience activities, those competencies (i.e., combination of social work knowledge, values, and skills) which have been identified as suitable and necessary for entry into professional social work practice.

Note: Academic credit is not given for life experience. Previous work experience cannot be used in lieu of field experience or other course requirements.

**Advising**

All social work pre-majors and majors are advised in the Division of Social Work.

**Non-Majors in Social Work Courses**

If you are a candidate for a regents bachelor of arts (R.B.A.) degree with an interest in a career in social work, you will be permitted to take any of the undergraduate social work courses except the practicum on a space available basis or with instructor’s consent. R.B.A. candidates must meet the same requirements for sequencing and performance standards in social work courses as social work majors. Other non-majors are also permitted to take selected social work courses on a space-available basis, which do not include our methods, skills lab, and practice courses.

**School of Applied Social Sciences**

**Division of Sociology and Anthropology**

Melissa Latimer, Chair

http://www.as.wvu.edu/soca/

**Degree Offered**

*Bachelor of Arts*

*Majors: Sociology and Anthropology, Criminology and Investigations*

**Sociology and Anthropology**

**Nature of Program**

Sociology and anthropology courses constitute an important part of a liberal education. They foster an awareness of the structure of human societies and of the social processes which operate in all groups, organizations, and institutions. The student is exposed to the methods of inquiry and to the special knowledge and insights of sociology and anthropology. Courses in the division also are intended to facilitate the application of sociological and anthropological principles to the wide range of contemporary social problems. Sociology and anthropology constitute an important part of the undergraduate education for those pursuing careers in law, health professions, or business, and for engineers and scientists concerned with environmental and ecological problems. Majors in sociology and anthropology often find employment doing applied research with government agencies, assisting in community development and planning, or using knowledge of social organization and social process in a variety of settings within the United States or abroad. Majors are well-equipped for graduate training in the social sciences in pursuit of academic or applied research careers.

**Admission Requirements**

Admission to the major requires:

- Completion of SOCA 199, 101, 105, and one 200-level sociology or anthropology course with a grade of C or higher in each course.
- Completion of STAT 211 (recommended) or STAT 111 with a grade of C or higher.
- A minimum GPA of 2.0 across all SOCA courses attempted prior to admission.
- Sophomore or higher standing (completion of 29 credit hours) with a minimum cumulative GPA of 2.0
Degree Requirements

General Requirements All students in the division are required to take the following courses in addition to the required courses in their chosen area of emphasis: SOCA 101, 105, 199, 311, 389, 401, and 488, and STAT 211 (or STAT 111).

Emphasis Requirements Each major must complete the requirements of an anthropology or sociology emphasis, depending on his or her academic or career interest. The areas of emphasis and the individual requirements of each are as follows.

Anthropology. In addition to general degree requirements, students must take 15 hours of anthropology courses, selected from SOCA 252, 254, 255, 256, 258, 353, 358, or 359, with at least nine hours at the 300-level or higher (three credit hours of field work may be substituted for three credit hours); three elective hours in sociology or criminology (200 or above); and three elective hours in either sociology, criminology, or anthropology (200 or above).

Sociology. In addition to general degree requirements, students must take 15 hours selected from SOCA 207, 221, 223, 235, 238, 304, 318, 320, 322, 323, 325, 331, 333, 336, 337, 360, 405, 407, 440, 463, 470, or 490, with at least nine hours at the 300 level or higher; three elective hours in anthropology (200 or above); and three elective hours in sociology, criminology, or anthropology (200 or above).

Special topic courses (SOCA 293 or 493) may also be counted toward emphasis requirements. Consult the current student section of the division’s website to determine which SOCA 293 or SOCA 493 courses are anthropological, criminological, or sociological.

Students are encouraged to do independent study, fieldwork, or an internship in the senior year, combining experiential work with previously acquired skills in a project appropriate to their emphasis. Up to three credit hours of independent study (SOCA 495) or field experience (SOCA 491) may be counted toward fulfilling departmental elective requirements.

Graduation Requirements. In order to graduate majors must maintain an overall GPA of 2.0 and at least a 2.0 in SOCA courses counted toward the major.

Minor in Sociology and Anthropology
Students may acquire a minor in the Division of Sociology and Anthropology by fulfilling the requirements of one of the minors listed below.

Anthropology: 18 credit hours, including SOCA 105 (3 hours) and 15 additional hours, nine of which must be 300-level or higher, in anthropology courses. Anthropology courses are SOCA courses numbered in the 50s (i.e., SOCA 250–259, 350–359, 450–459). Special topic courses (numbered SOCA 293 or 493) are also eligible. If the 293 or 493 course does not contain “anthropology” or “archaeology” in the title, consult the approved course list on the current students section of the division website to verify its status as an anthropology course. An overall GPA of at least 2.0 in courses counted toward the minor is required.

Sociology: 18 credit hours, including SOCA 101 (3 hours) and 15 additional hours, nine of which must be 300-level or higher, in sociology and selected criminology courses. The following courses may be used to fulfill requirements: SOCA 207, 221, 223, 235, 238, 304, 318, 320, 322, 323, 331, 333, 336, 337, 360, 405, 407, 440, and 463. In addition, two of the following three courses may be counted toward minor requirements: SOCA 230, 232, and 233. Special topic courses (numbered SOCA 293 or 493) are also eligible. If a 293 or 493 course does not contain “sociology” in the title, consult the approved course list on the current students section of the division website to verify its status as a sociology course. An overall GPA of at least 2.0 in courses counted toward the minor is required.
Nature of Program

The criminology and investigations major is grounded in the discipline of sociology and supports the Forensic Science Initiative at WVU. The major has two primary foci. The criminology focus provides an understanding of society as a normative order with ever-changing definitions of conformity and deviance. Through an examination of the social foundations of law, the operation of the criminal justice system, and such urgent problems as juvenile delinquency, corporate crime, hate crime, terrorism, and organized crime, students develop a new understanding of the public order and public policy. The investigation focus explores the processes and procedures employed by those individuals and groups in the criminal justice system who seek to establish “truth” in the furtherance of justice. Students will examine both the formal and informal processes that affect the investigation, including the collection and presentation of evidence.

Students will also examine primary social relations that shape the fate of criminal and civil cases. In particular, students will consider how forensic experts and attorneys negotiate the often conflicting demands of disinterested science and legal advocacy in the course of jointly investigating, evaluating, and preparing legal cases. The subject of legal investigations is of particular sociological interest because it involves exchanges between scientific and legal professionals with distinctive languages, methods, standards, and goals. In the course of working together on the same side of legal disputes, experts and attorneys must balance their conflicting agendas, raising ethical questions as the core of their professional identities and directly shaping the nature and outcome of the case they are putting together. The sociology of legal investigations traces the work-site social dynamics and contingencies of legal inquiry as a negotiated process spanning the work of police, scientists, and attorneys.

The criminology and investigation major gives students a thorough understanding of crime and investigation. Areas of study include poverty, discrimination, crime and violence, unemployment, and terrorism. Students will be prepared for graduate programs and a variety of careers in sociology, criminal justice, forensic investigation, public administration, government, and law.

Admission Requirements

Students must apply for admission to the major as space is restricted. Students may apply once they have met the following requirements:

- Completion of SOCA 199, SOCA 101, SOCA 105, and one criminology foundation course (SOCA 230 or 232 or 233) with a grade of C or higher in each course.
- Completion of STAT 211 or STAT 215 with a grade of C or higher.
- A minimum GPA of 2.0 across all SOCA courses attempted prior to application.
- Sophomore or higher standing with a minimum cumulative GPA of 2.0.

Students must obtain and submit an application by February 15 for Fall admission and September 15 for Spring admission. Students with an overall GPA of 3.0 in SOCA courses who meet other application criteria are guaranteed admission to the program. Other students meeting minimum application requirements are accepted on a space-available basis according to overall GPA in SOCA courses.

Degree Requirements

General Requirements

All students in the Division of Sociology and Anthropology are required to take the following courses in addition to the required courses in their chosen major: SOCA 101, 105, 199, 311, 389, 401, and 488, and STAT 211 (or STAT 215).

Criminology and investigations majors complete a set of core courses designed to provide critical thinking and writing skills, and emphasize interests in crime and investigation.

Foundation Courses (six hours) selected from: SOCA 230, 232, 233.

Intermediate Courses (nine hours) selected from: SOCA 302, 318, 319, 321, 324, 331, 334, 339, 345, 346.

Advanced Courses (six hours) selected from: SOCA 402, 407, 435, 444, 461, 470, 494.

Special topics courses (numbered SOCA 293 or 493) may also be counted toward major requirements. Consult the approved criminology course list on the current student section of the division's website.

Students are encouraged to do independent study, fieldwork, or an internship in their senior year. Up to three credit hours of independent study (SOCA 495) or field experience (SOCA 491) may be counted toward fulfilling departmental elective requirements.

**Graduation Requirements** In order to graduate majors must maintain an overall GPA of 2.0 and at least a 2.0 in SOCA courses counted towards the major.

**Statistics**
E. James Harner, Chair
http://www.stat.wvu.edu/Programs/minor.html

**Nature of Program**
Students interested in a major related to statistics should consider the interdepartmental bachelor of sciences in industrial mathematics and statistics. A minor is available to university students. An applied statistics and a mathematical statistics track is available.

**Minor in Statistics**
Students may choose from two minor tracks. A grade of C or higher in each course counted toward the minor is required. MATH 156 is a prerequisite for STAT 215. MATH 251 is a prerequisite for STAT 461.
- Mathematical Statistics Track: STAT 215 and 461, and nine hours from STAT 217, 312, 313, 316, 331, 421, 445, 462.
- Applied Statistics Track: STAT 211 or 215, and 12 hours from STAT 217, 312, 313, 316, 331, 421, 445, 461, 462.
Completion of either track will be posted as a minor in statistics.

**Women’s Studies**
Janice S. Spleth, Interim Director, Professor of French
http://wmst.wvu.edu/

The Center for Women’s Studies has a University-wide mission to coordinate interdisciplinary teaching and research on women and gender. The center offers a bachelor of arts degree in women’s studies, as well as a minor, and an area of emphasis for Regents B.A. students. The center also sponsors lectures, films, colloquia, an annual residency, faculty and student development programs, and a scholarships and awards program. The center’s visiting committee is developing a mentoring program for women’s studies students.

**Nature of Program**
Women’s studies scholarship on women and gender has revolutionized most academic disciplines over the last several years. Women have been studied for a long time, but only recently have women significantly influenced the questions that have been asked, the methods that have been used, or the uses to which that knowledge has been put. Women’s studies courses examine the contributions, perspectives, experiences, roles, and status of women within a multicultural and historical framework. Challenging the stereotypes of women and men, our students explore the relationships among gender, race, ethnicity, sexual identity, socioeconomic class, and age. Women’s studies is an interdisciplinary field which embraces the arts, humanities, social sciences, life sciences, and physical sciences.
Career Opportunities

Business, public administration, health care, communications, law, teaching, social work, counseling, creative arts, government, and journalism are all fields in which a major or minor in women’s studies may be a valuable professional credential. A women’s studies background is helpful to both women and men entering professions that have traditionally been restricted to one sex. Women’s studies is especially useful for employment in areas such as rape crisis centers, feminist publishing houses, campus women’s centers, affirmative action offices, sex equity projects, advocacy and lobbying programs, domestic violence shelters, and displaced-homemaker programs, and as preparation for law school.

Academic Opportunities in Women’s Studies

Women’s studies courses in a variety of areas throughout the University are available to interested students. Many of these courses fulfill General Education Curriculum distribution requirements. In addition to the women’s studies courses listed in this catalog, many women’s studies courses are offered through other departments. Updated lists of women’s studies courses are available from the Center for Women’s Studies each semester. Undergraduate students may earn a bachelor of arts in women’s studies or a minor in women’s studies.

Admission Requirements

If University admission requirements are met, a student may be accepted to WVU as a women’s studies major. Students already enrolled at WVU will need an overall GPA of 2.0 to enter the major. They will be required to earn a minimum GPA of 2.5 in the nine required hours of the major (see below) and an overall 2.0 in all their major courses.

Degree Requirements

The women’s studies major requires 30 credit hours, including a minimum of 18 hours of upper-division classes. Most students will start their major with the required WMST 170 course. An honors section of this course is offered every year. Intermediate courses are designed to broaden students’ perspectives on women’s studies and to prepare them for the advanced required courses as well as for advanced upper-division electives. A maximum of nine credits of intermediate courses will be counted toward the minimum 30 credits required for the major. The required advanced core (six hours) includes two courses designed to prepare students for specialized study in the major: WMST 330 Feminist Theory and WMST 484 Seminar: Capstone. Women’s studies majors may take no more than six hours of independent study (WMST 495) or field experience (WMST 491) credit, and these credits must be approved by the student’s women’s studies advisor before registration. Because the program draws on courses throughout the University, students should check with an advisor at the Center for Women’s Studies in 218 Eiesland Hall or check the program’s website at http://wmst.wvu.edu for the most current list of courses.

Coursework

Thirty hours in women’s studies courses (not all with WMST prefix), including the following:

- Minimum of 12 hours of upper-division courses (300/400 level)
- WMST 170
- Maximum of nine hours of intermediate courses
- Required six hours of advanced core courses: WMST 330 and WMST 494
- No more than six hours of WMST 491 or 495
- Formal minor or second major
- Electives
- University and college requirements
- Total hours required for graduation 128
Minor in Women’s Studies

Any student admitted to an undergraduate degree program at WVU may earn a minor in women’s studies. Students are advised to design an individualized minor and may choose to focus on an area of concentration such as feminist thought or women’s health and sexuality. A grade point average of 2.75 in 18 hours of coursework is required for the minor. Students must take WMST 170, 484, and 12 additional hours in women’s studies courses or approved departmental primary courses with at least nine hours in upper-division courses. The 12 additional hours may include no more than six hours with any one prefix (WMST courses excepted), no more than one course in the student’s major, and no more than three hours of independent study or field experience. Students are required to register with the Center for Women’s Studies to enroll in the minor. Application forms and more information about the women’s studies curriculum may be obtained from the Director, WVU Center for Women’s Studies, 218 Eiesland Hall, P.O. Box 6450, Morgantown, WV 26506-6450. Telephone (304) 293-2339, x 1155.
Perley Isaac Reed School of Journalism
Maryanne Reed, M.S.J., Dean
http://journalism.wvu.edu

Degree Offered
Bachelor of Science in Journalism
Specialized Programs (Majors): Advertising, Broadcast News, News-Editorial, Public Relations, (students entering the school during or after Fall 2009 may pursue the Journalism major)

The WVU Perley Isaac Reed School of Journalism is a student-centered journalism school that has been graduating mass communications specialists since 1939. While rooted in tradition, the school also offers an innovative, student-centered curriculum and real-world experiences that prepare students for careers in 21st century mass communications. Our students learn by doing, using state-of-the-art equipment and cutting-edge media technology. Our award-winning faculty work one-on-one with students to help launch their careers and dreams.

Accreditation
The Accrediting Council on Education in Journalism and Mass Communications (ACEJMC) fully accredits the School of Journalism and its undergraduate programs: advertising, broadcast news, news-editorial, and public relations. More than 100 colleges and universities have earned ACEJMC approval. The school is also a member of the Association of Schools of Journalism and Mass Communications.

Equal Employment Opportunity and Affirmative Action Plan
West Virginia University is an equal opportunity/affirmative action institution. The University does not discriminate on the basis of race, sex, age, handicap, veteran status, religion, sexual orientation, color, or national origin in the administration of any of its educational programs or activities or with respect to admission and employment. The University neither affilates with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, sex, age, handicap, veteran status, religion, sexual orientation, color, or national origin, as defined by the applicable laws and regulations. Faculty, staff, students, and applicants are protected from retaliation for filing complaints or for assisting in an investigation under the University’s Equal Opportunity/Affirmative Action Plan. Inquiries regarding the University’s non-discrimination policy may be directed to the Office of Social Justice, West Virginia University.

The School of Journalism (SOJ) endorses WVU’s affirmative action plan and has historically applied the plan’s principles in all school initiatives and activities. Assurance of equal opportunity and affirmative action procedures are included in both the University and School of Journalism guidelines for faculty recruitment.

To recruit minority students, faculty and professionals visit state high schools and community colleges, periodically send representatives to recruitment events in urban areas with large minority populations, respond quickly to minorities seeking information about the school, initiate contacts with high school counselors, and give special attention to minority internship/placement opportunities.

The school appreciates ethnic, racial, and cultural diversity among students, faculty, and staff; professors often incorporate historical and contemporary issues within their teaching and learning experiences. The school has a full-time enrollment coordinator who has minority recruitment and retention as a major responsibility.

All students take the Journalism Qualifying Examination, and the school provides free tutoring and study packets through the SOJ Advising Center. Students seeking more information should contact Jan Boyles, the School’s Advising Director, at jan.boyles@mail.wvu.edu. The school gives consideration to both minorities and West Virginians in its admissions procedures.
Professional Relations

A close relationship is maintained with the mass media through the West Virginia Press Association, the West Virginia Broadcasters Association, the West Virginia Associated Press Broadcasters Association, Public Relations Society of America, American Advertising Association of America, American Advertising Federation, Business and Professional Advertising Association, National Press Photographers Association, and the Society of Professional Journalists. These groups have provided educational and financial support to the school, along with internships and job opportunities.

Every year, the school brings in professionals to give students advice on how to land their first job, write resumes, produce professional portfolios, and conduct themselves on job interviews. They also interview students for internships and permanent jobs.

Each spring, the school celebrates excellence in journalism and mass communications by hosting Journalism Week. During Journalism Week, awarding-winning journalists and communicators inspire students by sharing their experiences and their strategies for success. In spring 2008, Journalism Week featured “New Media, New Democracy,” a panel of national reporters, bloggers, and new media producers discussing the impact of digital media on the 2008 presidential election. In addition, the school sponsors lecture series at other times of the year. For example, in fall 2008, the school hosted a lecture by Pulitzer Prize-winning syndicated columnist Leonard Pitts and an interactive, satellite-broadcast forum with the National Press Club in Washington, D.C.

Experiential Learning

Students gain real-world experience in their capstone courses, as well as with special projects.

In the Newspaper Bureau Reporting class, students write for newspapers across the region and state. Students write spot news, feature stories, and sports for newspapers across the region. They are coached, edited, and mentored by experienced professionals. In the Advanced TV Reporting and Producing class, students produce newscasts that air statewide on West Virginia Public Television. In advertising and public relations, students produce campaigns for real clients that include healthcare and hospitals, non-profit organizations, and small businesses.

Faculty and students work together on high-profile journalism projects that impact the community and give students valuable hands-on experience. In fall 2001, students began work on a two-year project chronicling the stories of people facing and fighting cancer. The Cancer Project resulted in an Emmy Award-winning documentary that aired on public television and a book published by West Virginia Press.

In 2003, the School of Journalism spearheaded a statewide effort to preserve the oral histories of West Virginia veterans for the national Veterans History Project, sponsored by the Library of Congress. Students working with the West Virginia’s Veterans History Project have recorded the histories of more than 100 veterans and conducted workshops throughout the state, teaching civic organizations how to gather additional histories. The students’ work has led to the Library of Congress calling WVU one of its “strongest partners.”

In September 2005, journalism students began documenting stories of Hurricane Katrina evacuees who were temporarily relocated to Camp Dawson in Preston County, West Virginia. The following December, students followed some of the evacuees to New Orleans as they returned to their homes for the first time after the storm. Their reporting resulted in the interactive, multimedia Website Starting Over: Loss and Renewal in Katrina’s Aftermath. The site features multimedia stories of evacuees in West Virginia and New Orleans, personal narratives of survival and hope, and an interactive discussion forum (http://katrinaproject.journalism.wvu.edu/). Starting Over was recently named as a top-three finalist in the Society of Professional Journalists’ Mark of Excellence national competition and won a Best of Festival Award from the Broadcast Education Association’s annual Festival of Media Arts competition.

From 2006–2009, journalism students and faculty, in partnership with the fine arts program at WVU’s Center for Excellence in Disabilities, have conducted a Web-based project about artists with disabilities. The students profiled individual artists in multimedia slide shows and interviews, from a painter with cerebral palsy to a nature photographer who lost the use of his limbs in an auto accident. As part of this convergence reporting project, university journalism students learned how to use visual storytelling, multi-media
and interactivity to counter cultural stereotypes. Students learned that visual, nonlinear and interactive storytelling techniques are uniquely equipped to address complex social issues.

West Virginia Uncovered, the J-school’s latest project, was founded in Fall 2008 and takes students to all over the state to create multimedia news features and train reporters at small rural newspapers on how to create multimedia content for the web. The packages run on the Websites of the small newspapers and the Charleston Daily Mail, the second-largest daily newspaper in West Virginia. The training sessions are designed to help small newspapers take advantage of the Internet without taxing their time and budgets. The project, which will expand to the University of Kentucky in 2009, is funded in part by an $85,000 grant from the McCormick Foundation in Chicago.

Journalism Organizations

Several organizations affiliated with the School of Journalism provide honor and recognition as well, as fellowship and education. They are:

- American Advertising Federation, a professional advertising fraternity.
- Kappa Tau Alpha, a national scholastic honorary for students with exceptional academic records in journalism.
- Public Relations Student Society of America, a national public relations professional organization.
- Diversity in Media Association (DIMA), an organization affiliated with a national professional association, whose purpose is to enhance media career opportunities for all types of minority students.
- The Society of Professional Journalists, a professional society for news-editorial and broadcast news majors.
- Ed2010, a community of young magazine editors and aspiring editors who want to learn more about the industry.

Nature of Program

School of Journalism graduates earn a bachelor of science in journalism degree (B.S.J.) and are trained in critical thinking skills, schooled in the liberal arts, and tutored in teamwork and strategic planning. The school strives to produce graduates who can serve the state, the nation, and the world with outstanding work, accomplished in an ethical manner, attuned to the demands and dynamics of 21st century mass communications.

Community outreach and service learning are incorporated into our print and online journalism, broadcast news, public relations, advertising, and integrated marketing communications programs. Teaching in all the program areas embraces a coaching/mentoring philosophy that results in real products—stories, broadcasts, campaigns, and projects—that are published and adopted by real clients. Our students learn by doing in an intimate, hands-on environment. Community partnerships and internships help prepare our students for professional careers.

The School of Journalism typically offers more than $75,000 in scholarships to its students each year. (Pre-journalism majors are not eligible for these awards.)

Alumni research shows that 98 percent of students who graduate from the WVU Perley Isaac Reed School of Journalism find jobs in their fields or attend graduate school within a year. While they are still in school, our students get a foot in the door at top regional and national newspapers, TV stations, public relations firms, and advertising agencies—thanks to our strong internship program. Students can earn money and course credit for their internship work. Students also have the opportunity to work for U-92 (the campus radio station) and for the Daily Athenaeum (the daily student newspaper). Journalism students also work part-time at local newspapers, television affiliates, private firms, and non-profit organizations.

Journalism students learn by using state-of-the-art equipment and media technology, such as Photoshop, Final Cut Pro, Quark, and InDesign in the school’s five computer labs. Students also have access to digital video and still cameras and a professional television
studio. In the fall of 2005, the school opened the doors to its Jim and Marsha Blair Multimedia Studio, which houses a multimedia editing suite and photography studio. The school’s main lecture hall, room 205, underwent extensive upgrades in late 2004. Throughout 2007 and 2008, the school took on another series of renovations to update classrooms, seminar rooms, offices and public spaces in response to the school’s growing enrollment.

Admission to the School of Journalism

Students interested in majoring in journalism must first apply to West Virginia University and be accepted. To be eligible for direct admission into the School of Journalism, students must have at least a 2.5 unweighted high school GPA and either a 22 ACT English score or a 520 SAT verbal score. Other students may declare a pre-journalism major. All students must take the Journalism Qualifying Exam (JQE). Direct admits will gain full admission into the School of Journalism upon earning a competitive score on the JQE and completing an application for major status. Pre-journalism majors will apply for admission into the school while enrolled in Journalism 215.

To gain enrollment in Journalism 215, all students must earn a grade of C or better in Journalism 101, English 101 and 102, and ULIB 101. Students must also earn a competitive score on the JQE. Students are allowed to take the JQE up to three times.

Priorities for Admission to Journalism 215 and Major Program Specific Courses

Students who meet the basic criteria for JRL 215 admission will be ranked by an index score derived from a combination of every individual’s cumulative GPA (minimum 2.0) and JQE score. Only 1030 (pre-journalism) and 4930 (direct admission journalism) majors may apply to be enrolled in JRL 215.

Priority for admission to JRL 215 will go to competitive students who possess all the class prerequisites and who complete a JRL 215 form located in 108 Martin Hall. Students will be notified by e-mail when they are placed in the class.

Courses for Non-Majors

JRL 101, JRL 220, ADV 215, TVJ 215, and PR 215 are open to all WVU students on a first-come, first-served basis. Anyone may enroll in a maximum of six of these hours beyond JRL 101 before being admitted to the SOJ. Those who attempt to enroll in other journalism-related courses but who lack the appropriate prerequisites will be removed from such classes. Students minoring in the school may take specified courses online during summer school.

The school offers several courses as a part of the University’s General Education Curriculum, including JRL 101 Introduction to Mass Communication; JRL 261 Documentary Film in America; ADV 201 Advertising and Society; and TVJ 215 Electronic Media and Society.

Scholarships

The School of Journalism offers scholarships each year to eligible students. Students with a 3.0 or better cumulative GPA may apply to the school’s Scholarship Committee during the spring selection period. All students applying for scholarships must file a FAFSA form by March 1, even if they are not eligible for need-based aid. Awards are generally based on academic performance, financial need, and sometimes residency.

Choosing an SOJ Major

Direct admission students are admitted to the school upon admission to the University and declare their majors once they have achieved a competitive score on the Journalism Qualifying Exam. They still must meet all the regular pre-requisites for JRL 215 prior to enrolling in the course. Pre-journalism majors will apply for major status while they are enrolled in JRL 215.
Graduation Requirements

Journalism majors earn a bachelor of science in journalism (B.S.J.) degree that requires a minimum of 128 credit hours. Of the 128 credit hours to graduate, School of Journalism students must take a minimum of 80 credit hours outside of the School of Journalism. At least 65 of the total credit hours taken outside of the School of Journalism must be liberal arts courses. Minimum credit hours to be taken within the School of Journalism are determined by specific programs.

Included in those 128 hours are a 30–38 credit-hour major; a 15-hour-or-more minor; 34 hours of non-journalism requirements; a 42-hour General Education Curriculum; and general electives to bring the total number of credit hours to at least 128. The School of Journalism specifies many General Education Curriculum and non-major requirement courses. Some courses are available only once a year; it is the student’s responsibility to arrange his/her schedule accordingly. Please note that while some classes can count in more than one category, students still need to complete at least 128 credit hours. Students will take most of their major courses during their junior and senior years. Undergraduate students who entered the school prior to Fall 2009 major in one of the four program areas: advertising, broadcast news, news editorial, and public relations. Undergraduate students entering the school in or after Fall 2009 who would formerly have pursued the news editorial or broadcast news programs will now enter the journalism program and will choose one of three areas of emphasis: print journalism, television journalism, or visual journalism. This change will not apply to PR or ADV students or to students who entered the school before Fall 2009.

The School of Journalism will accept no more than 12 journalism/journalism-related courses from colleges and universities outside West Virginia's university system. Students may not double major, but they can pursue a dual-degree program. To earn a second baccalaureate degree, students must complete at least 158 credit hours (30 hours beyond the first bachelor's degree); students with one bachelor's degree may seek a bachelor's degree in journalism. In either case, students must have their academic plan approved by the dean’s office.

Scholastic Requirements

To be eligible for graduation, students must earn a minimum 2.0 cumulative grade point average; minor requirements are set by the offering colleges. Students also must earn a grade of C or better in all journalism, advertising, broadcast news, news-editorial, print journalism, public relations, television journalism and visual journalism prerequisite courses to advance in any discipline. Students who do not will be administratively deleted from courses without notification. Students must earn a grade of C or better in all major courses that are counted towards their graduation requirements.

To be sure about progressing appropriately, students must see their advisor each semester for scheduling classes. In addition, during the semester prior to applying for graduation, students must attend a graduation planning session.

Academic Minors and Second Concentration Fields

Students must complete either an officially sanctioned minor or an area of concentration outside at the School of Journalism. An area of concentration consists of 15 hours of coursework in a single discipline with at least nine of the hours at the 300-level or higher. Students may not take an area of concentration in a field where there is an existing minor. Students must consult with their advisor before starting an area of concentration.

Full-Time Load/Probation

Students may not enroll for more than 19 hours in a single term or 13 hours in two summer sessions without permission from the associate dean or dean. A student can take 20 or more hours only with the advisor’s and associate dean’s approval.

If on probation, a student shall not take more than 12 hours of coursework in an academic term.
Withdrawal from Class or University
All students enrolled in journalism courses may withdraw from a course with a W grade until the University’s withdrawal date (see the University calendar). After that, students may withdraw only with the approval of the School of Journalism’s Committee on Academic Standards and will receive a W or WU grade.

Students who need to take a leave of absence for a semester or more need to complete an application with the Office of Student Life.

Internship/Practicum Credit
Students may choose any of the following options when taking an internship or practicum:

- Resume experience—no college credit or monetary compensation
- Experience—paid, but not for credit
- Experience—college credit plus monetary compensation
- Experience—college credit but no monetary compensation

Typically students choose to do an internship/practicum for credit because the employer requires it or the student needs the elective journalism credit(s). Students who elect to do an internship/practicum for credit must see Jan Boyles, advising director, to be signed into JRL 441 (3 credits, typically done in the summer) or JRL 442 (1–2 credits) and complete a contract. Students cannot receive credit retroactively, per school policy. One hundred hours of work equals one credit hour.

No more than ten percent of a student’s 30–38 journalism credits (typically 1–3) can be earned via combined practica or an internship, in accordance with ACEJMC standards.

Job Placement
The School of Journalism’s student services coordinator assists future graduates in finding desirable positions by acting as a placement clearinghouse for current students and alumni; the faculty also advise and assist students in the preparation of resumés and portfolios. Representatives of newspapers, magazines, public relations, broadcasting, and advertising firms frequently request that School of Journalism faculty provide applicants for job openings and internships.

Major Programs’ Objectives
Advertising Program
Sang Lee, Ph.D., Chair

Advertising Program
The advertising curriculum is designed to prepare students for careers in the creation, sales, management, and production of advertising.

The minor or second concentration field(s) is subject to approval by your advisor; business administration is a common minor choice. Students in this major prepare for careers in advertising agencies, corporate advertising departments, direct marketing, retail advertising, promotion, and the media.

Major requirements for the advertising program include: JRL 101, JRL 215, JRL 421, JRL 489, NE/JRL 428, ADV 215, ADV 315, ADV 401, ADV 403 or 451, ADV 421 and ADV 459.

Required non-major classes include: BUSA 340 or ACCT 201, two semesters of the same foreign language, ULIB 101, POLS 102, POLS 220, PSYC 101, HIST 153, ECON 201, ECON 202, ENGL Lit (from approved list), BUSA 320 or BUSA 330.

Within the University’s General Education Curriculum, the school requires that students complete the following: ENGL 101; ENGL 102 or ENGL 103; eight hours in same science, including at least one semester of lab science; the University math requirement—MATH 121/126 or equivalent; STAT 111 (or equivalent); HIST 152; JRL 115 or UNIV 101 (or equivalent); PHIL 100 or 130; JRL 101 (see major requirements); and one course each from the school’s approved list of objectives 4, 5, 7, and 9.
Broadcast News Program
Gina Martino Dahlia, M.S.J., Chair
(The following information applies only to students who entered the school of journalism prior to Fall 2009.)

Students seeking careers in the electronic news media areas should pursue this curriculum.

Students produce news stories and programs in a state-of-the-art television studio and in digital editing suites. However, the foundation of the curriculum is on basic news writing, editorial judgment and the principles and practices of radio and television news production.

The curriculum integrates the mechanics of broadcast journalism with the ethical principles and norms exhibited by professionals. Such preparation helps students to develop their own communication skills and to appreciate radio, television, cable, and movies as communicative and journalistic arts. Additionally, these studies challenge the student’s ability to evaluate and to criticize broadcast media functions, performance, responsibilities, and their influence in society.

Students also have the opportunity to showcase their work on a newscast, “WVU News,” airing on WVPBS and online at itunes.wvu.edu.

Outside media professionals periodically serve as adjunct instructors and assist in some broadcast-news courses.

Major requirements for the broadcast news program include: JRL 101, JRL 210, JRL 215, JRL 489, NE/JRL 426, NE/JRL 428, BN/TVJ 215, BN/TVJ 319, BN/TVJ 386, and BN/TVJ 487. In addition broadcast news students must complete at least one of the following: BN/TVJ 486, JRL 431, or any 400-level JRL, BN/TVJ, PRNJ or VISJ class.

Required non-major classes include: BUSA 340 or ACCT 201, two semesters of the same foreign language, ULIB 101, POLS 102, POLS 220, PSYC 101, HIST 153, ECON 201, ECON 202, ENGL Lit (from approved list), and a public speaking course (COMM 103, SPA 270 or THET 102).

Within the University’s General Education Curriculum, the school requires that students complete the following: ENGL 101; ENGL 102 or ENGL 103; eight hours in same science, including at least one semester of lab science; the University math requirement—MATH 121/124/126 or equivalent; STAT 111 (or equivalent); HIST 152; JRL 115 or UNIV 101 (or equivalent); PHIL 100 or 130; JRL 101 (see major requirements); and one course each from the school’s approved list of objectives 4, 5, 7, and 9.

News-Editorial Program
John Temple, M.F.A., Chair
(The following information applies only to students who entered the school of journalism prior to Fall 2009.)

The news-editorial program teaches fact-gathering, news and feature writing, beat reporting, editing, design, immersion reporting, journalism history and law, ethics, online research and writing, public affairs reporting, investigative reporting, editorial and critical writing, as well as visual journalism. Students in the news-editorial major complete a core curriculum along with taking an area of emphasis in either news or visual journalism.

Most news-editorial graduates have found employment with newspapers, magazines, online publications, and international press associations. Some graduates, however, have entered broadcasting or public relations; still others occupy writing and editing positions in scientific fields, business, industry, and government.

As a condition of graduation, news-editorial majors are required to have 500 or more column inches of bylined writing published in campus or off-campus news media. At least 100 of these inches must be published following the junior year. News-editorial students frequently earn a minor in political science, history, general English, creative writing English, sociology, or business administration.

Core requirements for the news-editorial major include: JRL 101, JRL 210, JRL 215, JRL 318, JRL 489, NE/JRL 428, and NE/JRL 459. Students taking the news area of emphasis are required to take NE/PRNJ 426; they must also complete at least two of the following
courses: NE/PRNJ 418, NE/PRNJ 420, NE/PRNJ 427, NE/PRNJ 430, JRL/VISJ 220, JRL/VISJ 320, JRL/VISJ 431, JRL/VISJ 440. Other upper-division NE/PRNJ, JRL, VISJ or BN/TVJ courses may be included with approval of the news-editorial sequence head. Students taking the visual journalism area of emphasis are required to take JRL/VISJ 220 and JRL/VISJ 431; they must also complete at least one of the following courses: JRL/VISJ 320 and JRL/VISJ 440.

Required non-major classes include: BUSA 340 or ACCT 201, two semesters of the same foreign language, ULIB 101, POLS 102, POLS 220, PSYC 101, HIST 153, ECON 201, ECON 202, ENGL Lit (from approved list), and one additional GEC class from Objectives 4, 5, 7, or 9.

Within the University’s General Education Curriculum, the school requires that students complete the following: ENGL 101; ENGL 102 or ENGL 103; eight hours in same science, including at least one semester of lab science; the University math requirement—MATH 121/126 or equivalent; STAT 111 (or equivalent); HIST 152; JRL 115 or UNIV 101 (or equivalent); PHIL 100 or 130; JRL 101 (see major requirements); and one course each from the school’s approved list of objectives 4, 5, 7, and 9.

Public Relations Program
R. Ivan Pinnell, Ph.D., Chair

Public relations offers challenging opportunities to align the interests of industrial, non-profit, educational, medical, military, or charitable organizations with those of their publics.

The curriculum is organized to provide a comprehensive familiarity with specialized forms (brochures, reports, slides, speeches, and the like). In addition to public relations, students learn principles of persuasion and media technology.

Public relations majors are encouraged to select minors that will provide a deeper understanding of personal and interpersonal relationships (political science, sociology, anthropology, or business administration) or a second concentration field that will enhance the student’s projected area of practice (psychology, general business, environment, health, or a science-related subject).

Major requirements for the public relations program include: JRL 101, JRL 215, JRL 318, JRL 489, NE/JRL 428, PR 215, an editing/design course (PR 319, PR 333, JRL 319, or ADV 319) PR 324, PR 422, and PR 459.

Required non-major classes include: BUSA 340 or ACCT 201, two semesters of the same foreign language, ULIB 101, POLS 102, POLS 220, PSYC 101, HIST 153, ECON 201, ECON 202, ENGL Lit (from approved list), and a public speaking course (COMM 103, SPA 270, or THET 102).

Within the University’s General Education Curriculum, the school requires that students complete the following: ENGL 101; ENGL 102 or ENGL 103; eight hours in same science, including at least one semester of lab science; the University math requirement—MATH 121/126 or equivalent; STAT 111 (or equivalent); HIST 152; JRL 115, or UNIV 101 (or equivalent); PHIL 100 or 130; JRL 101 (see major requirements); and one course each from the school’s approved list of objectives 4, 5, 7, and 9.

Journalism Program

Print Journalism area of emphasis: John Temple, M.F.A., Chair
Television Journalism area of emphasis: Gina Martino Dahlia, M.S.J., Chair
Visual Journalism area of emphasis: Joel Beeson, M.F.A., Chair
(This major program is available to students who entered the journalism school on or after Fall 2009.)

Journalism is for students interested in entering the fields of television, Internet, newspaper or magazine journalism. Core requirements for the journalism major include: JRL 101, JRL 210, JRL 215, JRL 318, JRL 489, JRL 428, and JRL 459. In addition, students entering this major program will choose one of three areas of emphasis: print journalism (PRNJ), television journalism (TVJ), or visual journalism (VISJ).
Print Journalism (PRNJ) students learn fact-gathering, news and feature writing, beat reporting, editing, design, immersion reporting, journalism history and law, ethics, online research and writing, public affairs reporting, investigative reporting and editorial and critical writing. As a condition of graduation, PRNJ students are required to have 500 or more column inches of bylined writing published in campus or off-campus news media. At least 100 of these inches must be published following the junior year. PRNJ students are required to take JRL 426; they must also complete at least two of the following courses: PRNJ 418, PRNJ 420, PRNJ 427, PRNJ 430, VISJ 220, VISJ 320, VISJ 431, VISJ 440. Other upper-division PRNJ, JRL, VISJ or TVJ courses may be included with approval of the PRNJ sequence head.

Television Journalism (TVJ) students produce news stories and programs in a state-of-the-art television studio and in digital editing suites. However, the foundation of the curriculum is on basic news writing, editorial judgment, and the principles and practices of radio and television news production. Students also have the opportunity to showcase their work on a newscast, “WVU News,” airing on WVPBS and online at itunes.wvu.edu. Required courses for TVJ students include: TVJ 319, TVJ 386, JRL 426 and TVJ 487. In addition TVJ students must complete at least one of the following: TVJ 486, JRL 431, or any 400-level JRL, TVJ, PRNJ, or VISJ class. TVJ students must also complete a public speaking course (COMM 103, SPA 270 or THET 102).

Visual Journalism (VISJ) students learn photography, videography, design and how to combine various forms of media into compelling new-media journalism projects. Because of this expertise, they take a leading role in school projects such as West Virginia Uncovered and the Artists with Disabilities project. They are required to take VISJ 220 and VISJ 431; they must also complete at least one of the following courses: VISJ 320 and VISJ 440.

For all students in the journalism major program, required non-major classes include: BUSA 340 or ACCT 201, two semesters of the same foreign language, ULIB 101, POLS 102, POLS 220, PSYC 101, HIST 153, ECON 201, ECON 202, ENGL Lit and (from approved list).

Within the University’s General Education Curriculum, the school requires that students complete the following: ENGL 101; ENGL 102 or ENGL 103; eight hours in same science, including at least one semester of lab science; the University math requirement—MATH 121/124/126 or equivalent; STAT 111 (or equivalent); HIST 152; JRL 115 or UNIV 101 (or equivalent); PHIL 100 or 130; JRL 101 (see major requirements); and one course each from the school’s approved list of objectives 4, 5, 7, and 9.

**Minors and Special Programs**

**Advertising Minor**

Students in colleges and units outside of the P.I. Reed School of Journalism may earn a minor in advertising online during summer sessions by completing the following courses and meeting the requirements as stated below.

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Prerequisites and Schedule</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>JRL 101 Introduction to Mass COMM</td>
<td>May be taken any term, in classroom, or online.</td>
<td>3</td>
</tr>
<tr>
<td>ADV 215 Principles of Advertising</td>
<td>May be taken any term, in classroom, or online.</td>
<td>3</td>
</tr>
<tr>
<td>ADV 309 Advertising and Creativity</td>
<td>Prequisites: ADV 215</td>
<td>3</td>
</tr>
<tr>
<td>Must be taken online during summer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADV 409 Advertising Research and Media</td>
<td>Prequisites: ADV 215</td>
<td>3</td>
</tr>
<tr>
<td>Must be taken online during summer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADV 419 Advertising Strategy</td>
<td>Prequisites: ADV 215, 309, 409</td>
<td>3</td>
</tr>
<tr>
<td>Must be taken online during summer.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Perley Isaac Reed School of Journalism
To earn a minor in advertising a student must earn a grade of C or better in each of the five courses.

The advertising minor is not available to any student enrolled in the P.I. Reed School of Journalism.

Successful completion of the minor in advertising will be recorded on the student’s official transcript.

Public Relations Minor

Students in colleges and units outside of the P.I. Reed School of Journalism may earn a minor in public relations online during summer sessions by completing the following courses and meeting the requirements as stated below.

Course Requirements | Prerequisites and Schedule | Hrs.
---|---|---
JRL 101 Introduction to Mass 
COMM | May be taken any term, in classroom, or online. | 3
PR 215 Intro. to Public Relations | May be taken any term, in classroom, or online. | 3
PR 301 Writing for Public Relations | Prerequisites: JRL 101, PR 215 | 3
PR 401 Applied Public Relations | Prerequisites: PR 301 Must be taken online during summer. | 3
PR 410 IMC for Public Relations | Prerequisites: PR 301 Must be taken online during summer. | 3

*To earn a minor in public relations a student must earn a grade of C or better in each of the five courses.

**The PR minor is not available to any student enrolled in the P.I. Reed School of Journalism.

*** Students who double-minor in advertising and public relations may choose an additional course from the school’s online and 200-level open enrollment courses in place of JRL 101 (which they will have already taken for the advertising minor.)

Journalism Education Program

The School of Journalism has worked for a number of years with West Virginia journalism teachers and administrators to improve their instruction and school publications. An even greater effort has been made over the past decade through regional high school workshops, critiques of school papers, the West Virginia University High School Journalism Competition, and individual consultation with newspaper and yearbook advisors by School of Journalism faculty.

One of the outgrowths of these cooperative efforts is a certification program in journalism. The School of Journalism provides courses for the five-year master’s program in the WVU College of Human Resources and Education, which requires a primary teaching field besides journalism.

Curriculum Requirements

Suggested Four-Year Advertising Schedule

First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take JQE</td>
<td>N/A</td>
<td>Obj. 1 ENGL 102</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 1 ENGL 101</td>
<td>3</td>
<td>Obj. 2 Same Science</td>
<td>4</td>
</tr>
<tr>
<td>Obj. 6 PHIL 100 or 130</td>
<td>3</td>
<td>Obj. 3 HIST 152</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 2 Lab Science</td>
<td>4</td>
<td>POLS 102</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 5 course from approved list</td>
<td>3</td>
<td>ULIB 101</td>
<td>1</td>
</tr>
<tr>
<td>Obj. 6 JRL 115/UNIV 101 (or equivalent)</td>
<td>1</td>
<td>Total</td>
<td>17</td>
</tr>
<tr>
<td>Obj. 8 JRL 101</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Second Year

| Semester          | Hrs. | | Semester          | Hrs. |
|-------------------|------||-------------------|------|
| Third Semester    |      | | Fourth Semester   |      |
| Obj. 2 MATH 121 (or other MATH) | 3 | | Obj. 2 STAT 111 (or equivalent) | 3 |
| Foreign Language  | 3    | | PSYC 101          | 3    |
| Obj. 4 course from approved list | 3 | | Same Foreign Language | 3 |
| HIST 153          | 3    | | ADV 215           | 3    |
| ENGL Lit. from approved list | 3 | | POLS 220          | 3    |
| JRL 215           | 3    | | Obj. 9 course from approved list | 3 |
| **Total**         | **18** | | **Total**         | **18** |

### Third Year

| Semester          | Hrs. | | Semester          | Hrs. |
|-------------------|------||-------------------|------|
| Fifth Semester    |      | | Sixth Semester    |      |
| ECON 201          | 3    | | ADV 401/451       | 3    |
| ADV 315           | 3    | | JRL 421           | 3    |
| ADV 403           | 3    | | ECON 202          | 3    |
| NE/JRL 428        | 3    | | Minor             | 3    |
| Minor/2nd Concentration | 3 | | BUSA 320/330      | 3    |
| ACCT 201/BUSA 340 | 3    | | **Total**         | **15** |
| **Total**         | **18** | | **Total**         | **18** |

### Fourth Year

| Semester          | Hrs. | | Semester          | Hrs. |
|-------------------|------||-------------------|------|
| Seventh Semester  |      | | Eighth Semester   |      |
| Obj. 7 course from approved list | 3 | | ADV 459           | 3    |
| Minor             | 3    | | SOJ Electives     | 3    |
| Minor             | 3    | | Minor             | 6    |
| JRL 489           | 3    | | General Elective  | 3    |
| General Elective  | 1    | | **Total**         | **15** |
| **Total**         | **13** | | **Total**         | **15** |

**Note:** The School of Journalism specifies many General Education Curriculum and non-major requirement courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.

### Suggested Four-Year Broadcast News Schedule

(For students who entered the school prior to Fall 2009.)

| Semester          | Hrs. | | Semester          | Hrs. |
|-------------------|------||-------------------|------|
| First Semester    |      | | Second Semester   |      |
| JOE               | N/A  | | Obj. 1 ENGL 102   | 3    |
| Obj. 1 ENGL 101   | 3    | | Obj. 2 Same Science | 4 |
| Obj. 6 PHIL 100 or 130| 3 | | Obj. 3 HIST 152   | 3    |
| Obj. 2 Lab Science| 4    | | POLS 102          | 3    |
| Obj. 5 course from approved list | 3 | | ULIB 101          | 1    |
| Obj. 6 JRL 115/UNIV 101 | (or equivalent) | 1 | **Total**         | **14** |
| Obj. 8 JRL 101    | 3    | | **Total**         | **17** |
| **Total**         | **17** | | **Total**         | **17** |

### Second Year

| Semester          | Hrs. | | Semester          | Hrs. |
|-------------------|------||-------------------|------|
| Third Semester    |      | | Fourth Semester   |      |
| Obj. 2 MATH 121 (or other MATH) | 3 | | Obj. 2 STAT 111 (or equivalent) | 3 |
| Foreign Language  | 3    | | PSYC 101          | 3    |
| Obj. 4 course from approved list | 3 | | Same Foreign Language | 3 |
| HIST 153          | 3    | | ADV 215           | 3    |
| ENGL Literature from approved list | 3 | | POLS 220          | 3    |
| JRL 215           | 3    | | Obj. 9 course from approved list | 3 |
| **Total**         | **18** | | **Total**         | **18** |
### Third Year

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Hrs.</th>
<th>Sixth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 201</td>
<td>3</td>
<td>ECON 202</td>
<td>3</td>
</tr>
<tr>
<td>POLS 220</td>
<td>3</td>
<td>BN/TVJ 386</td>
<td>3</td>
</tr>
<tr>
<td>BN/TVJ 319</td>
<td>3</td>
<td>JRL 489</td>
<td>3</td>
</tr>
<tr>
<td>NE/JRL 428</td>
<td>3</td>
<td>Approved 400-level course</td>
<td>3</td>
</tr>
<tr>
<td>Minor/2nd Concentration</td>
<td>3</td>
<td>Minor</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 201/BUSA 340</td>
<td>3</td>
<td>COMM 103, SPA 270 or THET 102</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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</table>

### Fourth Year

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Hrs.</th>
<th>Eighth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obj. 7 course from approved list</td>
<td>3</td>
<td>BN/TVJ 487</td>
<td>3</td>
</tr>
<tr>
<td>JRL/NE 426</td>
<td>3</td>
<td>SOJ Electives</td>
<td>3</td>
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<tr>
<td>Minor</td>
<td>3</td>
<td>Minor</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
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</tbody>
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Note: The School of Journalism specifies many General Education Curriculum and non-major requirement courses. Some courses are available only once a year; it is the student’s responsibility to arrange his/her schedule accordingly.

### Suggested Four-Year News-Editorial Schedule
(For students who entered the school prior to Fall 2009.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take JQE</td>
<td>N/A</td>
<td>Obj. 1 ENGL 102</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 1 ENGL 101</td>
<td>3</td>
<td>Obj. 2 Same Science</td>
<td>4</td>
</tr>
<tr>
<td>Obj. 6 PHIL 100 or 130</td>
<td>3</td>
<td>Obj. 3 HIST 152</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 2 Lab Science</td>
<td>4</td>
<td>POLS 102</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 5 course from approved list</td>
<td>3</td>
<td>ULIB 101</td>
<td>1</td>
</tr>
<tr>
<td>Obj. 6 JRL 115/UNIV 101 (or equivalent)</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td>Obj. 8 JRL 101</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
<th>Fourth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obj. 2 MATH 121 (or other MATH)</td>
<td>3</td>
<td>Obj. 2 STAT 111 (or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 4 course from approved list</td>
<td>3</td>
<td>Obj. 7 course from approved list</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
<td>PSYC 101</td>
<td>3</td>
</tr>
<tr>
<td>HIST 153</td>
<td>3</td>
<td>Same Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>ENGL Literature from approved list</td>
<td>3</td>
<td>JRL 210</td>
<td>3</td>
</tr>
<tr>
<td>JRL 215</td>
<td>3</td>
<td>JRL 318</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hrs.</th>
<th>Sixth Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Fifth Semester</td>
<td>Hrs.</td>
<td>ECON 202</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>3</td>
<td>NE/PRNJ Area of Emphasis course</td>
<td>3</td>
</tr>
<tr>
<td>JRL 319</td>
<td>3</td>
<td>JRL 489</td>
<td>3</td>
</tr>
<tr>
<td>NE/PRNJ Area of Emphasis course</td>
<td>3</td>
<td>Minor</td>
<td>3</td>
</tr>
<tr>
<td>POLS 220</td>
<td>3</td>
<td>Any unused course from</td>
<td></td>
</tr>
<tr>
<td>Minor/2nd Concentration</td>
<td>3</td>
<td>Obj. 4, 5, 7 or 9 lists</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 201/BUSA 340</td>
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### Fourth Year

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Hrs.</th>
<th>Eighth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obj. 9 course from approved list</td>
<td>3</td>
<td>NE 459</td>
<td>3</td>
</tr>
<tr>
<td>NE Area of Emphasis course</td>
<td>3</td>
<td>SOJ Electives</td>
<td>3</td>
</tr>
<tr>
<td>NE 428</td>
<td>3</td>
<td>Minor</td>
<td>6</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>General Elective</td>
<td>4</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Note:** The School of Journalism specifies many General Education Curriculum and non-major requirement courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.

### Suggested Four-Year Public Relations Schedule

#### First Year

<table>
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<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>JQE</td>
<td>N/A</td>
<td>Obj. 1 ENGL 102</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 1 ENGL 101</td>
<td>3</td>
<td>Obj. 2 Same Science</td>
<td>4</td>
</tr>
<tr>
<td>Obj. 6 PHIL 100 or 130</td>
<td>3</td>
<td>Obj. 3 HIST 152</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 2 Lab Science</td>
<td>4</td>
<td>POLS 102</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 5 course from approved list</td>
<td>3</td>
<td>ULIB 101</td>
<td>1</td>
</tr>
<tr>
<td>Obj. 6 JRL 115/UNIV 101 (or equivalent)</td>
<td>1</td>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td>Obj. 8 JRL 101</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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</table>

#### Second Year

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hrs.</th>
<th>Fourth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obj. 2 MATH 121 (or other MATH)</td>
<td>3</td>
<td>Obj. 2 STAT 111 (or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 4 course from approved list</td>
<td>3</td>
<td>Obj. 7 course from approved list</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
<td>PSYC 101</td>
<td>3</td>
</tr>
<tr>
<td>HIST 153</td>
<td>3</td>
<td>Same Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>ENGL Literature from approved list</td>
<td>3</td>
<td>JRL 318</td>
<td>3</td>
</tr>
<tr>
<td>JRL 215</td>
<td>3</td>
<td>PR 215</td>
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<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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</tbody>
</table>

#### Third Year

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Hrs.</th>
<th>Sixth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 201</td>
<td>3</td>
<td>ECON 202</td>
<td>3</td>
</tr>
<tr>
<td>POLS 220</td>
<td>3</td>
<td>PR 324</td>
<td>3</td>
</tr>
<tr>
<td>PR 319 or approved equivalent</td>
<td>3</td>
<td>JRL 489</td>
<td>3</td>
</tr>
<tr>
<td>NE/JRL 428</td>
<td>3</td>
<td>Minor</td>
<td>3</td>
</tr>
<tr>
<td>Minor/2nd Concentration</td>
<td>3</td>
<td>COMM 103, SPA 270 or THET 102</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 201/BUSA 340</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

#### Fourth Year

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Hrs.</th>
<th>Eighth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obj. 9 course from approved list</td>
<td>3</td>
<td>PR 459</td>
<td>3</td>
</tr>
<tr>
<td>PR 422</td>
<td>3</td>
<td>SOJ Electives</td>
<td>3</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>Minor</td>
<td>6</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>General Elective</td>
<td>3</td>
</tr>
<tr>
<td>General Elective</td>
<td>1</td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**Note:** The School of Journalism specifies many General Education Curriculum and non-major requirement courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.
Suggested Four-Year Journalism Schedule  
(For students who entered the school during or after Fall 2009.)

**Print Journalism Area of Emphasis**

**First Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take JQE</td>
<td>N/A</td>
<td>Obj. 1 ENGL 102</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 1 ENGL 101</td>
<td>3</td>
<td>Obj. 2 Same Science</td>
<td>4</td>
</tr>
<tr>
<td>Obj. 6 PHIL 100 or 130</td>
<td>3</td>
<td>Obj. 3 HIST 152</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 2 Lab Science</td>
<td>4</td>
<td>POLS 102</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 5 course from approved list</td>
<td>3</td>
<td>ULIB 101</td>
<td>1</td>
</tr>
<tr>
<td>Obj. 6 JRL 115/UNIV 101 (or equivalent)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obj. 8 JRL 101</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</table>

**Second Year**

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hrs.</th>
<th>Fourth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obj. 2 MATH 121 (or other MATH)</td>
<td>3</td>
<td>Obj. 2 STAT 111 (or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 4 course from approved list</td>
<td>3</td>
<td>Obj. 7 course from approved list</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
<td>PSYC 101</td>
<td>3</td>
</tr>
<tr>
<td>HIST 153</td>
<td>3</td>
<td>Same Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>ENGL Literature from approved list</td>
<td>3</td>
<td>JRL 210</td>
<td>3</td>
</tr>
<tr>
<td>JRL 215</td>
<td>3</td>
<td>JRL 318</td>
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<td><strong>Total</strong></td>
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<td><strong>18</strong></td>
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**Third Year**

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Hrs.</th>
<th>Sixth Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>ECON 201</td>
<td>3</td>
<td>ECON 202</td>
<td>3</td>
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<tr>
<td>JRL 319</td>
<td>3</td>
<td>PRNJ AoE requirement</td>
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<tr>
<td>PRNJ AoE requirement</td>
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<td>JRL 489</td>
<td>3</td>
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<td>POLS 220</td>
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<td>Minor</td>
<td>3</td>
</tr>
<tr>
<td>Minor/2nd Concentration</td>
<td>3</td>
<td>Any unused course from</td>
<td></td>
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<tr>
<td>ACCT 201/BUSA 340</td>
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<td>Obj. 4, 5, 7 or 9 lists</td>
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<td><strong>18</strong></td>
<td></td>
<td><strong>15</strong></td>
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**Fourth Year**

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Hrs.</th>
<th>Eighth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obj. 9 course from approved list</td>
<td>3</td>
<td>JRL 459</td>
<td>3</td>
</tr>
<tr>
<td>PRNJ AoE requirement</td>
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<td>6</td>
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<td>JRL 428</td>
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<td>General Elective</td>
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<td>Minor</td>
<td>3</td>
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<td><strong>12</strong></td>
</tr>
<tr>
<td>General Elective</td>
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**Note:** The School of Journalism specifies many General Education Curriculum and non-major requirement courses. Some courses are available only once a year; it is the student’s responsibility to arrange his/her schedule accordingly.
# Television Journalism Area of Emphasis

## First Year

<table>
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<th>Hrs.</th>
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<tbody>
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<td><strong>First Semester</strong></td>
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</tr>
<tr>
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<tr>
<td>Obj. 1 ENGL 101</td>
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<tr>
<td>Obj. 6 PHIL 100 or 130</td>
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<tr>
<td>Obj. 2 Lab Science</td>
<td>4</td>
</tr>
<tr>
<td>Obj. 5 course from approved list</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 6 JRL 115/UNIV 101</td>
<td></td>
</tr>
<tr>
<td>(or equivalent)</td>
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</tr>
<tr>
<td>Obj. 8 JRL 101</td>
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<tr>
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## Second Year

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<th>Hrs.</th>
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<tr>
<td>Obj. 2 MATH 121 (or other MATH)</td>
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</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 4 course from approved list</td>
<td>3</td>
</tr>
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<td>HIST 153</td>
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</tr>
<tr>
<td>ENGL Literature from approved list</td>
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<tr>
<td>JRL 215</td>
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<table>
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</tr>
<tr>
<td>Obj. 2 STAT 111 (or equivalent)</td>
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<tr>
<td>Obj. 9 course from approved list</td>
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<tr>
<td>PSYC 101</td>
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<tr>
<td>Same Foreign Language</td>
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<td>JRL 210</td>
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<td>TVJ 319</td>
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## Third Year

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<tbody>
<tr>
<td><strong>Fifth Semester</strong></td>
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<tr>
<td>ECON 201</td>
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<td>POLS 220</td>
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<tr>
<td>TVJ 386</td>
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<tr>
<td><strong>Sixth Semester</strong></td>
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<tr>
<td>ECON 202</td>
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<td>TVJ 487</td>
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<td>JRL 489</td>
<td>3</td>
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<tr>
<td>Minor</td>
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</tr>
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<td>COMM 103, SPA 270 or THET 102</td>
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## Fourth Year

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<tbody>
<tr>
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<td>Approved 400-level course</td>
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<td>JRL 459</td>
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<tr>
<td>SOJ Electives</td>
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<td>Minor</td>
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</table>

**Note:** The School of Journalism specifies many General Education Curriculum and non-major requirement courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.
### Visual Journalism Area of Emphasis

#### First Year

<table>
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<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
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<tr>
<td>Take JOE</td>
<td>N/A</td>
<td>Obj. 1 ENGL 102</td>
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<td>Obj. 1 ENGL 101</td>
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<td>Obj. 2 Same Science</td>
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<td>Obj. 6 PHIL 100 or 130</td>
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<td>Obj. 3 HIST 152</td>
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<td>Obj. 2 Lab Science</td>
<td>4</td>
<td>POLS 102</td>
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<td>Obj. 5 course from approved list</td>
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<td>ULIB 101</td>
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<td>Obj. 6 JRL 115/UNIV 101 (or equivalent)</td>
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<td>Obj. 8 JRL 101</td>
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#### Second Year

<table>
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<th>Hrs.</th>
<th>Fourth Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Obj. 2 MATH 121 (or other MATH)</td>
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<td>Obj. 2 STAT 111 (or equivalent)</td>
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<td>Obj. 4 course from approved list</td>
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<td>Obj. 7 course from approved list</td>
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<td>Foreign Language</td>
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<td>PSYC 101</td>
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<td>HIST 153</td>
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<td>Same Foreign Language</td>
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<td>ENGL Literature from approved list</td>
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<td>JRL 210</td>
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<td>JRL 215</td>
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<td>JRL 318</td>
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#### Third Year

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<th>Sixth Semester</th>
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<tr>
<td>ECON 201</td>
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<td>ECON 202</td>
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</tr>
<tr>
<td>Req'd. VISJ design class</td>
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<td>VISJ AoE requirement</td>
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<tr>
<td>VISJ AoE requirement</td>
<td>3</td>
<td>JRL 489</td>
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<tr>
<td>POLS 220</td>
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<td>Minor</td>
<td>3</td>
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<tr>
<td>Minor/2nd Concentration</td>
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<td>Any unused course from Obj. 4, 5, 7 or 9 lists</td>
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#### Fourth Year

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Hrs.</th>
<th>Eighth Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
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<td>SOJ Electives</td>
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<td>JRL 428</td>
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<tr>
<td>Minor</td>
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<tr>
<td>Total</td>
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<td>Total</td>
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</tbody>
</table>

**Note:** The School of Journalism specifies many General Education Curriculum and non-major requirement courses. Some courses are available only once a year; it is the student's responsibility to arrange his/her schedule accordingly.
Degree Offered

Bachelor of Science in Dental Hygiene

Admission

To get an application, go to http://www.hsc.wvu.edu/sod/departments/Hygiene/admission.html and follow the “On-line Application” link at the bottom of the page. You may also get an application by contacting the Division of Dental Hygiene, West Virginia University, P.O. Box 9425, Morgantown, WV 26506, or the Office of Admissions, Health Sciences Center, West Virginia University, P.O. Box 9815, Morgantown, WV 26506. The application should be received by March 1st preceding the fall semester you are applying for.

If you are applying to WVU as a freshman, you only need to complete the dental hygiene application. If you are not accepted into the Dental Hygiene Program, you will be placed in general studies. You must have a diploma from an accredited high school or preparatory school. The following high school classes are required:

- four units of English
- two units of algebra
- one unit of plane geometry
- three units of science (must include one unit of biology and one unit of chemistry)

We pay particular attention to scholastic achievement in science courses. We also expect applicants to rank in the upper half of their graduating classes. Physical strength with the ability to sit and stand as required, fine precision bilateral manipulative hand/motor skills, adequate visual acuity, eye/hand/foot coordination, and emotional stability are essential characteristics for individuals who wish to enter and continue in the dental hygiene program. They must meet other medical qualifications as required. Reasonable accommodation will be considered for students with special needs.

We require that you take the American College Testing Program (ACT) examination or the Scholastic Aptitude Test (SAT). The Dental Hygiene Admissions Committee reviews all applications. If you are among the most qualified, you may be invited to come to the campus for a personal interview. Competition for admission is intense. Preference is given to residents of West Virginia.

Degree Completion Program

If you are a registered dental hygienist, you can be admitted directly to the Division of Dental Hygiene as a full-time or a part-time student. To be eligible for the degree completion program, you must have a certificate or associate’s degree from an accredited dental hygiene program. You can transfer lower-division credits (see “Suggested Dental Hygiene Curriculum”). Your acceptance and placement in the program depend upon your academic record and upon the number of spaces available.

When you apply, we ask you to include complete records of previous study. An official transcript needs to be mailed to us by the registrar of your previous school. Include catalog descriptions of the courses taken. If you are currently enrolled in a certificate or associate’s degree program, include your program of study. You are responsible for the submission of a complete record package. You can enter the degree completion program twice a year. Applications can be obtained after September 1st of the year preceding application to the program. The WVU Health Sciences Center Catalog contains complete information about the program in dental hygiene.
### Suggested Dental Hygiene Curriculum

#### First Year

<table>
<thead>
<tr>
<th></th>
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<th>Second Semester</th>
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<tbody>
<tr>
<td>CHEM 111</td>
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<td>4</td>
<td>BIOL 102</td>
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<td>*COMM 100/102 or 104</td>
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<td>3</td>
<td>BIOL 104</td>
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<td>*DTHY 100 Health Care Term</td>
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<td>CHEM 112</td>
<td>4</td>
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<tr>
<td>DTHY 185 Head &amp; Neck Anatomy</td>
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<td>2</td>
<td>*DTHY 101 Intro. to Dental Hygiene</td>
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<tr>
<td>ENGL 101</td>
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<td>3</td>
<td>*DTHY 186 Dental Anatomy</td>
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<td>MATH 126</td>
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<td>*HN&amp;F 171 Nutrition</td>
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<td>*Orientation 101</td>
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<td>*PSYC 101</td>
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#### Summer Semester

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#### Second Year

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<td>DTHY 211 Dental Radiology</td>
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<td>DTHY 205 Theory/Practice-Prevent</td>
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<td>DTHY 220 Dental Nursing Tech</td>
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<tr>
<td>DTHY 210 Dental Radiology</td>
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<td>DTHY 225 Dental Hygiene Tech</td>
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<td>*ENGL 102</td>
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<tr>
<td>MICB 200</td>
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<td>GEC (#3, 5, 8, 9)</td>
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<td>PSYC 241*</td>
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<td>NBAN 309 Histology</td>
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<td>SOCA 101*</td>
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<td>PHYS 241</td>
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#### Summer Semester

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<tr>
<td>PHARM 260 (Web)</td>
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#### Third Year

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<tr>
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<td>DTHY 300 Anesthesiology</td>
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<td>DTHY 360 Dental Materials</td>
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<td>DTHY 351 Dental Health Ed</td>
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<tr>
<td>DTHY 363 Periodontics</td>
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<td>DTHY 361 Expanded Functions</td>
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<td>DTHY 366 Dental Literature</td>
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<td>DTHY 364 Periodontics</td>
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<tr>
<td>DTHY 370 Clinical Methods</td>
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<td>2</td>
<td>DTHY 374 Clinic DH</td>
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<tr>
<td>DTHY 372 Clinic DH</td>
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<td>2</td>
<td>DTHY 378 Didactic Teaching Meth</td>
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<td>Pathology 302</td>
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#### Summer Semester

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#### Fourth Year

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<td>DTHY 406 Clinic – DH</td>
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<td>DTHY 405 Adv. Clinic DH</td>
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<td>DTHY 407 Clinic Methods</td>
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<td>DTHY 445 Applied Pharmacology</td>
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<td>DTHY 440 Sr. Integration Seminar</td>
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<tr>
<td>DTHY 450 Dental Health Ed. 2</td>
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<td>DTHY 451 Dental Health Ed. 3</td>
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<td>DTHY 478 Clin. Teaching Methods</td>
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<td>DTHY Electives 490, 491, 493</td>
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<td>DTHY 493 Clinical Pharm.</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
</table>
Medical Technology
Martha J. Lake, Ed.D., CLS (NCA), MT (ASCP), Professor and Program Director

Degree Offered
Bachelor of Science in Medical Technology

The Profession
Medical technologists are clinical laboratory professionals educated in all aspects of clinical laboratory analysis including test development, performance, and evaluation. Medical technologists may work in many areas, including clinical chemistry, hematology, immunohematology, immunology, clinical microbiology, and molecular diagnostics. Practice settings include hospital, clinic, public health, or private clinical laboratories; research, cyto genetic, pharmaceutical, or in-vitro fertilization laboratories; technical or sales representatives for medical manufacturers and suppliers; biotechnology, food, and cosmetic industries; and state or federal crime laboratories.

Nature of Program
The undergraduate program in medical technology began in 1945 and is administered by the School of Medicine. Students are admitted into the Bachelor of Science program after completing two years of pre-requisite courses in an accredited college or university. Exceptional students may be admitted directly into the program as entering freshmen. The undergraduate curriculum includes 60 semester hours of pre-requisite courses (pre-medical technology curriculum), and 76 semester hours in the medical technology professional program in the School of Medicine. Students may complete the pre-requisite courses at any regionally accredited institution of higher education.

Since the last two years are professional in nature, students must be enrolled in the WVU School of Medicine for the entire period. The junior year (the first year of the professional curriculum) includes courses to introduce the student to the medical sciences and to prepare for the senior year curriculum. During the senior year (the second year of the professional curriculum), the student receives both didactic instruction and practical experience. Clinical affiliate hospitals include: Ruby Memorial Hospital (WVU Hospitals, Inc.) Allegheny West Penn Health System, Excela Health, Monongalia County General Hospital (Mon General Hospital), City Hospital, Jefferson Memorial Hospital, and the Veteran’s Affairs Medical Center in Martinsburg, West Virginia.

Ruby Memorial Hospital is the primary teaching hospital for the medical technology program. Ruby Memorial Hospital is part of the Robert C. Byrd Health Sciences Center of West Virginia University in Morgantown. The hospital is a 376-bed tertiary care teaching hospital and referral center. Allegheny West Penn Health System includes a central core clinical laboratory and six hospitals in the greater Pittsburgh, Pennsylvania metropolitan area. At Excela Health, students rotate at Latrobe Hospital in Latrobe, PA and Westmoreland Hospital in Greensburg, PA. Latrobe Hospital is a 216 bed facility that offers a full array of acute, surgical and specialized services. Westmoreland Hospital is a full service, acute care facility with a total of 323 beds. Monongalia General Hospital in Morgantown is a 207-bed community hospital providing a full range of family centered care to residents of north-central West Virginia and southwestern Pennsylvania. City Hospital in Martinsburg, WV, and Jefferson Memorial Hospital in Ranson, WV, comprise West Virginia University Hospitals—East a regional non-profit health care provider. The Veteran’s Affairs Medical Center in Martinsburg, WV, is a general medical and surgical, long-term care and rehabilitation and domiciliary serving over 126,000 veterans in West Virginia, Maryland, Virginia, and Pennsylvania. To enhance their clinical experience, students are required to complete a two, three, or four week rural rotation at an approved site in West Virginia.
The WVU Medical Technology program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 W. Bryn Mawr Avenue, Suite 670, Chicago, IL 60631-3415, (773) 714-8880. Graduates are eligible for certification by the Board of Registry of the American Society for Clinical Pathology (ASCP) and the National Credentialing Agency for Laboratory Personnel (NCA).

Other Programs
An articulation program is available for certified medical laboratory technicians (clinical laboratory technicians) who want to complete the requirements for a Bachelor of Science degree. Further information may be obtained by contacting the Medical Technology Program Office.

A part-time curriculum is available. Part-time students must meet the same admission requirements and application deadlines as full-time students. For further information, contact the Medical Technology Program Office.

Admission to the Pre-Medical Technology Program
Students in the pre-medical technology program and direct admit students must meet the admission criteria of WVU. Pre-medical technology students are advised by the Undergraduate Academic Services Center. Medical technology faculty advises direct admit students. Prospective students should take mathematics, chemistry, and biology in high school.

Qualified applicants may enter the pre-medical technology program at the beginning of any semester, but the professional curriculum begins the fall semester after the student is admitted to the professional program. Admission to the pre-medical technology program does not assure admission to the professional program.

Admission to the Professional Program
Direct Admit
Students may be admitted directly into the medical technology program as freshman with a minimum high school grade point average of 3.75 and a minimum math component ACT score of 26 or a minimum math component SAT score of 600. They are advised by the medical technology program advisor and are automatically admitted to the professional program as long as they meet all admission requirements listed below. MTEC 100, 101, 200, and 201 are required courses for direct admit students.

Traditional
Pre-medical technology students apply for admission into the junior year (first year in the medical technology program) before the second semester of the sophomore year in college. Fulfillment of the pre-medical technology curriculum does not assure admittance into the professional program (medical technology curriculum). Students are selectively admitted to the final two years of the professional program. Requirements for admission to the professional program include course requirements, grade point average, a personal interview, and letters of recommendation.

The course requirements (pre-requisites) are:
• English: six credits of composition and rhetoric (ENGL 101 and 102).
• Biology: eight credits of general biology (BIOL 101, 102, 103, and 104).
• Chemistry: eight credits of inorganic (CHEM 115 and 116), and four credits of organic (CHEM 231)*.
• Mathematics: three credits of college algebra (MATH 126).
• Statistics: three credits of introductory statistics (STAT 211).
• GEC: 22–23 credits to satisfy Objectives 3 through 9.

*Transfer students must complete organic chemistry courses (eight hours) that include aliphatic and aromatic compounds with laboratory.

Although not required for admission to the medical technology professional program, eight credits of organic chemistry and eight credits of physics are suggested electives for those students interested in applying to medical school. A foreign language is recommended for students who plan to do graduate work.
Admission decisions are based upon the applicant’s grade point average; recommendations, interview, and documented ability to successfully complete full-time academic work. Applicants should have a minimum grade point average of 2.5 (cumulative and science). Applicants may be admitted on probation if their grade point average (cumulative or science) is less than 2.5. Applicants with less than a 2.0 grade point average, either cumulative or science, will not be admitted. A grade point average of 2.5 or above does not necessarily assure admission. Two letters of recommendation—at least one from a college science professor and a personal interview with the Medical Technology Admissions Committee are required.

Admission of international students is in compliance with WVU regulations. At least one science course (chemistry or biology) must be completed at a regionally accredited institution of higher education in the United States.

Application Procedure

Each year the Medical Technology Program selects a limited number of students from the applications received for admission to the program. Application forms for admission to the professional program are available after December 1 from the Office of the Assistant Director of Admissions and Records, WVU Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815, or from the WVU Office of Admissions and Records Web site: http://www.arc.wvu.edu/admissions/applications.html. The application fee is $25 for residents and $40 for non-residents. The priority date for returning the application form is February 15. The deadline date is March 1 if the student expects to enter the program the following fall semester. In the event the class is not filled by those applications, the deadline may be extended until as late as the first business day in August.

Pre-Medical Technology Curriculum Plan

First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 115 <em>Fund. of Chemistry</em></td>
<td>4</td>
<td>CHEM 116 <em>Fund. of Chemistry</em></td>
<td>4</td>
</tr>
<tr>
<td>Elective*</td>
<td></td>
<td>ENGL 101 <em>Comp. and Rhet.</em></td>
<td>3</td>
</tr>
<tr>
<td>MATH 126 Algebra</td>
<td>3</td>
<td>Elective*</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101 and 103</td>
<td>4</td>
<td>BIOL 102 and 104</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 100** Medical Technology</td>
<td>1</td>
<td>METC 101** Medical Technology</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
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</table>

Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective*</td>
<td>9</td>
<td>CHEM 231 <em>Organic Chemistry</em></td>
<td>4</td>
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<tr>
<td>ENGL 102 <em>Comp. and Rhet.</em></td>
<td>3</td>
<td>Elective*</td>
<td>9</td>
</tr>
<tr>
<td>MTEC 200*** Med. Tech. Term.</td>
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<td>METC 201 <em>Basic Med. Tech</em></td>
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<tr>
<td>STAT 211</td>
<td>3</td>
<td><strong>Total</strong></td>
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<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* General Education Curriculum courses to satisfy objectives 3–9.
**MTEC 100 and 101 are required for direct admit students and highly recommended for pre-medical technology students.
***MTEC 200 and 201 are required courses for direct admit students and optional for pre-medical technology students.
### Medical Technology

#### Third Year (Medical Technology I)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATH 300 Intro. to Pathology</td>
<td>3</td>
<td>MICB 327 Microb. Parasitology</td>
<td>2</td>
</tr>
<tr>
<td>PATH 320 Basic Clinical Biochem.</td>
<td>3</td>
<td>MICB 323 Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>PSIO 441 Mech. Body Function</td>
<td>4</td>
<td>PATH 340 Intro. to Hematology</td>
<td>3</td>
</tr>
<tr>
<td>PATH 380 Intro. to Immunology</td>
<td>1</td>
<td>MTEC 310 Clin. Lab. Mycology</td>
<td>1</td>
</tr>
<tr>
<td>PATH 303 Laboratory Applications</td>
<td>2</td>
<td>MTEC 470 Clinical Microscopy</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td>MTEC 381 Research, Ed. Meth.*</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MTEC 329 Clin. Chemistry I</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td>MTEC 472 Urinalysis/BF Lab</td>
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<tr>
<td><strong>Total</strong></td>
<td>16</td>
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</tr>
</tbody>
</table>

#### Fourth Year (Medical Technology II)

Students receive didactic and clinical instruction during the fourth (senior) year. The senior year includes summer I, fall, and spring semesters. Any competencies not completed must be made-up by the end of the school year (mid-May) or graduation may be delayed.

Students register for the following courses during the fourth year.

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTEC 401 Phlebotomy</td>
<td>1</td>
</tr>
<tr>
<td>MTEC 402 Rural Health Practicum</td>
<td>1</td>
</tr>
<tr>
<td>MTEC 403 Community Service Practicum</td>
<td>1</td>
</tr>
<tr>
<td>MTEC 420 Immunohematology and Blood Banking</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 421 Immunohematology and Blood Banking Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 430 Clinical Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 431 Clinical Chemistry Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 440 Clinical Hematology</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 441 Clinical Hematology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 450 Clinical Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 451 Clinical Microbiology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 460 Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 465 Laboratory Management</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 475 Medical Relevance of Laboratory Analyses</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 480 Clinical Immunology</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 481 Clinical Immunology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>36</td>
</tr>
</tbody>
</table>
Graduation Requirements

Junior Year
Students must maintain a grade point average of 2.0 for each semester to advance to the senior year. Failure to maintain a 2.0 grade point average may result in probation or suspension. The Academic and Professional Standards Committee must recommend any student for advancement to the senior year. A satisfactory grade point average does not assure advancement.

Senior Year
A student must maintain a grade point average of 2.0 for each semester of the senior year. Graduation requires satisfactory completion of all academic work and the recommendation of the faculty of the School of Medicine.

Graduation is not dependent upon passing a national certification examination.

Human Performance and Applied Exercise Science

Three divisions make up the Department of Human Performance and Applied Exercise Science:

Division of Exercise Physiology
Includes undergraduate (B.S.), masters (M.S.—clinical track and thesis track) and doctorate (Ph.D.) programs.

Division of Occupational Therapy
Includes an entry-level master’s program.

Division of Physical Therapy
Includes an entry-level doctoral program.

Exercise Physiology
Stephen E. Alway, Ph.D., Professor and Chair
Randall W. Bryner, Ed.D., Director of Undergraduate Education and Vice Chair

Degree Offered
Bachelor of Science

Introduction
The WVU Exercise Physiology program was established in the Robert C. Byrd Health Sciences Center’s School of Medicine in July 1993. The program offers a four-year curriculum leading to a bachelor of science degree in exercise physiology with the option of an emphasis area in aquatic therapy or health professions.

Students pursuing health and fitness or clinical exercise professions in the Division of Exercise Physiology will study in one of the select programs now endorsed by the American College of Sports Medicine, the gold standard in health and fitness certifications and professional memberships. Following review of more than 40 programs in the first year, ACSM endorsed West Virginia University’s curriculum as meeting the academic standards needed to prepare students for health, fitness, and/or clinical exercise training positions. The Division of Exercise Physiology’s curriculum covers the knowledge, skills, and abilities to prepare students for the ACSM Health/Fitness Instructor certification examination and the certification for the National Strength and Conditioning Association (NSCA) Certified Strength and Conditioning Specialist (CSCS) and NSCA-Certified Personal Trainer (NSCA-CPT). The program is also an excellent, preparatory program for those who want to further their education with graduate (master’s or Ph.D.) or professional degrees in exercise physiology, physical therapy, occupational therapy, medicine, dentistry, pharmacy, chiropractic, or other health-related careers.
The Profession

Exercise physiologists are trained to evaluate people in the areas of cardiovascular fitness, muscular strength and endurance, flexibility, neuromuscular integration, and body composition. They are also trained to provide and evaluate exercise programs based on the results of these evaluations, which are designed to increase the functional capacity of the participants. Exercise physiologists work with athletes, patients, children, elderly, or healthy young adult participants in the areas of disease prevention in wellness programs, rehabilitation in hospital settings, or research. Students will obtain considerable experience working with patients having insulin resistance, diabetes, and cardiovascular diseases. Graduates of may be employed in a wide variety of private, community, state, and national agencies. Exercise physiology is an evolving field that is becoming increasingly important with the integration of preventive medicine into the health-care system. Employment opportunities are expanding and increase with experience and level of education.

Bachelor of Science
Admission

Students must meet the minimum requirements for WVU for admission to the program. All coursework completed prior to transfer.

Program Requirements for General Exercise Physiology

Students must complete the University requirements for the General Education Curriculum (GEC) that provide students with broad liberal knowledge and experience and complete the following courses or course equivalents in theory and foundation to meet the exercise physiology program requirements:

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHPR 172 First Aid and Emergency Care</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH 241 Life Span Developmental Psych</td>
<td>3</td>
</tr>
<tr>
<td>ATTR 121 Sport Injury Control and Management</td>
<td>3</td>
</tr>
<tr>
<td>ATTR 219 Gross Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 240 Medical Terminology</td>
<td>1</td>
</tr>
<tr>
<td>EXPH 101 Introduction to Exercise Physiology I</td>
<td>1</td>
</tr>
<tr>
<td>EXPH 102 Introduction to Exercise Physiology II</td>
<td>1</td>
</tr>
<tr>
<td>EXPH 364 Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 365 Exercise Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 368 Laboratory Techniques and Methods I</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 370 Scientific writing for EXPH</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 369 Strength and Conditioning Methods</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 491 Professional Field Experience</td>
<td>6</td>
</tr>
<tr>
<td>EXPH 475 Industry Organization in EXPH</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 496 Senior Thesis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 126 College Algebra*</td>
<td>3</td>
</tr>
<tr>
<td>MATH 128 Plane Trigonometry*</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 101 Introductory Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 102 Introductory Physics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 115 Fundamentals of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 116 Fundamentals of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 231 Organic Brief Course</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 234 &amp; 236 Organic Chemistry II</td>
<td>4</td>
</tr>
</tbody>
</table>
BIOL 101 & 103 General Biology and Lab** ...................................................... 4
BIOL 102 & 104 General Biology and Lab** ...................................................... 4
PSIO 241 or 441 Elementary Physiology ......................................................... 4
HN&F 171 Introduction to Human Nutrition .................................................... 3
STAT 211 Elementary Statistical Inference ...................................................... 3
Suggested Electives: BIOL 219 The Living Cell ............................................. 4
and Biochemistry 339 .................................................................................. 3
Total ................................................................................................................ 97

*Students may take MATH 129, 150, or 155 in place of MATH 126 and 128.
**Students may take BIOL 115 and 117 in place of BIOL 101–104.

Students must have a grade of C or better in all required courses. Science courses
must be taken at WVU. Students must have a minimum of 128 hours to graduate. Students
must maintain a cumulative GPA of 2.5 or better to remain in the program.

Exercise Physiology Curriculum Plan

Freshman Year
First Semester Hrs. Second Semester Hrs.
ENGL 101 Intro. to Psychology .................................................. 6
MATH 126 Algebra ................................................................. 3
BIOL 101 & 103 General Biology ............................................. 4
EXPH 101 Intro. to EXPH I .................................................. 1
Total ......................................................................................... 17

Sophomore Year
First Semester Hrs. Second Semester Hrs.
CHEM 115................................................................. 4
PHYS 101................................................................. 3
GEC course ................................................................. 3
EXPH 364 Kinesiology ...................................................... 3
ENGL 102................................................................. 3
Total ......................................................................................... 17

Junior Year
First Semester Hrs. Second Semester Hrs.
EXPH 365 Exercise Physiology I ........................................ 3
EXPH 368 Lab Tech. & Methods I ................................ 3
ATTR 219 Anatomy .......................................................... 3
PSYC 241 Human Growth & Dev .................................... 6
GEC course ................................................................. 3
Total ......................................................................................... 18

Senior Year
First Semester Hrs. Second Semester Hrs.
EXPH 491 Prof. Field Exp .......................................................... 3
EXPH 496 Senior Thesis .................................................... 3
STAT 211................................................................. 3
Electives (e.g., Rsch. methods) ........................................ 3
Total ......................................................................................... 12

Total ......................................................................................... 15

(Suggested electives: BIOL 219 The Living Cell (4 hrs.) and 339 Biochemistry (3 hrs.)

*MATH 129, 150, or 155 can be substituted for MATH 126 and 128.
**BIOL 115 and 117 can be substituted for BIOL 101–104.
Students may also choose an emphasis in health professions. This program prepares the student to con-
tinue their education in graduate or professional schools. An aquatic therapy emphasis is also available for
students who wish to pursue a clinical career.
Occupational Therapy
Randy P. McCombie, Ph.D., OTR/L, Chair

Degree Offered
Master of Occupational Therapy

Introduction
In fall 1993, the Board of Trustees approved the establishment of a new master’s degree program at WVU, leading to an entry-level master’s degree in occupational therapy. The program accepted its first students into the professional program in the fall semester of 1996. The academic and fieldwork program requires three years to complete. Prior to application, students are required to complete 58 hours of prerequisite courses, which in most instances will take approximately two years to fulfill.

The Profession
Occupational therapy is a health profession whose services are provided to people of all ages with physical, mental, or developmental disabilities. The purpose of occupational therapy is to help individuals achieve a maximum level of independence. The focus is on developing the capacity to function in all activities (occupations) of daily life, including self care, work, and leisure; hence the name occupational therapy.

Occupational therapy is a health and rehabilitation profession designed to help people regain and build skills that are important for health, well-being, security, and happiness. Occupational therapists work with people of all ages who, because of physical, developmental, social, or emotional deficits, need specialized assistance in learning skills to enable them to lead independent, productive, and satisfying lives.

Occupational therapists work in schools, hospitals, rehabilitation centers, home health agencies, skilled nursing homes, and private practice.

Accreditation Status
WVU’s Division of Occupational Therapy has been awarded accreditation status by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220. AOTA’s phone number is (301) 652-AOTA. Graduates of the program are able to sit for the National Certification Examination for the Occupational Therapist administered by the National Board for Certification in Occupational Therapy (NBCOT). For more information, NBCOT can be contacted at (301) 990-7979. After successful completion of this exam, the individual will be an occupational therapist, registered (OTR). Most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT certification examination.

Note: A felony conviction may impact a graduate’s ability to take the NBCOT (National Board for Certification in Occupational Therapy, Inc.) examination and/or obtaining a state license. For further information on NBCOT’s Character Review Program, interested parties can obtain information from that Board on their Web site at www.nbcolt.org.

Admissions Process
This includes obtaining an application packet available December 1 from the Admissions and Records Office, (304) 293-3521, and completing that packet by February 15. A personal interview may be required.

College Prerequisite Courses—Traditional Track

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 101</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 241</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 281</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 101 or SOCA 105</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101 and BIOL 103</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 102 and BIOL 104</td>
<td>4</td>
</tr>
</tbody>
</table>
PHYS 101 ................................................................................................................. 4
STAT 211 .................................................................................................................. 3
COMM 100 ................................................................................................................ 1
COMM 102 ............................................................................................................... 2
PSIO 241 .................................................................................................................... 4
Total ............................................................................................................................ 40

Recomended Courses
CHEM 115 .................................................................................................................. 4

Note: Students must complete the WVU General Education Curriculum (GEC) requirements. Students should contact their advisor for specifics on these requirements.

Note: Occupational therapy assistants and/or those holding a four year degree in any field who are interested in the distance learning track should contact the Division of Occupational Therapy for specifics on program prerequisites and other program requirements.

WVU students must consult the Student Advising Center prior to enrolling in prerequisite courses. These courses may be taken at any institution which offers equivalent courses. Any questions regarding prerequisite courses may be directed to the Office of Academic Advising, (304) 293-5805. Equivalence may be determined by contacting the transfer desk, Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009.

Admission Standards
Normally, students apply to the program during their second year of college. They must have a minimum of 48 hours of college credit which includes the prerequisites listed above. Students who already have a degree in another field are also eligible to apply. All applicants must meet the following criteria.

• Minimum GPA of 3.0, overall and prerequisites.
• Minimum of 60 hours of volunteer or work experience with people with disabilities is required. A minimum of 45 of those hours must be with a licensed occupational therapist (OTR/L).
• Two recommendation forms are also required, one from an occupational therapist who supervised the volunteer/work experiences and the other from a professor who has recently taught the applicant.
• Completion of all prerequisite courses by the end of the semester of application (normally, second semester of sophomore year) is normally required.

What to Expect
Like many professional programs, the curriculum in the master’s entry-level occupational therapy program is fairly fixed and intense. The first professional year will include courses in basic sciences and introductory professional courses. The second and third professional years will deal more specifically with training in occupational therapy theory and practice as administered across a wide variety of settings. The professional curriculum includes two off-campus, full-time clinical experiences known as fieldwork. Students are financially responsible for transportation, housing, and meal expenses related to clinical assignments.

Program Timeframe
Students must complete all didactic coursework and Level II Fieldwork within a period of five years after commencing the occupational therapy program. Furthermore, all Level II Fieldwork must be completed within 18 months following completion of academic coursework while remaining within the five-year time frame.
Occupational Therapy Curriculum Plan

**Junior Year**

**Summer Session II**  Hrs.
- OTH 300 ............................................ 4
- OTH 480 ............................................ 2
**Total ............................................. 6**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>OTH 300</td>
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</tr>
<tr>
<td>OTH 480</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTH 301</td>
<td>3</td>
<td>OTH 307</td>
<td>3</td>
</tr>
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<td>OTH 302</td>
<td>2</td>
<td>OTH 308</td>
<td>4</td>
</tr>
<tr>
<td>OTH 303</td>
<td>2</td>
<td>OTH 321</td>
<td>3</td>
</tr>
<tr>
<td>OTH 304</td>
<td>4</td>
<td>OTH 360</td>
<td>3</td>
</tr>
<tr>
<td>OTH 305</td>
<td>4</td>
<td>OTH 493C</td>
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<td>OTH 435</td>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
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<th>Hrs.</th>
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<tbody>
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<td>OTH 385</td>
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<tr>
<td>OTH 401</td>
<td>4</td>
<td>OTH 408</td>
<td>3</td>
</tr>
<tr>
<td>OTH 417</td>
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<td>OTH 416</td>
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<td>OTH 419</td>
<td>3</td>
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<tr>
<td>OTH 440</td>
<td>2</td>
<td>OTH 432</td>
<td>3</td>
</tr>
<tr>
<td>OTH 403</td>
<td>3</td>
<td>OTH 480</td>
<td>1</td>
</tr>
<tr>
<td>OTH 497</td>
<td>1</td>
<td>OTH 405</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
<td>19</td>
</tr>
</tbody>
</table>

**Graduate Year**

**Summer 1-2**  Hrs.
- OTH 540 ............................................ 6
**Total ............................................. 6**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTH 480</td>
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<td>OTH 480</td>
<td>1</td>
</tr>
<tr>
<td>OTH 500</td>
<td>3</td>
<td>OTH 480</td>
<td>4</td>
</tr>
<tr>
<td>OTH 503</td>
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<td>4</td>
</tr>
<tr>
<td>OTH 570</td>
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<td>OTH 550</td>
<td>3</td>
</tr>
<tr>
<td>OTH 520</td>
<td>3</td>
<td>OTH 697</td>
<td>2</td>
</tr>
<tr>
<td>OTH 551</td>
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<td>Weeks 5–16</td>
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</tr>
<tr>
<td>OTH 697</td>
<td>2</td>
<td>OTH 640</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19</td>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>
Degree Offered
Bachelor of Science in Nursing

Nature of Program
The School of Nursing undergraduate program in nursing is recognized by health care agencies as providing excellent preparation for the nursing profession. Our graduates are in great demand and enjoy a large number of career opportunities. The B.S.N. curriculum includes courses in the humanities, social sciences, basic sciences, and nursing science. These courses are taken in conjunction with nursing clinical courses that enable students to apply their learning to actual client, family, and community situations that warrant nursing intervention. The curriculum has been carefully designed to equip graduates to begin professional nursing practice with patients of all ages in any health care setting where there is a position for the professional nurse at the start of his or her career. The program also provides an excellent foundation for graduate study in nursing and in other fields.

The baccalaureate program (B.S.N.) is available for high school graduates who aspire to a career in nursing (basic students). It is also available to registered nurses (R.N.s) who are licensed graduates of associate degree or diploma nursing programs seeking to continue their career development, and to individuals with college degrees in other fields who wish to attain the bachelor of science in nursing. The basic B.S.N. program can be completed in four years at WVU’s Morgantown campus or at WVU Institute of Technology. Programs with Glenville State College and Potomac State College of WVU allow students to complete the first two years at those schools. The third and fourth years of the program are completed by Glenville students at WVU Tech and by Potomac State students at WVU in Morgantown.

Registered nurses can complete the B.S.N. requirements online through a completely web based program. Advising for the program can occur at WVU in Morgantown or at the Charleston division. Nursing courses for R.N. students are scheduled to provide opportunity for completion of degree requirements in three semesters if non-nursing courses are already completed. Credit may be earned by enrollment and by challenge through advanced placement and portfolio exams.

A B.S./B.A. to B.S.N. accelerated program is available for the college graduate with a degree in a field other than nursing. Following 18 months of continuous enrollment, students attain the B.S.N. degree and are eligible to take the R.N. licensing examination. The B.S./B.A. to B.S.N. program is offered at WVU in Morgantown.

In keeping with the University’s commitment to the West Virginia Rural Health Education Partnerships (WVRHEP) program and to improving health care for all West Virginians, all health sciences students in state-supported schools complete a rural clinical practice requirement of at least three months duration as part of degree requirements. Nursing students complete the rural clinical practice requirement during their senior year.

Further information about the B.S.N. program or the M.S.N., D.N.P. and Ph.D. graduate programs in nursing may be obtained from the School of Nursing Website at http://www.hsc.wvu.edu/son or by contacting the WVU School of Nursing Office of Student Services, 6400 Health Sciences South, P.O. Box 9600, Morgantown, WV 26506-9600; telephone (304) 293-1386 or (toll free) 1-866-WVUNURS.
Accreditation

Initial accreditation was received with graduation of the first class in 1964. The baccalaureate program in nursing is fully accredited by the Commission on Collegiate Nursing Education, a national accrediting agency.

Fees, Expenses, Housing, Transportation, and Immunization

Students enrolling at the Morgantown campus pay fees which are detailed on the WVU Admissions and Records Website at http://www.arc.wvu.edu/admissions/tuition_fees.html. Special fees and deposits are also required. Students enrolling at other sites pay the fees shown in the catalog for that site. Fees are subject to change without notice. Students’ expenses vary according to the course of study and individual needs. Information concerning financial assistance, application forms, and the Free Application for Federal Student Aid (FAFSA) form may be obtained from the financial aid Website http://www.hsc.wvu.edu/fin/ or by contacting the HSC Financial Aid Office, Health Sciences North, P.O. Box 9810, Morgantown, WV 26506-9810; telephone (304) 293-3706.

The University Housing and Residence Life Office, telephone (304) 293-3621, provides information concerning University-owned housing. The Student Life Office in E. Moore Hall, telephone (304) 293-5611, provides information concerning privately owned, off-campus housing.

Students are expected to provide their own transportation, equipment, and instruments for the clinical courses. Some clinical experiences require travel in a multi-county area.

Proof of specific immunizations is required for all health sciences students.

Scholarships

The School of Nursing offers several scholarships. These scholarships are administered by the University’s Student Financial Aid Office and require completion of the Free Application for Federal Student Aid (FAFSA) form in order to be considered for financial aid. School of Nursing scholarships are available only to students already admitted to the School of Nursing and are awarded each April for the following academic year.

Criminal Background Checks

Students are required by clinical agencies to undergo a criminal background check prior to clinical experiences. Felony convictions and some serious misdemeanors may preclude participation in clinical rotations. This could, in turn, prevent the completion of clinical course requirements, and completion of the nursing program.

Direct Admission to Basic Program

Applicants are eligible to enter the B.S.N. program as freshmen. Admission is based on a combination of high school grade point average and composite ACT or total SAT scores in a single testing session. Students admitted to the nursing major as freshmen have a total of four semesters to complete the required freshman coursework.

High school students eligible for admission to the University are admitted directly into nursing if they meet the following criteria:

<table>
<thead>
<tr>
<th>GPA</th>
<th>Composite ACT</th>
<th>Total SAT (Critical Reading and Math)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6 or higher</td>
<td>25 or higher</td>
<td>1140 or higher</td>
</tr>
</tbody>
</table>

In addition, students must have completed the following high school credits required by the University:

<table>
<thead>
<tr>
<th>Units (years)</th>
<th>Credits Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>English (including courses in grammar, composition, and literature)</td>
</tr>
<tr>
<td>3</td>
<td>Social studies (including U.S. history)</td>
</tr>
<tr>
<td>3</td>
<td>College preparatory mathematics (algebra I, algebra II, and plane geometry)</td>
</tr>
<tr>
<td>2</td>
<td>Laboratory science (biology, chemistry, physics, or other courses with a strong laboratory science orientation)</td>
</tr>
</tbody>
</table>
Admission to Basic Program as Pre-Nursing or other College Major

If a student does not meet the nursing admission criteria to be directly admitted to the B.S.N. program as a freshman, the student can apply for admission to the B.S.N. program as a sophomore after completion of at least one semester of college coursework with a minimum cumulative GPA of 3.0.

Application to the basic B.S.N. program must be made by February 1 of the year the candidate wishes to be admitted. Acceptance and placement in the program are dependent upon space available in the program. There are limited spaces available and the best qualified applicants are accepted. Application forms are distributed after December 1 by the Health Sciences Center Office of Admissions and Records, or are available online from the Admissions and Records Website. Qualified applicants will be invited for an interview as part of the admissions process.

First-Year Basic Student Curriculum

All basic students admitted to the school complete a common curriculum in the freshman year designed to provide the foundation for success in subsequent nursing courses.

**First Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 111</td>
<td>3</td>
<td>CHEM 112</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 101</td>
<td>3</td>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 101 or 105</td>
<td>3</td>
<td>BIOL 102 and 104</td>
<td>4</td>
</tr>
<tr>
<td>HN&amp;F 171</td>
<td>3</td>
<td>PSYC 241</td>
<td>3</td>
</tr>
<tr>
<td>*MATH 124 or 126</td>
<td>3</td>
<td>NSG 110</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 101</td>
<td>1</td>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

Total Hrs: 17

*MATH 126 may be waived via the WVU Math Placement Exam, with placement in WVU pre-calculus or higher.

Students admitted to the School of Nursing as sophomores must have completed the freshman-year courses prior to beginning the sophomore year. All freshman-year courses must be completed with a grade of C or better. The cumulative GPA for science courses must be 3.0 or higher.

Academic Standards and Graduation Requirements

To be in good academic standing, students must:

1. Maintain a cumulative grade point average of 3.0 or better in all college work attempted.
2. Pass all nursing courses and pre- or co-requisite non-nursing courses with a grade of C or better.

A student who receives a grade of D, F, WU, or W in a required nursing course or pre- or co-requisite non-nursing course may repeat that course once and must earn a grade of C or better when the course is repeated. Students who repeat a nursing course or a pre- or co-requisite non-nursing course and earn a grade of D, F, WU, or W will be dismissed from the school. A student may repeat only one nursing course. Students who do not maintain a cumulative GPA of 3.0 or better will be placed on probation for one semester. Students on probation who do not raise their cumulative GPA to 3.0 or better after one semester will be dismissed from the School of Nursing. Nursing courses and pre- and co-requisite courses in which students earn a grade of D, F, WU, or W must be repeated prior to the student's progression to the next course(s) in the nursing sequence. Nursing courses must be repeated in the next fall or spring semester that the course is offered. Any general education course that is not a pre- or co-requisite of nursing courses and in which a grade of D or F has been earned must be repeated prior to graduation if it is to be counted toward graduation requirements. The baccalaureate of science in nursing degree is conferred upon completion of 128 hours and all required courses.
## Curriculum for the Basic Student

**B.S.N. Suggested Plan of Progression (Morgantown)**

### First Year
As listed on previous page.

### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 221</td>
<td>3</td>
<td>NSG 241</td>
<td>3</td>
</tr>
<tr>
<td>NSG 225</td>
<td>3</td>
<td>NSG 245</td>
<td>3</td>
</tr>
<tr>
<td>NSG 361</td>
<td>3</td>
<td>PSIO 241</td>
<td>4</td>
</tr>
<tr>
<td>NBAN 205 and 206</td>
<td>4</td>
<td>ENGL 102</td>
<td>3</td>
</tr>
<tr>
<td>MICB 200</td>
<td>3</td>
<td>GEC</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 322</td>
<td>2</td>
<td>NSG 376</td>
<td>3</td>
</tr>
<tr>
<td>NSG 325</td>
<td>2</td>
<td>NSG 334</td>
<td>3</td>
</tr>
<tr>
<td>NSG 351</td>
<td>2</td>
<td>NSG 335</td>
<td>2</td>
</tr>
<tr>
<td>NSG 355</td>
<td>2</td>
<td>NSG 356</td>
<td>3</td>
</tr>
<tr>
<td>NSG 333W</td>
<td>3</td>
<td>NSG 345</td>
<td>2</td>
</tr>
<tr>
<td>STAT 211</td>
<td>3</td>
<td>GEC</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Fourth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 421</td>
<td>3</td>
<td>NSG 441</td>
<td>3</td>
</tr>
<tr>
<td>NSG 423</td>
<td>2</td>
<td>NSG 442</td>
<td>2</td>
</tr>
<tr>
<td>NSG 425</td>
<td>6</td>
<td>NSG 445</td>
<td>5</td>
</tr>
<tr>
<td>NSG 476</td>
<td>3</td>
<td>NSG 455</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

The sequence of courses may vary from campus to campus.

### Transfer Students

Students with nursing credit from an accredited college or university are eligible for consideration for transfer admission by presenting a record of courses comparable to those required in this curriculum and meeting other School of Nursing admission requirements. These students must provide a statement of good standing from the nursing program in which they are currently enrolled. Acceptance and placement in the program are dependent on the individual's academic record and the number of spaces available. Transfer students must have a cumulative GPA of 3.0 for previous college coursework, and must have earned at least a C in all nursing and pre- and co-requisite non-nursing courses. Transfer students are admitted for the fall semester only and are required to complete a transfer student orientation.
B.S./B.A. to B.S.N. Admission

Applicants for the B.S./B.A. to B.S.N. program must have a baccalaureate degree from an accredited college or university with a cumulative grade point average of at least 3.0 on a 4.0 scale.

The following prerequisite courses must be completed with a grade of C or better prior to enrollment:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101 and 102</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3–4</td>
</tr>
<tr>
<td>Biology</td>
<td>3–4</td>
</tr>
<tr>
<td>Human Anatomy</td>
<td>3–4</td>
</tr>
<tr>
<td>Human Physiology</td>
<td>3–4</td>
</tr>
<tr>
<td>Microbiology</td>
<td>3–4</td>
</tr>
<tr>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Introductory Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Introductory Sociology</td>
<td>3</td>
</tr>
<tr>
<td>Lifespan Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>Human Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>College Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Application to the B.S./B.A. to B.S.N. program must be made by December 1 for admission to the program the following May. Acceptance and placement in the program are dependent upon space available in the program. There are limited spaces available and the best qualified applicants are accepted. Application forms are distributed after September 1 by the Health Sciences Center Office of Admissions and Records, or are available online from the Admissions and Records Website. Qualified applicants will be invited for an interview as part of the admissions process. Students in the B.S./B.A. to B.S.N. program must meet the same academic standards and graduation requirements as basic B.S.N. students.

Curriculum for the B.S./B.A. to B.S.N. Student

<table>
<thead>
<tr>
<th>Summer 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 251</td>
</tr>
<tr>
<td>NSG 255</td>
</tr>
<tr>
<td>NSG 361</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall 1</th>
<th>Hrs.</th>
<th>Spring 1</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 334</td>
<td>3</td>
<td>NSG 333W</td>
<td>3</td>
</tr>
<tr>
<td>NSG 335</td>
<td>2</td>
<td>NSG 322</td>
<td>2</td>
</tr>
<tr>
<td>NSG 356</td>
<td>3</td>
<td>NSG 325</td>
<td>2</td>
</tr>
<tr>
<td>NSG 345</td>
<td>2</td>
<td>NSG 351</td>
<td>2</td>
</tr>
<tr>
<td>NSG 376</td>
<td>3</td>
<td>NSG 355</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summer 2</th>
<th>Hrs.</th>
<th>Fall 2</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 421</td>
<td>3</td>
<td>NSG 441</td>
<td>3</td>
</tr>
<tr>
<td>NSG 423</td>
<td>2</td>
<td>NSG 442</td>
<td>2</td>
</tr>
<tr>
<td>NSG 425</td>
<td>6</td>
<td>NSG 445</td>
<td>5</td>
</tr>
<tr>
<td>NSG 476</td>
<td>3</td>
<td>NSG 455</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>
Admission for R.N. to B.S.N. Program

Registered nurses are admitted directly to the School of Nursing. Acceptance and placement in the program are dependent upon the individual’s academic record and upon the number of spaces available. An unrestricted license to practice nursing and a grade point average of 2.5 or better on all college work attempted are required to be eligible for consideration.

All registered nurses will transfer 50 hours of undifferentiated nursing credit. All R.N. to B.S.N. students will be required to meet WVU’s General Education Curriculum (GEC). If a student already holds a bachelor’s degree in another discipline, only a course in statistics (if not already taken) will be required to fulfill the GEC requirements. Advisors will work with students to identify courses already appearing on the transcript that meet GEC requirements, and then develop a plan to fulfill any remaining requirements.

R.N. to B.S.N. Full-time Progression Plan

Progression will vary depending on the amount of non-nursing courses that must be completed, whether the student wishes to be part-time or full-time, and when courses are offered. This full-time progression plan is projected on the basis that all non-nursing requirements have been completed.

<table>
<thead>
<tr>
<th>Fall</th>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 333W</td>
<td>..................</td>
<td>3</td>
</tr>
<tr>
<td>NSG 340</td>
<td>..................</td>
<td>3</td>
</tr>
<tr>
<td>NSG 361</td>
<td>..................</td>
<td>3</td>
</tr>
<tr>
<td>NSG 476</td>
<td>..................</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>..........................</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 433</td>
<td>..........................</td>
<td>3</td>
</tr>
<tr>
<td>NSG 434</td>
<td>..........................</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>..........................</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summer I (12 wks.)</th>
<th>Third Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 441*</td>
<td>..........................</td>
<td>3</td>
</tr>
<tr>
<td>NSG 445*</td>
<td>..........................</td>
<td>5</td>
</tr>
<tr>
<td>NSG 455*</td>
<td>..........................</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>..........................</td>
<td>9</td>
</tr>
</tbody>
</table>

*Note: based on background and experience, the R.N. student may establish credit by examination for all courses marked with *. A written examination is used for Nursing 441. A portfolio is used to establish credit for Nursing 445 and 455. Only those students who have adequate prior experience in the content areas covered by these courses are eligible to use the credit by examination or portfolio option.

R.N. to M.S.N. curriculum details are available on the School of Nursing Web page at http://www.hsc.wvu.edu/son.
School of Pharmacy

Patricia A. Chase, Ph.D., Dean
Rae R. Matsumoto, Ph.D., Associate Dean for Research and Graduate Programs
Mary K. Stamatakis, Pharm.D., Associate Dean for Academic Programs
W. Clarke Ridgway, B.S., Assistant Dean for Student Services

http://www.hsc.wvu.edu/sop

Degree Offered

Entry-Level Doctor of Pharmacy

Nature of Program
Pharmacy was first offered at West Virginia University as a department in the School of Medicine in 1914. It was changed to the College of Pharmacy in 1936 and to the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program. The current entry-level doctor of pharmacy program began in Fall 1998, and comprises four years of professional study preceded by a minimum of two years of pre-pharmacy coursework in an U.S. accredited college of arts and sciences.

The primary objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy and to educate pharmaceutical scientists for careers in teaching and research.

The School of Pharmacy is accredited by the Accreditation Council for Pharmacy Education. The council is composed of members from the American Pharmacists Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy (AACP), and American Council on Education. The School of Pharmacy holds membership in AACP, whose objective is to promote the interests of pharmaceutical education. All AACP member institutions must maintain certain requirements for entrance and graduation.

Admission
All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in the WVU Undergraduate Catalog and the WVU Health Sciences Center Catalog.

Students preparing for the study of pharmacy must satisfy the coursework requirements for entrance into the School of Pharmacy entry-level doctor of pharmacy program by completing the following requirements or their equivalents.

<table>
<thead>
<tr>
<th>Pre-Pharmacy Requirements</th>
<th>Credit Hrs.</th>
<th>WVU Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Orientation</td>
<td>1</td>
<td>UNIV 101</td>
</tr>
<tr>
<td>English Composition</td>
<td>6</td>
<td>ENGL 101 and 102</td>
</tr>
<tr>
<td>Introduction to Calculus</td>
<td>3 (4)</td>
<td>MATH 150 (or MATH 155 or MATH 153 &amp; MATH 154)</td>
</tr>
<tr>
<td>Principles of Microeconomics</td>
<td>3</td>
<td>ECON 201</td>
</tr>
<tr>
<td>General Biology</td>
<td>8</td>
<td>BIOL 115 and 117</td>
</tr>
<tr>
<td>General Chemistry</td>
<td>8</td>
<td>CHEM 115 and 116</td>
</tr>
<tr>
<td>Organic Chemistry</td>
<td>8</td>
<td>CHEM 233/235 and 234/236</td>
</tr>
<tr>
<td>Physics</td>
<td>8</td>
<td>PHYS 101 and 102</td>
</tr>
<tr>
<td>Introduction to Statistics</td>
<td>3</td>
<td>STAT 211 (or ECON 225)</td>
</tr>
<tr>
<td>General Microbiology</td>
<td>3 (4)</td>
<td>MBIM 200 (or ENVM 241)</td>
</tr>
<tr>
<td>Public Speaking</td>
<td>3</td>
<td>SPA 270</td>
</tr>
<tr>
<td>Electives*</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>66–68</td>
<td></td>
</tr>
</tbody>
</table>

*Electives must satisfy the University General Education Curriculum (GEC) requirements.
Admissions are competitive. Criteria used to evaluate candidates include academic performance, as measured by the grade point average for all previously noted pre-requisite courses and the cumulative grade point average achieved in all prior college-level coursework, Pharmacy College Admissions Test (PCAT) and essay scores, a personal interview, and recommendations from college faculty, advisor, pharmacist or other health care provider. PCAT tests must have been taken during or since the 2007–08 test cycle. All pre-requisite courses must be completed with a grade of C or better and must be completed by the end of the spring semester prior to the fall semester in which the applicant intends to matriculate. Priority is given to qualified West Virginia residents and applicants who have performed the majority of their pre-requisite coursework in a West Virginia college or university.

All applicants must first file an initial electronic application with the Pharmacy College Application Service (PharmCAS). Instructions for completing the application are found on the PharmCAS Website, http://www.PharmCAS.org. Supplemental applications specific to the West Virginia University School of Pharmacy will then be sent to candidates deemed qualified by the Committee on Admissions. Application deadlines are subject to change; please check the School of Pharmacy web page at http://www.hsc.wvu.edu/sop, PharmCAS, or contact the school to verify current deadlines. A $50 application fee must accompany the supplemental application.

Each applicant who is recommended for acceptance must make a deposit of $200 (if WV resident) or $400 (if a non-resident) before acceptance is official. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is refundable until May 1. Before enrollment in the School of Pharmacy, all students must initiate compliance with immunizations and diagnostic procedures required by the Board of Governors, WVU, the Robert C. Byrd Health Sciences Center, and the School of Pharmacy.

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take the test before submitting the application for admission. Information concerning time and place of the test can be obtained from a pre-pharmacy advisor, the School of Pharmacy, or by visiting the PCAT Website at http://www.pcatweb.info.

Interviews are held at the WVU Health Sciences Center in Morgantown and are scheduled during January, February, and March. Only applicants who are deemed by the Committee on Admissions to be competitive for consideration for acceptance will be offered an interview.

Three recommendations are required, although more may be submitted. At least two of these recommendations must be provided by course instructors in any two of the pre-pharmacy science areas: biology, chemistry, math, and physics. The third recommendation may be provided by a course instructor in any field of the student’s choice, an academic advisor, a pharmacist or another health care practitioner.

**Admission to Advanced Standing**

Students from other accredited schools of pharmacy may be admitted if space is available and they meet the pre-requisite course requirements of the WVU School of Pharmacy, have at least a 2.5 grade point average, and are in good academic and professional standing and eligible for continuation toward the degree in pharmacy at the school initially attended. Grades of D in professional courses will not be transferred.

For complete information concerning the curriculum and courses of instruction in the School of Pharmacy, see the **WVU Health Sciences Center Catalog**.
Special Programs

Undergraduate Certificate in Gerontology
WVU Center on Aging

The WVU Center on Aging is in process of transferring the undergraduate Certificate Program to the Division of Social Work within Eberly College of Arts and Sciences. As more information is available, it will be posted on both the Center on Aging website http://www.ruralaging.org and the Division of Social Work website http://socialwork.wvu.edu. Students can also call the Center on Aging at 304-293-2968 and ask to speak with Sherry Kuhl, assistant director for the Center on Aging, for more information.

Dual Degrees in Business and Foreign Languages

The coordinated dual degrees in business and foreign languages provide global opportunities to students seeking both a bachelor of arts with a major in foreign languages and a bachelor of science in business administration.

The B.S. degree in business administration is available in the following majors: accounting, business management, finance, and marketing.

The B.A. with a major in foreign languages is available in the following majors: French, German, Russian, and Spanish.

The program of study for the bachelor of science in business administration (B.S.B.Ad.) and the bachelor of arts in foreign language (B.A.) will vary according to the student’s particular major and option. Students normally can graduate with the required 158 credit hours within five years if they plan the program at the beginning of their freshman year. Note that the internship, if available, will be undertaken no earlier than the end of the fourth year of undergraduate study. Students not taking the internship must substitute appropriate coursework approved by the advisor.

Admission Requirements

Students with fewer than 58 hours, in addition to University admission requirements, must meet the following criteria if they plan to qualify for the two degrees:

• A minimum of two college semesters (or two years high school) of one foreign language.
• A minimum of three years of high school mathematics, including two years of algebra or the equivalent; students must qualify for MATH 124 or 126 at WVU.

Formal admission to the dual-degree program requires junior standing or higher and the following prerequisites:

• Completion of 58 credit hours.
• Completion of the intermediate course sequence in a foreign language.
• Attainment of a minimum cumulative grade point average of 3.0.
• Completion of the following courses with a grade of C or better: six hours of principles of economics, six hours of principles of accounting, three hours of college algebra, three hours of college calculus, three hours of statistics, four hours of computer science, six hours of advanced foreign language (103/104 or 109/110), and six hours of composition and rhetoric.
• Filing a formal application for admission to the program with the undergraduate advising center in the College of Business and Economics.

Note 1: The foregoing are minimum requirements. All students meeting the specific requirements are not guaranteed admission. Limitations on entry may be necessary depending upon the availability of faculty, space, and other resources.

Note 2: The exact requirements of the B.S.B.Ad. degree are those in effect when the student is formally admitted to the College of Business and Economics in the junior year.
Special Programs

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WVU Center on Aging

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Admission Requirements

Students with fewer than 58 hours, in addition to University admission requirements, must meet the following criteria if they plan to qualify for the two degrees:

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- Completion of the intermediate course sequence in a foreign language.
- Attainment of a minimum cumulative grade point average of 3.0.
- Completion of the following courses with a grade of C or better: six hours of principles of economics, six hours of principles of accounting, three hours of college algebra, three hours of college calculus, three hours of statistics, four hours of computer science, six hours of advanced foreign language (103/104 or 109/110), and six hours of composition and rhetoric.
- Filing a formal application for admission to the program with the undergraduate advising center in the College of Business and Economics.

Note 1: The foregoing are minimum requirements. All students meeting the specific requirements are not guaranteed admission. Limitations on entry may be necessary depending upon the availability of faculty, space, and other resources.

Note 2: The exact requirements of the B.S.B.Ad. degree are those in effect when the student is formally admitted to the College of Business and Economics in the junior year.
Degree Requirements

General requirements: University and college requirements, including MATH 126 or 153 with a grade of C or better*, PSYC 101, SOCA 101.

Required Business Core Courses:
Sophomore year: ACCT 201 and 202, ECON 201, 202, and 225
Junior/Senior year: BCOR 315, 320, 330, 340, 350, 360, 370, and 460

Required Major Core Courses:
(Varies by major; see major requirements under College of Business and Economics)
Foreign Language Requirements**:
LING 311
Foreign Language 301, 302, 303, 304
Foreign Language required culture course (FRCH 431 or 432) or (GER 341 or 441) or (SPAN 330 or 340)
Foreign Language required literature course (FRCH 331 or 332) or (GER 331 or 332) or (SPAN 331 or 332) or (SPAN 341 or 342)
Foreign Language required culture course (FRCH 431 or 432) or (GER 341 or 441) or (SPAN 331 or 332) or (SPAN 341 or 342)
Foreign Language capstone experience (PR: 21 hrs. of coursework in the foreign language major beyond the intermediate level (204 or the equivalent))
Internship (or substitution course work) (10–16 credits)

Minimum total hours for the degree: 158

*Although the College of Business and Economics requires Math 126 and 150, students are encouraged to substitute MATH 153/154 (or 155) and 156 for MATH 126 and 150 in preparation for graduate admission examinations.

**The 33 hours for the major may include up to six credit hours in the area of emphasis language at the 200 level, excluding FRCH/GER/SPAN 203–204 (or the equivalent). Students may, with consent of their department advisor, include three credit hours in an outside area of study, either within the Department of Foreign Languages or in another department; e.g., political science, history, geography, foreign cultures (FCLT), foreign literature in translation (FLIT). The outside course may be upper or lower division. No more than nine hours of lower-division coursework will be counted for the major.

Students completing a major in foreign languages at WVU must fulfill a residency requirement of 15 credit hours on campus in their language of study, excluding courses numbered 100, 101, 102, 200, 203, 204, 493, and courses obtained through credit by examination.

Students must achieve a minimum grade point average of 2.25, both overall and in the foreign language major, for graduation.

Internships

By the end of the fourth year of study, students may be selected for special business/foreign language internships available on a competitive basis. Internships may take the form of work with foreign or U.S.-based companies abroad, foreign-based businesses operating in the U.S., or may allow the student to work with regional U.S. firms having dealings with foreign businesses or governments. Students not selected for internships may substitute 10–15 hours of approved WVU coursework.

Coordination

The College of Business and Economics and the Department of Foreign Languages within the Eberly College of Arts and Sciences cooperate closely to facilitate the student’s program at all levels. Students will be assigned a special registration code which will allow them to pre-register for classes normally available only to students in business or only to those majoring in foreign languages.

Early Completion of Prerequisites

Mathematics: In order to meet all mathematics requirements in a timely fashion, freshmen who are pursuing the degrees are encouraged to take the math placement test early to determine if remedial study is necessary. The pre-college algebra workshop is available during both sessions of summer school. Students who need the workshop are encouraged to complete it prior to fall enrollment. Interested students should contact the Department of Mathematics in May of their senior year of high school.
Foreign language: Freshmen who have not yet completed two college semesters (or two years in high school) of one foreign language should be aware they may complete their foreign language prerequisites in the summer session before the start of the fall semester. French, German, and Spanish 100 and 200 may be taken in the summer. Credit is also available for semesters three and four through departmentally sponsored study abroad programs.

How to Apply for Admission
If entering from high school or transferring with fewer than 58 credits:
- Students should file a University admissions application with the WVU Office of Admissions and Records and stipulate pre-major code 1018.
- Upon admission to the University, students will be assigned an advisor in the Eberly Arts and Sciences Office of Undergraduate Advising and Student Records until they are formally admitted into the program.
Students with at least 58 hours who meet all requirements listed under formal admission requirements section may apply for formal admission to the dual-degree program, filing a formal application through the Eberly College of Arts and Sciences advising office. Upon admission, students will be assigned an advisor.

Contacts
If you have questions about the coordinated dual degrees in business and foreign languages, contact: Assistant Dean, College of Business and Economics, West Virginia University, Morgantown, WV 26506; telephone (304) 293-4959. Or contact: Assistant Dean, Eberly College of Arts and Sciences, 213 Woodburn Hall, West Virginia University, Morgantown, WV 26506; telephone (304) 293-4611.

Multidisciplinary Studies Courses
General Education Curriculum (GEC) courses analyze significant issues, problems, or themes by applying two or more disciplines to them; explore the theoretical and methodological relationship of two or more disciplines to each other; and involve a combination of disciplines so as to preclude their being classified realistically as one of humanities, social sciences, or physical sciences.
Responsibility for approving GEC courses rests with the Liberal Studies Program Committee and the Faculty Senate. Each course has its own staff, drawn from the faculties of the colleges and schools of the University. GEC courses may be credited to University LSP, as indicated.

Multidisciplinary Studies Degree Program
Evan Widders, Coordinator

Degree Offered
Bachelor of Arts (B.A.) and Bachelor of Multidisciplinary Studies (B.MdS.)
Major: Multidisciplinary Studies

This program is administered by the Eberly College of Arts and Sciences. A description of the program can be found at http://mds.wvu.edu/.

Oak Ridge Associated Universities
Since 1957, students and faculty of West Virginia University have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 99 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.
Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, as well as faculty enjoy...
access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the ORISE Catalog of Education and Training Programs, which is available at http://www.orau.gov/orise/educ.htm, or by calling either of the contacts below.

ORAU’s Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU’s members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scholars Program, consortium research funding initiatives, faculty research and support programs as well as services to chief research officers.

For more information about ORAU and its programs, contact: Richard A. Bajura, Director, National Research Center for Coal and Energy ORAU Councilor for West Virginia University. Monnie E. Champion ORAU Corporate Secretary (865-576-3306); or visit the ORAU Home Page (http://www.orau.org).

**ROTC**

**U.S. Air Force Aerospace Studies and U.S. Army Military Science**

WVU offers qualified applicants two to four-year courses of instruction in military science (Army ROTC), and aerospace studies (Air Force ROTC). Normally, successful completion of one of these courses and University degree requirements leads to a commission as a second lieutenant in the U.S. Army or the U.S. Air Force.

Equivalent credit for part or all of the four basic semesters of ROTC may be granted in accordance with existing military service regulations. This credit will be awarded on the basis of prior active military service, high school ROTC, military school (Army ROTC at high school level), attendance at service academies, junior college senior division Army ROTC, or Civil Air Patrol awards.

**General Education Curriculum (GEC)**

MILS 101, 102, 201, and 202 courses along with USAF 131, 132, 251, and 252 are under GEC 4—Issues of contemporary Society, GEC 6—The Individual in Society, and GEC 8—Western Culture.

**Leadership Studies Minor**

USAF 371, 372, 481, and 482 are available electives that will count toward a leadership studies minor.

**U.S. Air Force ROTC WVU Division of Aerospace Studies**

**Nature of Program**

The U.S. Air Force officer education program at WVU has been in existence since 1948 and is designed to provide training that will develop leadership, managerial, and interpersonal skills vital to the professional U.S. Air Force officer. Its purpose is to qualify you for commissioning in the U.S. Air Force. WVU has the only Air Force ROTC (AFROTC) detachment in West Virginia.
Scholarship Program
Outstanding students from any academic discipline may compete for scholarships under this program. A large number of scholarships are available for students majoring in engineering, scientific, mathematical, or nursing fields. If you win a scholarship, AFROTC will pay for tuition, fees, and required textbooks, as well as provide a tax-free monthly allowance between $250 and $400 based on academic year. Scholarships are available for two, three, and four years, depending on funding.

Uniform Wear and Deposits
Air Force ROTC students are required to wear a uniform to ROTC classes and leadership laboratories. Each air force ROTC student is issued a set of uniforms but is required to pay a uniform deposit of $50, which will be refunded upon the return of undamaged and freshly cleaned uniforms. Air Force ROTC cadets may purchase their uniforms upon successful completion of the ROTC program.

Benefits
Enrolling in AFROTC provides the opportunity to:
• Compete for entry into the Professional Officer Course (POC) and earn an air force commission.
• Earn academic elective credit which can be applied toward the requirements for any undergraduate major at WVU.
• Compete for AFROTC scholarships that pay full tuition, fees, and required textbooks, and provide a tax-free monthly stipend between $250 and $400 based on academic year.
• Receive free career counseling from full-time AFROTC representatives.
• Go on field trips to air force installations in the United States.
• Try AFROTC during freshman and sophomore years without obligation (unless you accept an AFROTC scholarship).
• Develop leadership and managerial skills.
• Travel, on a space available basis, aboard government aircraft (POC and scholarship cadets only).

Distinguished AFROTC Graduate
The professor of aerospace studies may designate as a distinguished graduate a POC member who:
• Demonstrates superior academic and field training performance.
• Possesses outstanding qualities of leadership and high moral character.
• Demonstrates clearly exceptional leadership in recognized activities.

U.S. Air Force Academy
The president of WVU may annually nominate five outstanding AFROTC students to the U.S. Air Force Academy. Applicants are recommended by the professor of aerospace studies to the WVU president during January of each year.

Curriculum
The curriculum in aerospace studies is divided into three distinct areas: leadership laboratory, general military course (GMC), and professional officer course (POC).

Leadership Laboratory
Leadership laboratory takes an average of two hours per week throughout the student’s enrollment in AFROTC. Instruction is conducted in an organized cadet corps with a progression of experiences designed to develop each student’s leadership potential. Leadership laboratory involves a study of air force customs and courtesies, drill and ceremonies, physical fitness, career opportunities, and the life and work of an air force junior officer. Students develop leadership potential in a practical, supervised training laboratory, which typically includes field trips to air force installations.
General Military Course (GMC)

The U.S. Air Force course of study offered during the freshman and sophomore years is the General Military Course (GMC). This is composed of one class hour and two leadership laboratory hours per week. Two credit hours are awarded for each semester course successfully completed. General military courses are open to all WVU students who:

- Are a United States citizen (to receive a scholarship).
- Are in good physical condition.
- Have good moral character.
- Be at least 14 years old (17 to receive a scholarship).

Professional Officer Course (POC)

The professional officer course (POC) corresponds to the junior and senior years of your academic program. Graduate students may also enroll in the POC if they have four semesters of school remaining. The POC is designed to provide highly qualified junior officers for the U.S. Air Force. Admission is based on such factors as leadership, scholarship, physical qualifications, and academic major. Successful completion of the POC qualifies you for appointment as a second lieutenant in the air force upon college graduation. Instruction averages three hours per week throughout the four semesters, plus leadership laboratory. Three hours of credit are awarded for each of the four semesters of work in the POC program. To qualify for the POC, you must meet all the qualifications for the GMC and:

- Have two academic years remaining (undergraduate, graduate, or a combination of both).
- Be a United States citizen.
- Be 18 years old, or 17 with a parent or legal guardian’s consent.
- Be physically qualified.
- Pass the Air Force Officer Qualifying Test.
- Be selected by a board of U.S. Air Force officers.
- Complete a four- or six-week field training course, depending on GMC participation or GMC credit.
- Complete all graduation and commissioning requirements as follows: scholarship recipients before age 31 as of December 30 of the year you plan to be commissioned (typically the year you graduate), pilot or navigator candidates before age 29, non-flying, non-scholarship students before age 35.

U.S. Army ROTC

WVU Division of Military Science

Nature of the Program

The curriculum includes skills expected of a U.S. Army officer including how to motivate coworkers, cope with unexpected challenges, organize large, complex tasks, and an introduction to the army’s values-based leadership techniques. Additionally, students learn skills in demand today in the civilian and business worlds such as teamwork, tact, and effective communications. There are two- and four-year ROTC programs. The traditional four-year program is composed of the basic course and the advanced course.

The Basic Course

The first two years compose the basic course. This includes MILS 101,102, 201, and 202, and includes classroom studies in such subjects as military history, leadership development, and national defense. Students can enroll in the program for the first two years without incurring any future military obligation. However, students that desire to make a commitment to obtain a U.S. Army Commission at graduation can commit as early as their sophomore year and would receive a tax-free monthly stipend of $350 per month. After successful completion of the basic course, students can apply for admission into the advanced course.
The Advanced Course
After successful completion of the basic course, students wishing to actively seek a commission as an officer in the U.S. Army must enter into the advanced course. It is required of all students who have received an ROTC scholarship. Classes required are MILS 301, 302, 401, and 402, a weekly leadership lab, and an approved military history course. During this part of the program, students will put their management and leadership skills to the test while continuing to hone the traits required for commissioning into the U.S. Army. As a cadet in the advanced course, you will spend five weeks (32 days) of the summer between your junior and senior years attending the Leadership Development and Assessment Course at Fort Lewis, Washington. At this course, students receive intensive training in tactics, physical fitness, land navigation, obstacle course, and rappelling. They also have the opportunity to lead other cadets through challenging missions.

While enrolled in the program, ROTC textbooks, uniforms, and essential materials are furnished at no cost. Additionally, advanced course students receive a tax-free monthly stipend allowance of $450 per month as a junior and $500 per month as a senior during the school year.

Leadership Laboratory
Leadership laboratory is conducted two hours per week every Thursday afternoon throughout the student’s enrollment in Army ROTC. Instruction is conducted in an organized cadet corps with a progression of experiences designed to develop each student’s leadership potential. Leadership laboratory involves practical application of field craft, drill and ceremonies, physical fitness, rappelling, rifle marksmanship, and career opportunities.

Military Science Minor
Students enrolled in the Army ROTC program may receive a military science minor by completing the advanced course (MS 301, 302, 401, and 402) and the required military history course. A minimum cumulative GPA of 2.0 is required in these courses.

The Two-Year Program
(Sophomores, Junior College Transfers, and Partnership Schools)
If students miss the first two years of Army ROTC, the two-year program offers the opportunity to achieve the same goals and benefits as the four-year program but at an accelerated pace. This is designed for sophomores who were unable to take the basic course, students transferring after attending a junior college or another institution, or for students attending one of our partnership schools. In this program, students first attend the Army ROTC basic Leader's Training Course (LTC) at Fort Knox, Kentucky, in the summer between their sophomore and junior years. This is a fully paid (over $700 plus room, board, and transportation), four-week training camp designed to be an accelerated version of the two years of leadership development training cadets receive during their first two years of Army ROTC. The course is broken into four phases where cadets begin physical training, drill and ceremonies, team development, combat water survival, and land navigation. Upon graduation from LTC students may compete for two-year scholarships. Students must have a minimum of 53 hours of college credit with a 2.0 GPA (2.5 to compete for a scholarship). Those cadets who successfully complete LTC and contract may be eligible to receive a $5,000.00 incentive bonus.

Additionally, if a student is currently in the national guard (army or air force), U.S. Army Reserve, a veteran from any service, has two years of Senior ROTC (SROTC) experience from another service, or has high school junior ROTC (JROTC) experience of three years or more, he or she may qualify for entry into the advanced course under the two-year program. Students must have a minimum of 53 hours of college credit with a 2.0 (or better) GPA.
Simultaneous Membership Program (SMP)

Students currently in the Army National Guard or U.S. Army Reserve can participate in the advanced course as an SMP cadet. Benefits of the SMP include immediate promotion to sergeant (E5) for pay purposes in their current unit, receipt of any Montgomery G.I. Bill kicker, $350 to $500 monthly tax-free stipend, and any tuition assistance offered by the service. Currently the West Virginia National Guard pays 100 percent of in-state or out-of-state tuition for either undergraduate or graduate studies. The U.S. Army Reserves offers loan repayment and 75 percent tuition assistance.

Information on these programs may be obtained through the Professor of Military Science (PMS) at (304) 293-2911 x 33135. For a detailed overview of Army ROTC, students can call 1-800-USA-ROTC or view online at http://www.goarmy.com/rotc.

Judge Advocate General (JAG) Programs

The JAG Corps is the oldest “law firm” in the U.S., dating back to 1775. There are approximately 1,500 active duty (full-time) attorneys and 2,600 reserve and national guard (part-time) attorneys. Students in the advanced course should take the LSAT prior to the fall of their senior year. They must then request an educational delay and branch JAG. If accepted to the law school of the student’s choice, the educational delay may be granted. While in law school, students may apply for one of 100 summer internships offered by the JAG Corps.

Graduate Medical Programs

The army offers a variety of graduate programs to ROTC graduates. These include specialties in nursing, dentistry, medicine, psychology, optometry, and veterinary medicine. Interested students must apply for educational delay following graduation and commissioning.

ROTC Scholarship Program

In addition to world-class leadership training, Army ROTC also offers generous scholarships to qualified students. These scholarships are based solely on the student’s merits, not financial needs. These merit-based scholarships are available for two, two-and-a-half, three, three-and-a-half, and four years and are available for both graduate and undergraduate programs. These scholarships pay full tuition and fees each year. They also provide $600 per semester for books and include a $300 to $500 per month tax-free stipend, for up to ten months a year (during the academic school year). Four-year scholarships are normally reserved for applicants who are high school seniors. The application process starts by applying online at http://www.goarmy.com/rotc or by calling 1-800-USA-ROTC to receive an application by mail. The remaining scholarships are considered campus-based scholarships given at the discretion of the professor of military science.

Students must meet the following requirements for a four-year Army ROTC scholarship:

1. Be a citizen of the United States.
2. Be between the ages of 17 and 26.
3. Have a high school cumulative grade point average of at least 2.5.
4. Score a minimum of 920 on the SAT (math/verbal) or 19 on the ACT (excluding the required writing test scores).
5. Meet the physical standards.
7. Exhibit a strong desire to become an army officer.
8. Possess leadership potential to become an effective leader. These include appearance, personality, academic excellence, extracurricular activities, and physical fitness.
9. Be medically qualified by passing a Department of Defense Medical Evaluation Board health physical and eye exam.
10. Must be eligible for a secret security clearance.
Students must meet the following requirements for a three-and-a-half, three, two-and-a-half and two year scholarships:
1. Be a citizen of the United States.
2. Be between the ages of 17 and 27.
3. Have a college grade point average of at least 2.5.
4. Have a high school diploma or equivalent.
5. Meet the physical standards.
7. Exhibit a strong desire to become an army officer.
8. Possess leadership potential to become an effective leader. These include appearance, personality, academic excellence, extracurricular activities, and physical fitness.
9. Be medically qualified by passing a Department of Defense Medical Evaluation Board health physical and eye exam.
10. Must be eligible for a secret security clearance.

**Army ROTC Nursing Program**

Being an army nurse is one of the most rewarding careers imaginable. Army nurses are officers—and as such are highly respected professionals. They have the opportunity to assume leadership positions in a hospital setting far more quickly than those working in the private sector. They also have the personal satisfaction of caring for the men and women who defend our freedom.

The Army ROTC program offers some unique hands-on opportunities for nursing students that are not available anywhere else. With the Nurse Summer Training Program (NSTP), Army ROTC nurse cadets have the opportunity for a paid, three-week assignment to army hospitals throughout the United States and Germany. While participating in the program, cadets are introduced to the Army Medical Department (AMEDD) and to the roles and responsibilities of an army nurse corps officer. Cadets gain hands-on experience, under the guidance of an experienced army nurse, allowing them to hone their clinical skills and become comfortable with developing their professional skills as a member of the U.S. Army Healthcare Team. For more information go online to http://www.goarmy.com/rotc/nurse_program.jsp.

**Army ROTC Nursing Scholarships**

Army ROTC offers qualified undergraduate nursing students two, three, and four year scholarships. These scholarships are merit-based and are awarded to those who possess a strong record of academic achievement and who demonstrate that they have the potential to become leaders. These scholarships defray the full cost of tuition and provide a tax-free allowance for books and necessary materials. Additionally, those awarded an Army ROTC nursing scholarship are eligible to receive a tax-free stipend up to $500 per month, to help defray living expenses, for up to ten months of the academic year. The scholarships would pay full in-state or out-of-state tuition and fees. There will also be incentive items given during their junior and senior years. The nursing scholarship will also cover the cost of the NCLEX review course as well as the cost of the NCLEX test.

**General Education Curriculum (GEC)**

MILS 101, 102, 201, and 202 courses are under GEC 4—Issues of contemporary Society and GEC 6—The Individual in Society.

**Additional Opportunities**

Students enrolled in the Army ROTC program can participate in numerous fully funded military training opportunities during their summer breaks. These opportunities include, but are not limited to, Airborne School, Air Assault School, Mountain Warfare School, Pentagon Internship Program, and the Nurse Summer Training Program. There are also opportunities to study abroad through numerous fellowship programs.
Studying the Environment at West Virginia University

Environmental issues occupy a high priority with the people of the world. Clean air, clean water, solid waste management, endangered species, land use policy, and toxic substance control are just some of the environmental issues that are of concern to people across the globe.

That’s why West Virginia University offers programs in a wide variety of disciplines that focus on the environment: to learn how to make best use of our natural resources while protecting our fragile ecosystem for future generations.

Agricultural and Environmental Education

This program in the Davis College of Agriculture, Forestry, and Consumer Sciences emphasizes communication and leadership skills. Training in natural resource management is increasingly important as land in agricultural use now provides the majority of open spaces in industrialized countries. Areas of emphasis include leadership, communication, agricultural and environmental technology, extension education, and teacher certification. The program prepares students for careers in private and public employment.

Chemical Engineering

Students in this program of the College of Engineering and Mineral Resources learn to identify, analyze, and reduce health, safety, and environmental risks in chemical processes. They design projects which involve inherently safe design, pollution prevention, and life-cycle analysis techniques. Elective courses in health, safety, and environment are offered, and students have worked on senior thesis projects in collaboration with the National Institute for Occupational Safety and Health (NIOSH), the United States Department of Energy, and other agencies. Graduates have obtained employment in government and industry in environmental engineering.

Civil and Environmental Engineering

This program of the College of Engineering and Mineral Resources offers a series of environmental engineering courses as electives for students who are interested in specializing in environmental engineering. Students who select and finish a sequence of technical electives during the junior and senior years will be granted a degree with emphasis on environmental engineering. Students with the specialty in environmental engineering have comprehensive knowledge of air and water qualities and characteristics of pollutants in physical, chemical, and biological aspects. They are equipped with both fundamental theories and updated technologies.

Environmental Biology

An area of emphasis within the biology degree, this program of the Eberly College of Arts and Sciences firmly grounds students in the fundamentals of biology. Advanced-level courses in ecological and organismal biology give the student a rigorous background in modern biological studies of the environment, from the molecular to the global level. Students with this background are prepared for employment in all levels of government and private industry as well as for advanced study in master’s and doctoral programs.

Environmental Chemistry

This course of study in the Eberly College of Arts and Sciences offers interdisciplinary training in chemical, biological, and engineering sciences. Because graduates have the background necessitated by the chemistry degree program, they are ideally suited to study the nature, reactions, transport, and fates of chemical species in the environment (air, water, and soil) and are employed by municipal, state, and federal agencies as well as environmental consulting firms. Graduates are also prepared to continue their studies in graduate programs in the environmental and health sciences.
Environmental Geoscience

The program housed in the Department of Geology and Geography of the Eberly College of Arts and Sciences prepares students for careers involving environmental issues that affect our present and future quality of life. The broad nature of the curriculum reflects the diversity of environmental problems and the increased demands placed on modern environmental scientists to recognize and understand the sources and impacts of environmental pollution. The curriculum educates geoscientists to identify and remediate environmental problems, to compile and analyze environmental data, to understand the regulatory aspects of environmental protection, and to communicate both with the wide range of professional disciplines for whom the environment is of special concern and with the public in general.

Environmental and Natural Resources Economics

Offered by the Davis College of Agriculture, Forestry, and Consumer Sciences, this is an applied economics program. The focus of the program is on environmental and natural resource economics and policy. The major prepares students for careers at all levels of government and in private industry. A special feature of the program is the opportunity to explore the interdisciplinary nature of environmental programs and linkages between natural resources and economic development issues.

Environmental Protection

This interdisciplinary program of the Davis College of Agriculture, Forestry, and Consumer Sciences includes broad interdisciplinary training in the basic and environmental sciences concentrating on two areas of specialization: plant protection or soil and water protection. The program prepares students for careers which safeguard and quality of the environment. Graduates are employed by municipal, state, and federal government agencies, environmental consulting firms specializing in land reclamation and water quality, and companies associated with the gas, oil, and coal industries.

Environmental Studies

A track in the political science program of the Eberly College of Arts and Sciences, environmental studies offers a specialized curriculum blending coursework in political science, the policy sciences, and the natural sciences. Students entering this field may work in either the public or private sector as policy analysts, lobbyists, natural resource managers, or public affairs specialists. Students might also consider this track as a first step towards more advanced training after the bachelor’s degree.

Forest Resources Management

This program in the Davis College of Agriculture, Forestry, and Consumer Sciences deals with the management of the forest to produce goods and services obtained from the land and trees. The program prepares students for careers with forest industries, the government, and others concerned with the value of forest ecosystems. The program is accredited by the Society of American Foresters.

Recreation, Parks, and Tourism Resources

This program in the Davis College of Agriculture, Forestry, and Consumer Sciences prepares students for increasing responsibilities in public agencies (park service, forest service, state park systems, etc.) and in the commercial sector (tourist attractions). The natural resources recreation option focuses on outdoor recreation, and the leisure services delivery option prepares students for general entry into the parks and recreation career field. The program is accredited by the National Recreation and Park Association.

Wildlife and Fisheries Management

This program in the Davis College of Agriculture, Forestry, and Consumer Sciences prepares students for many careers, such as wildlife and fish biology, wildlife and fish management, consulting, and planning of wildlife and fisheries programs. Available options focus on communications, fisheries science, planning, wildlife management, and wildlife sciences.
University Honors Program
http://www.honors.wvu.edu

The mission of the Honors College is to provide enriched educational opportunities for gifted, promising, and motivated undergraduate students through special courses, special programs, honors orientation, and personalized academic advising with faculty members. Honors College students benefit from the living and learning community of the Honors Residence Hall, the support and assistance from the honors office staff, an honors-specific orientation advising session, and priority registration for classes.

Honors College Requirements
students must have a score of 28 ACT or 1240 SAT, with a 3.8 GPA or 31 ACT or 1360 SAT, with a 3.5 GPA or National Merit Semifinalist, with a 3.5 GPA or designated WVU Presidential Scholar.

Current WVU students may participate if they have a 3.7 GPA after completing fourteen to thirty four hours of course work, with no withdrawals or incompletes.

If you would like more information, please contact the Honors Office. Students may also visit the Honors website listed above.

WVU Extension Service
http://www.ext.wvu.edu

Real-world learning and outreach experiences abound for undergraduate and graduate students who intern with the WVU Extension Service (WVU-ES). Part of an educational network of 105 land-grant universities, WVU-ES takes the helping hand of West Virginia University directly to thousands of West Virginians in communities scattered across the state. Through its Extension Service, the University provides a “mini-campus” in each of the state’s 55 counties. The work at these locations addresses a wide variety of community issues via a nontraditional mix of learners, faculty, staff, and volunteers.

Drawing on the strengths of WVU’s many academic disciplines, Extension educators target social, economic, environmental, and technical problems of communities. Some Extension educators work on WVU’s traditional campuses located in Morgantown, but many of the faculty work in county settings, generally located in or near each county’s government seat. Working daily with local residents, Extension faculty find their lives often intertwine with the issues that confront their local communities. They are committed to helping people find answers that work. As they solve problems along with local citizens—individually and in groups—Extension faculty and staff translate WVU’s research into action.

When graduate and undergraduate students take part in this action, they find the WVU Extension Service to be a fertile, flexible provider of a variety of internship, work-study, and volunteer experiences. Extension educators may involve students in some or in all phases of their educational projects—research, design, delivery, and evaluation. Depending on the project, students may have hands-on experience with computer networks, distance education, publication design and production, curriculum design and development, and classroom teaching.

Extension’s many programs are driven by just four major initiatives: 4-H youth development, families and health, agriculture and natural resources, and community, economic, and workforce development. Extension’s program delivery, however, has roots in many career fields, including agriculture, business administration, child development, computer science, communications, environmental science, engineering, counseling and guidance, curriculum design, health education, home economics, journalism, and safety. Regardless of their academic disciplines, today’s students may find rich learning experiences—and rewarding careers—among Extension’s diverse educational programs. Examples include:
Courses

Plan for Numbering Courses

For convenience, each course of study is designated by the name of the department in which it is given and by the number of that course. The plan for numbering courses is as follows:

Courses 1–99 Developmental and community college certificate courses (does not require WVU Faculty Senate approval) and undergraduate professional development courses (courses that are designed for professional development and require students to possess a high school diploma but the course would not count toward graduation).

Courses 100 Freshman/Lower Division: Intended primarily for freshmen although they may be taken by upper-division students if needed to complete degree requirements.

Courses 200 Sophomore/Lower Division: Intended primarily for sophomores. These courses may have 100 or 200-level prerequisites.

Courses 300 Juniors/Upper Division: Intended primarily for juniors. These courses may have extensive prerequisites or be limited to specific majors.

Courses 400 Seniors/Upper Division: Intended primarily for seniors and selected graduate students. These courses are typically limited to advance undergraduates within a particular major or degree program and selected graduate students. No more than 40 percent of the credits counted for meeting requirements for a graduate degree can be at the 400 level.

Courses 500 Undergraduate Seniors and Master’s Level: Courses intended for advanced undergraduate and graduate students. Seniors may enter via petition/special permission. Undergraduates in any class carrying a 500-level course number must have a 3.0 cumulative grade-point average and written approval on special forms from the course instructor and the student’s advisor(s).

Courses 600 Master’s Level: Courses intended for master’s degree students (no undergraduate enrollment permitted).

Courses 700 Master’s and Doctoral Degree Level: Courses intended for doctoral students, and advanced master’s students (no undergraduate enrollment permitted).

Courses 900 Professional Development: Courses intended for professional development and require students to possess a bachelor’s degree, but the courses do not count toward graduation and are not applicable towards a graduate degree. Grading is S/U only.

Abbreviations Used in Course Listings

I a course given in the first (fall) semester
II a course given in the second (spring) semester
I, II a course given each semester
I and II a course given throughout the year
Yr a course continued through two semesters
S a course given in the summer
Hr credit hours per course
lec lecture period
rec recitation period
lab laboratory period
Conc concurrent registration required
PR prerequisite
Coreq corequisite
consent consent of instructor required
CR credit but no grade

An asterisk (*) following credit hours listed as variable indicates that the course normally carries three credit hours. Exceptions are made only in emergencies and must be approved by the departmental chair and by the professor teaching the course.
### Undergraduate Common Course Numbers

199. *Orientation to [subject/field]*. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.


490. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience*. I, II, S. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study*. I, II, S. 1-3 Hr. Directed study, reading, and or research.


494. *Seminar*. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study*. I, II, S. 1-6 Hr. Faculty-supervised study of topics not available through regular course offerings.


498. *Honors*. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.
Animal and Veterinary Science (A&VS)

A&VS 105. Professional Orientation. 2 Hr. PR: Freshman standing or consent. Orientation to WVU and the academic programs in the Division of Animal and Veterinary Sciences; related career and professional opportunities. Field trips required.

A&VS 114. Livestock Feeding. 3 Hr. Feeding of farm animals with emphasis on beef cattle, sheep and swine; includes basic principles, feeding standards, computation of rations, and the composition and nutritive value of livestock feeds. Designed for agriculture applied science students.

A&VS 115. Animal Health. 2 Hr. Practical methods of sanitation in disease prevention. The causes, symptoms, and current treatments as they pertain to common diseases of livestock. Prevention rather than major treatment will be emphasized. Designed for agriculture applied science students.

A&VS 150. Introduction to Animal Science. 2 Hr. Survey of major disciplines in animal and veterinary sciences with emphasis on related terminology; study of the development of breeds of livestock and their identification.

A&VS 180A. Assigned Topics. 1-4 Hr. per semester. To be eligible to register in A&VS 180, the student must: (1) be in good standing, (2) obtain approval of the instructor supervising the topics, and (3) obtain approval from the instructor assigned the course responsibility.

A&VS 199. Orientation to Biochemistry. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

A&VS 251. Principles of Animal Science. 4 Hr. A comparative study of the production of meat, milk, eggs and wool. Nutrition, physiology genetics, hygiene and physical environment, and economics are discussed as bases for sound managerial decisions. (1 hr. lab.)

A&VS 275. Companion Animal Science. 3 Hr. Basic physiology, nutrition and genetics; economic and ethical consideration of pet ownership; benefits of companion animals in society; aspects of handling and training, behavior, and common health diseases and parasite problems of pet animals.

A&VS 276. Service Dog Training. 3 Hr. Application of current principles, theory, and practices for training service dogs.

A&VS 281. Equine Management and Training. 3 Hr. Introduction to equine management and methods of training. Topics include handling, behavior, breeds, disciplines, tack clipping, grooming, soundness, basic training, and an introduction to the horse industry. Short field trip will be required.

A&VS 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

A&VS 343. Equine Hoof and Limb. 3 Hr. Students in this course gain in-depth knowledge of the anatomy and physiology of the equine hoof and limb. Students will study tendons, ligaments, bones, soundness, hoof structure, shoeing principles, laminitis, and navicular disease.

A&VS 402. Values and Ethics. 3 Hr. PR: Senior standing or Consent. Current ethical aspects in agriculture and forestry and their impact on societal values.

A&VS 404. Career Development. 1 Hr. Identification of career opportunities and preparation of employment applications. Development of personal skills for interviewing for employment.


A&VS 411. Dairy Heifer Management. 3 Hr. PR: Junior standing. ANNU 260. Application of current management practices for raising dairy calves from birth through establishment of pregnancy.

A&VS 412. Lambing Management. 1 Hr. PR: Junior standing. ANNU 260. Application of current management practices for lambing ewes and lamb management from birth through first months of life.

A&VS 413. Camelid Physiology and Management. 3 Hr. PR: Junior standing. ANNU 260. Application of current management practices for alpaca management.

A&VS 435. Marketing Registered Livestock. 3 Hr. PR: Junior standing or consent. Application of strategies for marketing animals in the registered livestock industry in West Virginia and the surrounding states.


A&VS 480 A-Z. Assigned Topics. 1-4 Hr. To be eligible to register in A&VS 480, the student must: (1) be in good standing, (2) obtain approval of the instructor supervising the topic, and (3) obtain approval from the instructor assigned the course responsibility.
A&VS 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

A&VS 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


A&VS 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

A&VS 496. Senior Thesis. 1-3 Hr. PR: Consent.

A&VS 497. Research. 1-6 Hr. Independent research projects.

A&VS 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Accounting (ACCT)**

ACCT 201. Principles of Accounting. 3 Hr. PR: Sophomore standing. The accounting cycle from the analysis of business transactions through the preparation of financial statements; basic theory and practice with respect to accounting for assets and equities.

ACCT 202. Principles of Accounting. 3 Hr. PR: ACCT 201. Utilization of accounting information for purposes of managerial control and decision making; cost concepts, profit and financial budgeting, analysis of financial statements.

ACCT 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ACCT 311. Intermediate Accounting. 3 Hr. PR: (ACCT 201 with a grade of “B” or better) and (ACCT 202 with grade of “B” or better) and ECON 202 and ECON 225 and ENGL 102 and (MATH 150 or MATH 155) and PR or CONC: ACCT 321. Development of accounting theory and practice, with emphasis on asset accounting.

ACCT 312. Intermediate Accounting. 3 Hr. PR: ACCT 321 and (ACCT 311 with grade of “C” or better). Theory and practice with respect to accounting for liabilities and stockholder’s equity; special problems peculiar to financial accounting; analysis of financial statements and changes in financial position.

ACCT 321. Introduction to Accounting Systems. 3 Hr. PR: ACCT 202 and admission to the College of B&E. Accounting software for record keeping, financial analysis, and accounting policy evaluation, with emphasis on the accounting cycle.

ACCT 322. Accounting Systems. 3 Hr. PR: ACCT 321 and BCOR 320. Analysis of data processing fundamentals and information systems analysis, design, and implementation, including necessary computer hardware and software components with particular reference to accounting information systems and the controls necessary there in.

ACCT 331. Managerial Accounting. 3 Hr. (No credit available to students having credit for ACCT 431). PR: ACCT 202 and ECON 202 and ECON 225 and ENGL 102 and (MATH 150 or MATH 155). For non-accounting majors. Analysis of internal accounting practices with emphasis on use of data for performance evaluation, control, motivation through accounting systems, and decision-making.

ACCT 405. Accounting Concepts and Techniques. 2 Hr. PR: Consent. (Course primarily for graduate students in industrial and labor relations.) Basic accounting concepts and techniques for decision making. Emphasis on the interpretation and analysis of financial statements and internal accounting reports.

ACCT 415. Advanced Accounting. 3 Hr. PR: ACCT 312. Accounting for business combinations, consolidations, foreign currency translation, governmental and not-for-profit entities, and equity method investment accounting.

ACCT 416. Advanced Accounting Theory. 3 Hr. PR: ACCT 312, and consent. Critical analysis of accounting concepts and standards with emphasis on their origin, development, and significance.

ACCT 417. Advanced Accounting Problems. 3 Hr.

ACCT 424. E-Commerce Accounting Issues. 3 Hr. PR: ACCT 322 or consent. Impact of electronic commerce on existing accounting and business practices, including electronic payment systems, supply chain management, legal and regulatory issues (including international aspects), and related accounting and auditing issues.

ACCT 431. Cost Management. 3 Hr. PR: ACCT 202. Strategic cost management concepts and techniques used for decision making, control, and product and service costing.
ACCT 432. Advanced Cost Management. 3 Hr. PR: ACCT 431 or consent. Advanced cost management concepts and techniques with emphasis on cost measurement systems and the evaluation and management of performance.

ACCT 433. Advanced Managerial Accounting. 3 Hr. PR: ACCT 331 or ACCT 431.

ACCT 441. Income Tax Accounting. 3 Hr. PR: ACCT 311 or ACCT 331. Overview and survey of Federal income tax principles for individuals and simple corporations with emphasis on gross income, exemptions, and deductions, capital gains and losses, and tax credits.

ACCT 442. Income Tax Accounting. 3 Hr. PR: ACCT 441. The study of federal income tax treatment of partnerships, corporations and estates, and the treatment of those property transfers subject to the Federal Gift Tax, together with an introduction to tax research and tax procedure.


ACCT 452. Auditing Practice. 3 Hr. PR or CONC: ACCT 451.

ACCT 461. Accounting for Nonbusiness Entities. 3 Hr. PR: ACCT 312. Accounting, reporting, and budgeting for governmental and not-for-profit entities and the use of fund accounting data for planning and control.

ACCT 471. International Accounting. 3 Hr. PR: ACCT 312 or consent. Financial reporting from an international perspective, focusing on the flow of information in multiple currencies, differences in financial reporting requirements, development of international accounting standards, and related issues facing multinational enterprises and global financial markets.

ACCT 473. Personal Financial Advising. 3 Hr. PR: ACCT 312. Develops a life financial plan for students. Topical coverage includes self-assessment of financial planning acumen, cash/credit management, insurance coverage, investing components, tax planning, retirement/estate planning and special circumstance planning.

ACCT 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ACCT 491. Professional Field Experience. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ACCT 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Special topics relevant to accounting. (Maximum of 9 semester hours in any or all courses numbered 493 offered by the College of Business and Economics may be applied toward bachelor's and master's degrees.)

ACCT 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ACCT 495. Independent Study. 1-6 Hr. PR: Consent. Students will develop and complete a program of specialized studies under the supervision of a cooperating instructor. This program may not include credit for internship or employment experience.

ACCT 496. Senior Thesis. 1-3 Hr. PR: Consent.

ACCT 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Athletic Coaching Education (ACE)**

ACE 100. The Total Athlete. 3 Hr. In-depth analysis of topics associated with being an athlete, i.e., attitude, academics, media, peer pressure, racism in sports, recruiting, AIDS, rape, stress/time management, suicide, sportsmanship, ethics, drugs (types and testing), agents, coping with adversity, eating disorders, gambling, life after sports, non-revenue sports, pro sports, violence in sports, gender equity, and personal growth.

ACE 101. Wrestling Methods. 3 Hr. An in-depth look at the various methods and weight categories of wrestling.

ACE 102. Coaching Education. 3 Hr. An in-depth look into the various aspects of coaching education.

ACE 103. Coaching Special Olympics. 3 Hr. An in-depth look into the techniques and methods used in coaching special olympics.

ACE 104. CPR/First Aid for Coaches. 3 Hr. Certification and practicum for CPR and first aid for all coaches.

ACE 105. Nutrition for Coaches. 3 Hr. General nutrition and dietary requirements to aid coaches and their athletes.

ACE 106. Introduction to Physical Education. 3 Hr. A general overview into the teaching/methodologies, etc. in a physical education/coaching education environment.
ACE 107. Coaching Education Administration. 3 Hr. This course examines the fundamental areas necessary to be knowledgeable about administering athletic programs.

ACE 168. Sport Officiating. 2 Hr. Study of officiating.

ACE 256. Principles and Problems of Coaching. 3 Hr. Designed to teach students the principles and problems of interscholastic athletic coaching.

ACE 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ACE 330. Coaching Education Administration. 3 Hr. An administrative focus of leadership, finance, fundraising, planning, facility development, personnel supervision, public relations, rules and regulations, purchase and care of equipment and the conducting of athletic events.

ACE 357. Techniques of Coaching: Swimming. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 358. Techniques of Coaching: Women's Gymnastics. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 359. Techniques of Coaching: Track. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 360. Techniques of Coaching: Wrestling. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 361. Techniques of Coaching: Soccer. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 362. Techniques of Coaching: Basketball. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 363. Techniques of Coaching: Women’s Basketball. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 364. Techniques of Coaching: Football. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 365. Techniques of Coaching: Baseball. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 366. Techniques of Coaching: Volleyball. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 367. Theories of Coaching Football. 2 Hr. Designed to give students insights into the theories and practices involved in coaching football.

ACE 368. Sport Movement Analysis. 3 Hr. This course is designed to introduce a prospective coach to the principles of human movement.

ACE 389. Intro Adventure Sports. 1 Hr. This course provides a comprehensive introduction to the field of adventure sports including its history, career opportunities, and common competencies needed to succeed in the industry.


ACE 451. Plan/Risk Management for Adventure Sport. 3 Hr. The objective of this course is to provide students with a thorough introduction to the process of planning safe, fun, meaningful outdoor adventure programs.

ACE 452. Outdoor Leader/Group Dynamics. 3 Hr. The objective of this course is to guide students as they explore the concepts of leadership and group dynamics as they pertain to working with groups in outdoor adventure settings.

ACE 454. Advanced Sport Instruction Techniques. 3 Hr. The objective of this course is to provide students with a thorough overview of the skills and knowledge needed to effectively instruct participants of outdoor adventure activities.

ACE 455. Adventure Sports Internship. 2-6 Hr. The goal of this course is to provide students with a supervised professional experience within an adventure sports environment under the direction of a supervisor at that site.

ACE 460. Fitness Management. 3 Hr. Provide content knowledge and practical experiences in health and fitness facility management and operation. ACE certification exam prep.
ACE 462. Fitness Field Testing. 3 Hr. Provide content knowledge and practical experience concerned with health screening, fitness testing, assessment and evaluation. Content needed for ACE national certification exam.

ACE 464. Lifestyle and Weight Management. 3 Hr. Provide content knowledge and practical experience in basic nutrition, behavior change, exercise, and health psychology. ACE certification exam prep.

ACE 470. Methods of Aerobic Instruction. 3 Hr. PR: ACE 460 and ACE 462. Provide practical experiences in teaching group fitness exercises, including hi/lo, step, interval, and resistance training. ACE certification exam prep.

ACE 471. Women and Sport. 3 Hr. Study the history of Women in sport, and investigate issues that are directly related to women in sport as participants, coaches, administrations, parents, and fans.

ACE 472. Methods of Personal Training. 3 Hr. PR: ACE 460 and ACE 462. Content knowledge, practical experiences of training techniques and exercise programming for the healthy adult and special populations. ACE certification exam prep.

ACE 474. Aquatic Fitness Instructor. 1 Hr. PR: ACE 470. Provides theoretical framework, content knowledge, and practical experiences in teaching aquatic fitness in a group setting.

ACE 475. Group Cycling Instructor. 1 Hr. Provides theoretical framework, content knowledge, and practical experience in teaching indoor cycling in a group setting.

ACE 476. Fitness Internship. 3-6 Hr. PR: ACE 470 or ACE 472. Supervised experience in a health/fitness environment under the direction of a professional at the site. Preparation for the ACE national certification exam.

ACE 477. Group Cycling Instructor. 1 Hr. Provides theoretical framework, content knowledge, and practical experience in teaching indoor cycling in a group setting.

ACE 478. Fitness Yoga Instructor. 1 Hr. Provides theoretical framework, content knowledge, and practical experience in teaching fitness yoga in a group setting.

ACE 479. Kickboxing Instructor. 1 Hr. Provides theoretical framework, content knowledge, and practical experience in teaching kickboxing in a group setting.

ACE 480. Pilates Mat Instructor. 1 Hr. Provides theoretical framework, content knowledge, and practical experience in teaching mat pilates in a group setting.

ACE 482. Certified Pool Operator. 3 Hr. This class is designed to give students the knowledge and skills to sit for the NSPF Pool Operator Exam. (Students responsible for the NSPF Exam fee.)

ACE 483. Aquatic Exercise Professional. 3 Hr. This course is designed to prepare students to take the AEA Professional Instructor Exam for Water Aerobics Instructors. (Students are responsible for the AEA exam fee.)

ACE 484. Aquatic Staff and Programming. 3 Hr. This class teaches students the different types of staff and programs available for an aquatic facility.

ACE 485. Aquatic Design and Budget. 3 Hr. PR: ACE 482 and ACE 484 and PE 175 and PET 324. Teaches students to design a facility that is both functional and profitable.

ACE 486. Aquatic Management Internship. 3 Hr. PR: ACE 482 and ACE 484 and PE 175 and PET 324. This class will give students hands-on experience with aquatic facility management.

ACE 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ACE 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ACE 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ACE 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Advertising (ADV)

ADV 201. Advertising and Society. 3 Hr. As a social institution, advertising plays a critical role in our daily lives. The course will examine the social, economic, and legal aspects of advertising.

ADV 215. Principles of Advertising. 3 Hr. (Open to all University students.) An introduction to all sides of the advertising field and to the process, quantitative, strategic and aesthetic, by which the sales message is planned, produced and delivered. This is the first advertising course for advertising majors and must be taken as a pre-requisite for other courses in the sequence.

ADV 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ADV 310. Typography Printing Process. 3 Hr.

ADV 315. Advertising Copywriting. 3 Hr. PR: ADV 215 and admission to School of Journalism. Writing advertising copy and designing effective layouts. Elements of effective advertising: creating strategies, building campaigns, writing and rewriting, and preparing roughs and comps. Developing a portfolio. Emphasis on print advertising. (Should be taken in combination with ADV 403.)

ADV 319. Advertising-Desktop Publishing. 3 Hr. PR: SOJ admittance and ADV 215 or PR 215. Design, type and production skills used in advertising will be studied. Students will work with newspaper and magazine layouts. Designs will be produced on the computer using Photoshop, Illustrator, and Quark.

ADV 401. Retail Advertising. 3 Hr. PR: ADV 315 and ADV 403. Principles and practices of retail advertising, Planning and budgeting; copy preparation and layout, evaluation and selection of media; outdoor advertising, specialty advertising.

ADV 403. Advertising Media Analysis. 3 Hr. PR: ADV 215. Coreq: ADV 315. Theory, evaluation and selection of advertising media for a variety of market situations. Market analysis, media characteristics, sources of media data, and development of a media plan.

ADV 410. Graphic Design. 3 Hr. PR: ADV 215. Design layouts for print media. Includes buying, supervising, and scheduling of art, typography, and print material. (2 hr. lec, 2 hr. lab.)

ADV 421. Advertising Research. 3 Hr. PR: ADV 315 and ADV 403. A broad study of scientific and critical research methods; relevant sources of historical data gathering, readership, and audience analysis; evaluation of marketing and public opinion research.

ADV 451. Direct Marketing. 3 Hr. PR: ADV 315 and ADV 403. An examination of the concepts, strategies and applications involved in direct marketing. Measurability, accountability, lists, data and the integration of direct marketing program into total marketing efforts are discussed.

ADV 459. Campaigns. 3 Hr. PR: ADV 315 and ADV 403 and JRL 421 and senior standing. The capstone course in the undergraduate advertising curriculum. The course is designed to give students the opportunity to integrate all prior learning and apply it to the development of an advertising campaign for a real-world client. The actual output of the course will be a written plans book and a formal campaign presentation. (Should be taken the final semester before graduation.)

ADV 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Course will be graded pass/fail.)

ADV 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Course will be graded pass/fail.)

ADV 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ADV 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ADV 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

ADV 496. Senior Thesis. 1-3 Hr. PR: Consent.

ADV 497. Research. 1-6 Hr. Independent research projects.

ADV 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**Applied & Environmental Microbiology (AEM)**

AEM 341. General Microbiology. 4 Hr. PR: CHEM 115. Introductory morphological, cultural, and physiological characteristics of microorganisms; application of microbiology to agriculture, home economics, and health.

AEM 401. Environmental Microbiology. 4 Hr. PR: AEM 341 or Consent. Microbiology as applied to soil, water, wastewater, sewage, air, and the general environment. Occurrence, distribution, ecology, and detection of microorganisms in these environments. (Also listed as ENVP 401.)

AEM 408. Applied Water Microbiology. 3 Hr. PR: AEM 341. Microbiology and health hazards associated with surface and ground water intended for consumption, recreation, waste disposal, and agriculture/industry applications.

AEM 420. Soil Microbiology. 3 Hr. PR: AEM 341. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of micro-organisms in soil. (Also listed as AGN 420 and ENVP 420.)
AEM 445. Food Microbiology. 3 Hr. PR: AEM 341. The relationships of microorganisms to food-borne illness and intoxications, microbial food safety and food quality, food spoilage, food preservation and bio-processing. The emerging food preservation and technologies and predictive microbiology will be introduced.

FDST 449. Food Microbiology Lab. 1 Hr. PR: AEM 445. Laboratory training in methods used in microbiological examination of foods. This laboratory will provide hands-on experience for students who take or have taken AEM 445.

AEM 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

AEM 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

AEM 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AEM 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

AEM 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

AEM 496. Senior Thesis. 1-3 Hr. PR: Consent.

AEM 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Agriculture, Forsty and Cnsmr Sci (AFCS)

AFCS 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AFCS 480. Assigned Topics. 1-4 Hr. Assigned studies of an interdisciplinary nature with a particular specialty area in agriculture and forestry. Students must be in good standing and have prior approval of a proposed outline from the Division director's office.

AFCS 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

AFCS 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

AFCS 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AFCS 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

AFCS 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

AFCS 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

AFCS 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Agricultural Biochemistry (AGBI)

AGBI 199. Orientation to Biochemistry. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

AGBI 410. Introductory Biochemistry. 3 Hr. PR: 8 hr. general chemistry, CHEM 231 or equivalent. Introduction to chemistry of cellular constituents (proteins, amino acids, carbohydrates, lipids, nucleic acids, enzymes and coenzymes) and their metabolism in animals and plants.

AGBI 411. Introductory Biochemistry Laboratory. 1 Hr. CONC: AGBI 410. Experiments to demonstrate certain principles and properties of animal and plant biochemicals.

AGBI 480. Assigned Topics. 1-4 Hr.

AGBI 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.
AGBI 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

AGBI 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AGBI 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

AGBI 496. Senior Thesis. 1-3 Hr. PR: Consent.

AGBI 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Agricultural/Environmental Education (AGEE)**

AGEE 101. Global Food and Agricultural Industry. 3 Hr. Examination of the history and current developments, structures, functions, and importance of the international food and agricultural industry; issues, concerns and interrelationships and their impacts on American agriculture and society.

AGEE 102. Educational Colloquium in AGEE. 1 Hr. Components of and requirements for majoring in agricultural and extension education, including specializations, professional organizations, avenues to program completion, and requirements to be gainfully employed.

AGEE 103. Basics of Ag Mechanization. 2 Hr. Study and application of the foundation area associated with agricultural mechanization.

AGEE 110. Microcomputer Applications in Agricultural Education. 3 Hr. PR: Consent. Microcomputer applications in the instructional process of agricultural education; use of applications software, agricultural software, and data bases; and methods of integrating microcomputers into secondary school agriculture and extension programs.

AGEE 187. Welding and Heat Treatment. 1 Hr. Principles and practices of metal arc welding using mild steel. Safety and electrode selection for various metals is covered. Designed for agriculture applied science students.

AGEE 202. Site Based Tutoring in AGEE. 1 Hr. Application of models and paradigms of learning in the content area through tutoring of individuals and small groups in an assigned public school setting.

AGEE 203. Ag Mechanics Practica. 3 Hr. Theory and practice of designing and constructing structures electrical circuits, masonry, equipment maintenance, and surveying.

AGEE 220. Group Organization and Leadership. 3 Hr. Study of the impact of leaders and organized groups on societies. Role of groups in conveying cultural norms. Principles and techniques involved in forming and directing organizations in providing effective leadership.

AGEE 303. Small Engines and Hydraulics. 3 Hr. Theory and practice of disassembling, assembling and maintaining small gasoline engines and hydraulic devices.

AGEE 305. Metal Fabrication. 3 Hr. Theory and practice of the fusion of metals. Advancing the science, technology and application of welding and allied processes including: joining, brazing, soldering, and cutting.

AGEE 330. Shop Theory and Methods. 3 Hr. PR: AGEE 103 and AGEE 203. Methods of teaching agricultural mechanics including laboratory safety, organization and supervision.

AGEE 421. Agricultural and Natural Resource Communications. 3 Hr. Procedures and practices in developing, interpreting, and communicating agricultural and natural resource information; emphasis on visual materials and effective presentations. (3 hr. lec.)

AGEE 426. Directing FFA and SAEs. 3 Hr. This course is specifically designed for students preparing to teach agricultural science in the public schools. Focus will be on planning, advising, supervising and evaluating student educational experiences through FFA and supervised agricultural expericence programs.

AGEE 430. Methods of Teaching Agriculture. 3 Hr. PR: Consent. Organization and preparation for teaching agriculture in middle and secondary schools.

AGEE 431. Adult Education in Agriculture and Natural Resources. 2 Hr. PR: Consent. Planning and preparation for teaching adult classes and advising agricultural organizations.

AGEE 434. Managing Learning Environment. 3 Hr. PR: AGEE 430 or consent. Principals/process in organizing and managing all components of the secondary agricultural education learning environment to maximize student achievement.


AGEE 450. Farm Structures. 3 Hr. Study of structures required for agriculture, family housing, storage, and recreation. Includes function, planning, layout, materials, construction techniques, prefabrication, repair, remodeling, and costs. (2 hr. rec., 3 hr. lab.)

AGEE 451. Agricultural Engines. 3 Hr. Study of power sources (gasoline, diesel, turbine, wankel, etc.) for agriculture and forestry. Operating, selection, maintenance techniques, and emissions impact on power and fuel efficiency. (2 hr. rec., 3 hr. lab.)

AGEE 452. Advanced Farm Machinery. 3 Hr. Systems approach to selection, use and operation of machinery related to agriculture, forestry and other rural activities. Emphasis on safety and environmental impact. Use of records for management decisions, purchase, replacement, sale, or overhaul. (2 hr. rec., 3 hr. lab.)

AGEE 453. Electricity and Lighting. 3 Hr. Properties of electricity and electrical circuits, residential wiring, selection of electric motors, use of electrical controls; and design of interior lighting, landscape lighting, and flood lighting systems. (Field trip required.)

AGEE 454 A-Z. Agricultural Mechanics Problems. 1-4 Hr. PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.)

AGEE 455. Advanced Farm Mechanics. 3 Hr.

AGEE 460. Engineering Technology for Urban Watersheds and Irrigation. 3 Hr. Soil and water management; analysis of small watersheds and design of waterways, culverts, ponds, sediment basins, and turf irrigation systems. (3 hr. lec.)

AGEE 461. Waste Management-Composting. 3 Hr. Both present and alternative waste management strategies will be examined. Students will learn how to analyze the waste stream and be able to develop management concepts which are both economically and environmentally sound. Lectures by waste management professionals will be integrated into the class to expose the students to the very latest practices and technology.

AGEE 488. Professional Agricultural Internship. 1-12 Hr. PR: Consent.

AGEE 489. AGEE Reflective Seminar. 1 Hr. Provides opportunities for students to examine their field-based experiences. Professional issues and problems are identified and discussed. Ethics and misconceptions about professional practice are examined.

AGEE 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

AGEE 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

AGEE 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AGEE 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

AGEE 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

AGEE 496. Senior Thesis. 1-3 Hr. PR: Consent.

AGEE 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Agriculture (AGRL)

AGRL 111. Professions in Agriculture. 1 Hr. An overview of subject matter related to agriculture in current society. Emphasis on agricultural organizations, environmental and food issues, careers, and programs within the college.

AGRL 112. Professions in Agriculture. 1 Hr. Continuation of AGRL 111.

AGRL 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
AGRL 400. Agricultural Travel Course. 1-6 Hr. Tour and study of production methods in major livestock and crop regions of the United States and other countries. Influence of population, climate, soil, topography, markets, labor, and other factors on agricultural production.

AGRL 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

AGRL 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

AGRL 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

AGRL 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AGRL 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

AGRL 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

AGRL 496. Senior Thesis. 1-3 Hr. PR: Consent.

AGRL 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Agronomy (AGRN)

AGRN 104. Agron/Agro Chemicals. 4 Hrs. A general overview of the chemicals, herbicides, biocides, fertilizers, pesticides, etc., associated with plant and animal production. Treatments, controls, integrated pest management, application, laws, and water quality will receive emphasis. Students enrolled in this course will be encouraged to test for the Private Applicators License.

AGRN 125. Soil Judging. 1 Hr. PR: Consent. Field study of soils for classification and land-use evaluation. (3 hr. lab.) (May be repeated for max. 3 credits.)

AGRN 202. Principles of Soil Science. 3 Hr. PR: CHEM 111 or equiv. and PR or CONC: AGRN 203. Introductory course. Soils as a natural resource emphasizing physical, chemical, and biological properties in relation to plant growth and production, land use and management, soil and water pollution, and environmental protection. Regional Campus concurrent.

AGRN 203. Principles of Soil Science Laboratory. 1 Hr. PR or CONC: AGRN 202 or consent. (Regional campus concurrent.)

AGRN 315. Turfgrass Management. 3 Hr. PR: AGRN 202 and AGRN 203 and PLSC 206 or consent. Establishment, maintenance and adaptation of grasses for lawns, golf courses, parks, athletic and playing fields, and roadides. Associating differential plant responses with soil, climatic and biotic factors. (3 hr. lec.)

AGRN 410. Soil Fertility. 3 Hr. PR: AGRN 202 and AGRN 203 and CHEM 116. Effect of soil chemical and physical properties on soil fertility; evaluation of essential and toxic nutrients and the controls on their availability; fertilizer and lime use; soil fertility evaluation. (3 hr. lec.)

AGRN 415. Soil Survey and Land Use. 3 Hr. PR: AGRN 125 or Consent. Identification of morphological characteristics and taxonomic units of soil; techniques of writing soil pedon and mapping unit descriptions; techniques of preparing soil maps; evaluation of soil for land use planning. (2 hr. lec., 3 hr. lab.)

AGRN 417. Soil Genesis and Classification. 4 Hr. PR: AGRN 125 or Consent. Origin and formation of soils; principles of soil classification; study of soil pedons and polypedons; influence of soil-forming factors and processes. (Two Saturday field trips required.) (3 hr. lec., 3 hr. lab.)

AGRN 420. Soil Microbiology. 3 Hr. PR: AEM 341. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of micro-organisms in soil. (Also listed as AEM 420 and ENVP 420)

AGRN 425. Environmental Soil Management. 3 Hr. PR: AGRN 202 and AGRN 203. This course provides a foundation for utilizing creative solutions and technical knowledge in preserving and enhancing soil and water quality. Soil conservation, precision agriculture and nutrient management for protection of soil and water quality are covered. (Also listed as ENVP 425.)

AGRN 430. Soil Physics. 3 Hr. PR: AGRN 202 and AGRN 203. Physical properties of soils; water and air relationships and their influence on soil productivity.

AGRN 451. Principles of Weed Science. 3 Hr:PLSC 206 and AGRN 202 and AGRN 203 or consent. Fundamental principles of weed science including identification, ecology, and control in crops. (Also listed as ENVP 451.)
AGRN 452. Grain and Special Crops. 3 Hr. PR: PLSC 206 and AGRN 202 and AGRN 203 or consent. Advanced study of methods in the production of grain and special crops. Varieties, improvement, tillage, harvesting, storage, and use of crops grown for seed or special purposes.

AGRN 454. Forage Crops. 3 Hr. PR: PLSC 206 and AGRN 202 and AGRN 203, or consent. All phases of forage crop science including ecology, taxonomy, management practices used for the production of forage and seed, and forage composition, quality, and utilization. (3 hr. lec, 1 hr. lab.)

AGRN 455. Reclamation of Disturbed Soils. 3 Hr. PR: Junior standing or above. Principles of soil science, geology, hydrology, and engineering will be applied to surface mine planning, overburden handling during mining, soil replacement and amendments, revegetation practices, acid mine drainage control and treatment, hazardous wastes, and land management of disturbed areas. Field trip required. (Also listed as ENVP 455.)

AGRN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

AGRN 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

AGRN 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AGRN 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

AGRN 496. Senior Thesis. 1-3 Hr. PR: Consent.

AGRN 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Animal Nutrition (ANNU)

ANNU 260. Animal Nutrition. 3 Hr. PR: Two courses in chemistry. Digestion and metabolism of food nutrients, nutrient requirements of farm animals, and nutritive values of feeds and rations.

ANNU 361. Applied Nutrition. 3 Hr. PR: ANNU 260. Feedstuffs, feed processing storage and additives, nutrient requirements and ration formulation for beef and dairy cattle, sheep, and horses. (2 hr. lec., 1 hr. lab.)

ANNU 362. Applied Nutrition 2. 3 Hr. PR: ANNU 260. Applied feeding practices, nutrient requirements and ration formulation for poultry, swine, laboratory and companion animals. (2 hr. lec., 1 hr. lab.)

ANNU 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ANNU 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ANNU 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ANNU 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ANNU 496. Senior Thesis. 1-3 Hr. PR: Consent.

ANNU 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Animal Physiology (ANPH)

ANPH 301. Introduction to Animal Physiology. 3 Hr. PR: BIOL 191 and BIOL 102 or consent. The function and regulation of the principal systems of the animal body.

ANPH 400. Growth and Lactation Physiology. 3 Hr. PR: ANPH 301 or consent. Animal life cycles; nature of growth and lactation; effects of biological, environmental, and social-psychological variants; physiological regulation and control.

ANPH 405. Animal Physiology Laboratory. 2 Hr. PR: ANPH 301 or Consent. Laboratory study of the physiological systems of animals and the influences of environment on these systems. (4 hr. lab.)

ANPH 424. Physiology of Reproduction. 3 Hr. PR: Course in biology. Comparative physiology of reproduction in higher animals; endocrine functions involved in reproduction; genetic and environmental variations in fertility mechanisms.

ANPH 425. Reproductive Laboratory. 1 Hr. PR: ANPH 424 or current enrollment, junior standing or consent. Laboratory study of the anatomy and function of the reproductive physiology system in animals.
ANPH 426. Applied Animal Reproduction. 1 Hr. PR: ANPH 424 or current enrollment, junior standing or consent. Laboratory study, including rectal pregnancy examination, of reproductive physiology system in animals.

ANPH 430. Breeding of Farm Animals. 3 Hr. PR: Course in genetics or consent. Application of principles of quantitative genetics to the improvement of farm animals.

ANPH 480. Behavioral Patterns of Animals. 3 Hr. Examination of the bases for exhibition and control of behavioral patterns of domesticated and nondomesticated species. (2 hr. lec., 3 hr. lab.)

ANPH 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ANPH 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ANPH 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ANPH 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ANPH 496. Senior Thesis. 1-3 Hr. PR: Consent.

ANPH 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Animal Production (ANPR)
ANPR 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ANPR 308. Animal Production Experience. 1-4 Hr. Experience in operating a dairy or livestock farm, including layers or broilers, calving, lambing, or farrowing of hogs. (Can be repeated up to a maximum of 4 credits.) (3 hr. lab./ per hr. of credit.)

ANPR 336. Dairy Cattle History and Selection. 3 Hr. To familiarize the student with the breeds of dairy cattle as well as modern concepts in phenotype and performance record evaluation. (2 labs.)

ANPR 338. Horse, Livestock, Poultry Evaluation. 3 Hr. Appraisal of horses, cattle, sheep, poultry, and swine. Evaluation of scientific techniques used in selecting those species. Tours of representative flocks, herds and stables will be required. (Two 3 hr. labs.)

ANPR 339. Advanced Evaluation of Animal Products. 1-4 Hr. PR: FDSC 334 or ANPR 336 or ANPR 338 or Consent. Advanced selection, evaluation and grading of domestic livestock species and animal products. Tours of representative flocks, herds and processing plants will be required. Can be repeated up to a maximum of (4 credits. 3 hr. lab./per hr. credit.)

ANPR 340. Poultry Production 1. 3 Hr. PR: ANNU 260. Special phases of broiler and egg production, disease control, labor-saving studies, and recent designs in housing and equipment for all types of poultry. (3 hr. lec.)

ANPR 341. Beef Production. 3 Hr. PR: ANNU 260. Applying the principles of breeding, nutrition, physiology, and economics for the production of beef cattle.

ANPR 343. Beef Production Laboratory. 1 Hr. COREQ:ANPR 341. Experiences in beef cattle management, including feeding, handling, health programs and farm visits. (3 hr. lab.)

ANPR 344. Light Horse Science. 3 Hr. PR: ANNU 260. Application of breeding, nutrition, physiology, and pathology to production and management of light horses.

ANPR 350. Milk Production. 3 Hr. PR: ANNU 260. Feeding and management of dairy cattle. (2 hr. lec., 3 hr. lab.) Regional campus course requires 30 hours of work on the campus farm.

ANPR 353. Pork Production. 3 Hr. PR: ANNU 260. Physiological and economical bases of pork production. (2 hr. lec., 3 hr. lab.)

ANPR 356. Small Ruminants. 3 Hr. PR: ANNU 260. Genetics, nutrition, physiology, health and management of small ruminants in production of fiber, meat and milk, in local, regional and global contexts.

ANPR 367. Poultry Production. 3 Hr. PR: ANNU 260. Special phases of broiler and egg production, disease control, labor-saving studies, and recent designs in housing and equipment for all types of poultry.

ANPR 369. Poultry Production Laboratory. 1 Hr. COREQ:ANPR 367. Laboratory study of poultry production systems, related feed manufacturing and product processing practices. (3 hr. lab.)
ANPR 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ANPR 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ANPR 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ANPR 494. Seminar. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ANPR 496. Senior Thesis. 1-3 Hr. PR: Consent.

ANPR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Arabic (ARBC)

ARBC 101. Elementary Modern Standard Arabic 1. 3 Hr.


ARBC 204. Intermediate Modern Standard Arabic 2. 3 Hr. PR: ARBC 203 or consent. Cont. ARBC 203.

ARBC 293. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ARBC 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ARBC 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ARBC 493. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ARBC 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ARBC 496. Senior Thesis. 1-3 Hr. PR: Consent.

ARBC 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Agriculture and Resource Econ (ARE)

ARE 110. Agribusiness Accounting. 3 Hr. Introduction to accounting for agricultural, rural, and small business managers. Emphasis on the accounting cycle, analysis and interpretation of financial statements, income taxes, and managerial accounting. (Students having prior college credit in accounting are not eligible for this course.)

ARE 150. Introductory Agricultural and Agribusiness Economics. 3 Hr. Introduction to basic agricultural economics and agribusiness concepts, and the application of these concepts to agricultural and agribusinesses issues.

ARE 187. Energy Resource Economics. 3 Hr. Dilemmas posed for developing and modern societies by rising energy demands amid concerns for the world’s environment. Economics of fuel sources and technologies, and historical and new concerns over resource scarcities.

ARE 188. National Energy Policy. 3 Hr. Resource and energy policy problems on a national level, including mineral import quotas, prorationing, federal tax and land-law policy, leasing, mineral research and education, health, and social concerns.

ARE 199. Orientation to Agriculture and Resource Economics. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

ARE 201. Principles of Resource and Energy. 3 Hr. PR: Third-year standing. Analyzes problems important or peculiar to mineral industry economics; exhaustion, externalities, risks, production cycle, industry structure, pricing, role of minerals in development and trade, resource planning. Energy, metals, industrial minerals. (3 hr. lec.)

ARE 204. Agribusiness Management. 3 Hr. Overview of the agribusiness decision-making process, and the functions of agribusiness management; analysis of financial statements and budgeting for evaluating profitability of alternative enterprises and practices.
ARE 220. Introductory Environmental and Resource Economics. 3 Hr. Economic analysis of environmental pollution, natural resource conservation and management, outdoor recreation, public land use, wildlife resources, water use, property rights, and benefit-cost issues.

ARE 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ARE 360. Current Issues In Agriculture. 3 Hr. Course focusing on the current scientific, ethical, legal, economic and political issues relating to agriculture. Students conduct group and individual research, discuss topics in an informal debate format and summarize positions in a written form.

ARE 370. Recreation/Tourism Economics. 3 Hr. PR: ARE 220 or consent. Principles of economic analysis as applied to recreation and tourism resources, including economic impact and cost-benefit analyses.

ARE 382. Agricultural and Natural Resources Law. 3 Hr. Introduction to legal concepts, principles and practices related to environmental, natural resource, and agricultural issues; in the context of the legal system within which statutes are enacted, administered and enforced.

ARE 401. Applied Demand Analysis. 3 Hr. Consumer demand economics applied to environmental, natural resource, and agricultural issues; analysis of factors that influence demand and determine prices; special applications to non-market, environmental, and natural resource amenities.

ARE 402. Applied Production Economics. 3 Hr. Production economics applied to agricultural, environmental, and resource issues; production, multiple-product, and cost functions, and joint production; effects of environmental and natural resource management regulations on the production process.

ARE 406. Applied Quantitative Methods. 3 Hr. PR: ARE 150. Application of basic quantitative concepts and methods applied to agribusiness and natural resources. Topics include applied economics, statistics, mathematics, and financial concepts and decision-making tools for determining optimum allocation of resources for production processes.

ARE 410. Environmental and Resource Economics. 3 Hr. PR: (ARE 401 and ARE 402) or ECON 301 or Consent. Economic analysis of natural resource and environmental problems; management of renewable and non-renewable resources and environmental amenities; market failure, externalities, benefit-cost and risk analysis; property rights and the "taking" issue.

ARE 411. Rural Economic Development. 3 Hr. Economic trends, development policies, and analysis of rural economies in the United States. Rural diversity, development concepts, rural planning, public programs and policies, and community analysis methods.

ARE 413. Economic Development. 3 Hr. PR: ECON 201 and ECON 202. The problems, changes and principal policy issues faced by nonindustrialized countries.

ARE 420. Agricultural Cooperatives. 3 Hr. History, principles, organization, management, taxation, and legal aspects of agricultural, marketing, supply and service cooperatives in the U.S. Development of non-agricultural cooperatives.

ARE 421. Rural Enterprise Development. 4 Hr. PR: ARE 110 and ARE 204 or consent. Introduction to concepts, methods and strategies involved in starting a successful small private enterprise in a rural area: assessing a community for enterprise opportunities, identifying and developing an enterprise idea, and preparing an enterprise plan.

ARE 431. Marketing Agricultural Products. 3 Hr. Organization, functions, and analysis of the agricultural marketing system. Food consumption, exports, price analysis, marketing costs, market power, commodities futures market, food safety, and government regulations.


ARE 440. Futures Markets and Commodity Prices. 3 Hr. Analysis of price-making forces which operate in the market place; emphasis on major agricultural and mineral commodity and futures markets.

ARE 445. Energy Economics. 3 Hr. Analysis of the energy sector and its relationship to the rest of the economy; energy security, deregulation, full cost pricing, substitutability among energy sources, transmission, new technologies, environmental considerations.

ARE 450. Agriculture, Environmental and Resource Policy. 3 Hr. PR: (ARE 401 and ARE 402) or ECON 301 or Consent. Economic analysis of agricultural, natural resource and environmental policies; problems of externalities and market failure, and alternative policies for addressing such problems; benefits and cost of alternative policies.

ARE 461. Agribusiness Finance. 3 Hr. An overview of financial analysis and the application of financial principles to small, rural and agricultural businesses. Includes applications of financial analysis computer software.
ARE 482. Enterprise Operation Law. 3 Hr. Course focusing on laws applicable to businesses and the management of risks associated with operating a business. Students will learn to read and interpret laws and apply them to real-life business scenarios.

ARE 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ARE 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ARE 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ARE 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ARE 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

ARE 496. Senior Thesis. 1-3 Hr. PR: Consent.

ARE 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Art History (ARHS)


ARHS 120. Survey of Art History 1. 3 Hr. The course examines the history of the visual arts in world cultures from pre-historic periods to the fourteenth century.

ARHS 160. Survey of Art History 2. 3 Hr. The course examines the history of the visual arts in world cultures from the fourteenth century to the present.

ARHS 181. World Architecture 4: 1850-Present. 3 Hr. Examination of architecture from the industrial revolution to the present. Will consider style, form, technique, material, and meaning in the architecture of the modern and contemporary periods.

ARHS 225. Intro to Italian Culture. 3 Hr. Exploration of Italian history, culture, art, design, and language through lecture and experiential learning. Possible field trips; Florence, Rome, Pisa, Sienna, Lucca, Milan. Students conduct an individual design research project.

ARHS 240. Art Theory. 3 Hr. The course will examine development and tradition of the literature of art theory and its relationship to artistic practice.

ARHS 304. Asian Art. 3 Hr.

ARHS 305. Pop Art. 3 Hr.

ARHS 306. Research in Mexico. 3 Hr.

ARHS 307. Native American Visual Culture. 3 Hr. In-depth overview of the visual material culture of the First Peoples of North America north of the Rio Grande, pre-contact to present. Focus on formal analysis with careful contextual studies.

ARHS 310. Introduction to Curatorial Practices. 3 Hr. PR: ARHS 120 and ARHS 160. This course provides an introduction to the museum structure and specifically the role of the curator. The objective is to assess exhibition display and develop critical perspective on curatorial practice.

ARHS 320. Greek and Roman. 3 Hr. The arts of the Aegean World, c. 2000 BCE, Greece and Rome to 400 CE. are examined. Architecture, sculpture and painting will be included.

ARHS 331. Medieval. 3 Hr. PR: ARHS 120 and ARHS 160. The arts of Europe from c. 312 to c. 1350 are examined. The theoretical, historical, and literary contexts for the images will be established. Architecture, sculpture, painting and protable arts will be included.

ARHS 333. Medieval Architecture. 3 Hr. The architecture of western Europe and its builders, from 313 through the sixteenth century: monumental buildings, architectural ornament, and the fusion of sacred and secular, in context of medieval world views.
ARHS 338. The History of Stained Glass. 3 Hr. In-depth introduction to the study of architectural stained glass. Focus on the development of the medium, on formal analysis of composition, on inconographic conventions, and historic contexts.

ARHS 345. Modern Art Theory. 3 Hr. PR: ARHS 120 and ARHS 160 and 200-level art history. The course will examine the development of modern art theory and its relationship to artistic practice. Emphasis will be placed on the critical and theoretical examination of modernism and post modernism.

ARHS 348. Women in Art. 3 Hr. The course examines the art of female artists and of women as subjects in art. There will be a historical view along with a strong theoretical component.

ARHS 350. Northern Renaissance. 3 Hr. PR: ARHS 120 and ARHS 160. The arts of Northern Europe from 1350 to 1560 will be studied in a historical and theoretical context. Painting and sculpture will be the focus of study.

ARHS 354. Italian Renaissance. 3 Hr. PR: ARHS 120 and ARHS 160. Early Renaissance through Mannerism. The course will emphasize both the historical context and theoretical foundation of 15th and 16th-century Italian art and architecture.

ARHS 360. Baroque. 3 Hr. PR: ARHS 120 and ARHS 160. The course examines the art of the late 16th through 18th centuries of both Northern and Southern Europe. Issues of historical context and theoretical interpretation are emphasized.

ARHS 370. American. 3 Hr. PR: ARHS 120 and ARHS 160. This course will treat the arts in the United States from the Colonial era to 1960. Emphasis is placed upon factors which define American art and the critical foundations for the works.

ARHS 375. Nineteenth Century. 3 Hr. PR: ARHS 120 and ARHS 160. The course focuses upon European and American art from the late 18th century through 1900. Issues of theory, historical context and literary foundation will be considered.

ARHS 378. American Decorative Arts. 3 Hr.

ARHS 380. Modern. 3 Hr. PR: ARHS 120 and ARHS 160. The revolutionary experience of modern art, from its foundation in 19th-century European movements through the 1950’s will be emphasized. Critical theory and historical context stressed.

ARHS 381. Modern Architecture. 3 Hr. PR: ARHS 120 and ARHS 160. In-depth overview of architecture, 1850 to present. Focus on development of International Style, its dissemination, and challenges to this modernist aesthetic by contemporary architects.

ARHS 382. Architect Frank Lloyd Wright. 3 Hr. Overview of the life and work of America’s most noted and controversial architect. Close examination of his work in the context of the development of modern architecture.

ARHS 385. Print, Propaganda, and Art. 3 Hr. Survey of the history of printing, printmaking, and other forms of imaging in the western world from earliest printed materials to present. Theoretical implications of image reproduction also considered.

ARHS 388. The Art of Andy Warhol. 3 Hr. Overview of the ground-breaking and controversial art of Andy Warhol. Close examination of his work in the context of the 1960’s Pop Art movement and recent contemporary art.

ARHS 389. Contemporary. 3 Hr. PR: ARHS 120 and ARHS 160. This course explores the various artistic movements from World War II to the present. Emphasis will be given to the change from modern to postmodern. Familiarity with images and critical tests is expected.

ARHS 401. Senior Project-Capstone. 1-15 Hr. PR: Consent. This class concentrates upon independent research, closely supervised, on a topic of student’s selection. This must be well-defined and contain historical, critical, and theoretical issues. (Contractural course.)

ARHS 402. History of Chinese Ceramics. 3 Hr. Covers pre-history to present with emphasis on historical development of ceramics and cultures of important dynasties in Jingdenzhen, China. Students will visit historical archaeological sites, traditional production centers and museums.

ARHS 405. Chinese Language and Culture History. 3 Hr. Covers basic cultural and written Chinese, an introduction to China’s many cultures and customs, and a brief history of China. Field trips offer experiential learning at sites discussed in class.

ARHS 445. Michaelangelo and His Time. 3 Hr.

ARHS 446. Medieval Painting. 3 Hr. An historical and media-centered investigation of the pictorial arts of the West c. 800-1300: manuscript illumination, mural painting, panel decoration, embroidery, mosaics, and stained glass.

ARHS 447. Romantic Painting. 3 Hr.
ARHS 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ARHS 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ARHS 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ARHS 495. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

ARHS 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Art (ART)
ART 102. Non-Major Ceramics. 3 Hr. The course is designed to teach basic ceramic skills associated with beginning pottery. Emphasis is on throwing techniques, trimming, handle attachment, basic ceramic design, glazing and studio practices.

ART 103. Materials and Procedures. 3 Hr. The course is designed for elementary education majors, to familiarize the student with two- and three-dimensional media, processes, and concepts.

ART 109. Basic Drawing 1 for Non Majors. 3 Hr. A beginning level studio experience emphasizing the application of techniques and materials in rendering. Designed for non art majors and those seeking to improve their portfolios to gain entrance into the BFA studio program.

ART 110. Basic Drawing 2 for Non Majors. 3 Hr. PR: ART 109 or consent. A studio experience building upon skills and techniques gained in ART 109. Includes the examination of drawing through expanded materials. For non-art majors, those seeking to improve their portfolios and enter the BFA program.

ART 111. Drawing 1. 3 Hr. The course emphasizes fundamental principles of drawing with a focus on building basic skills through direct observation, using traditional graphic media and expression.

ART 112. Drawing 2. 3 Hr. The course emphasizes fundamental principles of drawing with a focus on more expressive approaches to basic problems. Greater emphasis is placed on abstraction and non-traditional drawing processes and media.

ART 121. 2D Visual Foundation. 3 Hr. The course provides an introduction to the fundamental principals and concepts of two-dimensional image making with an emphasis on color theory and design. Through creative assignments students develop abilities and visual awareness emphasizing the basics of color perception, form, proportion and rhythm.

ART 122. 3D Visual Foundation. 3 Hr. The course incorporates projects involving abstract and representational ideas in three dimensions and investigates the basic concepts of line, plane, volume, form, mass, texture, composition and time.

ART 199. Orientation to Art. 1 Hr. Required for all studio art majors. Orientation to degree programs and requirements, departmental resources, curriculum options, student student responsibilities and opportunities. Faculty assists students in establishing career goals. Course includes a mandatory portfolio review of all first-year art majors.

ART 211. Figure Drawing. 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. This class concentrates on compositional structure from the human figure. Students will investigate organic nature of the figure and its representation in space using a wide variety of media and processes. (May be repeated for credit.)

ART 212. Advanced Drawing. 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. This class expands media possibilities and examines the variables of image-making while establishing personal expression. The course is designed to develop analytical and problem solving skills as well as technical processes. (May be repeated for credit.)

ART 213. Painting. 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course serves as an introduction to painting, with concentration on basic structure, techniques and imagery of historic and contemporary painting. Emphasis is on the development of skills in rendering works that convincingly express light, color and form integral to the medium.

ART 214. Painting. 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course provides the essential structure, techniques and iconography of painting. Its modern development, augmenting the traditional languages of painting, are clarified and isolated.

ART 223. Introduction to Graphic Design. 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course emphasizes the application of traditional and technological skills emphasizing color, composition, symbolic drawing, and typography fundamental to the field of graphic design.
ART 224. Graphic Design 2. 3 Hr. PR: ART 223. The course emphasizes advanced typography, sequential projects and complex compositions and includes preparation as well as review of upper-level entrance portfolios.

ART 226. Introduction to Sculpture. 3 Hr. PR: ART 111 and 112 and ART 122 and ART 199. The course focuses on creative expression using basic traditional materials and techniques. Students explore aesthetics and contemporary issues while acquiring a working knowledge of various sculptural media.

ART 227. Sculpture. 3 Hr. PR: ART 111 and ART 112 and ART 122 and ART 199. New construction techniques including stretched canvas over wood encaustics, molds, plasticene and figure modeling will aid the students in developing problem solving skills related to aesthetics and formal sculptural issues.

ART 230. Printmaking - Intaglio and Relief. 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course is a fundamental printmaking class concerned with creating an understanding and sensitivity towards intaglio processes and techniques. Students explore and develop visual ideas and images using non-traditional approaches.

ART 231. Printmaking - Lithography. 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The course is an introduction to the fundamental processes of lithography with a focus on developing imagery and technical proficiency. Students acquire a working knowledge of the medium while examining aesthetics, contemporary discourse, and history as an art form.

ART 232. Photography. 3 Hr. PR: ART 111 and ART 112 and ART 121 and ART 199. The class provides an introduction to the fundamentals of black and white photography. This course covers the tools, materials and principles of the photographic art, focusing on both the technical and visual aspects of the medium.

ART 233. Photography. 3 Hr. PR: ART 224. Emphasis is placed on the use of large and small format cameras, studio photography, darkroom techniques and lighting. Projects are developed to complement the graphic design studio courses by exploring indoor and outdoor assignments.

ART 234. Introduction to Photography 2. 3 Hr. PR: ART 232. Continued new techniques of black and white photography. Emphasis on processes in the darkroom, specialized lighting methods and use of larger format cameras. Personal and artistic expression will be promoted through projects and critiques.

ART 235. Introduction to Silkscreen. 3 Hr. Printmaking class concerned with creating an understanding and sensitivity towards silkscreen processes, techniques, and developing ideas and images using multiple approaches. Students acquire knowledge of silkscreen, examine its aesthetics, discourse, and history.

ART 240. Ceramics. 3 Hr. PR: ART 111 and ART 112 and ART 122 and ART 199. The course covers basic ceramic techniques including throwing, trimming, ceramic design, glazing, firing and studio practices. Lectures cover basic ceramic material, information and studio procedures.

ART 241. Ceramics. 3 Hr. PR: ART 111 and ART 112 and ART 122 and ART 199. The course continues the study of basic ceramic techniques: throwing, trimming, ceramic design glazing, firing and studio practices. Lectures cover basic ceramic material, information and studio procedures.

ART 242. Art Education: Elementary. 4 Hr. PR: ART 224. This course is designed around the discipline-based content and character of art education at the elementary level. Emphasis is placed on curriculum development which is child centered. Students gain practicum experiences in the schools. Content is based on the national standards.

ART 246. Art Education: Secondary. 4 Hr. PR: ART 224. The course explores curriculum development at the secondary level based on the discipline based content and character of art education. Methods and techniques of instruction are examined in coursework and practicum experiences in the schools. Content is based on the national standards.

ART 270. Introduction to Electronic Media 1. 3 Hr. PR: ART 100 and ART 112 and ART 121 and ART 122. Class provides introduction to fundamentals of digital media. Explores digital photography, animation multimedia. Covers use of various software, focuses on sound, technical foundation and esthetic proficiency in these media.

ART 271. Introduction to Electronic Media 2. 3 Hr. PR: ART 270. A continued exploration into applications and aesthetics of digital media. Attention is given to historical and contemporary critical contest for this media. Students encouraged to create hybrids between media and digital approaches.

ART 293 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

ART 313. Painting. 1-15 Hr. PR: ART 213 and ART 214. The course reaffirms and expands formal criteria established in 213 and 214 and directs individual research into personal, historical and contemporary painting issues in oil, acrylic and related media. (May be repeated for credit.)

ART 315. Arts Administration. 3 Hr. This course provides a practical approach to understanding arts management in not-for-profit organizations. Topics include facilities management, leadership, programming, audience development, board relations, and fundraising.
ART 323. Graphic Design 3. 1-12 Hr. PR: ART 224. Varied hypothetical projects give students a methodology for solving applied design projects in a range of formats. This class will deal with a combination of computer graphics, book arts, publication design and multi-media projects. Portfolio review. (May be repeated for credit.)

ART 324. Graphic Design 4. 1-9 Hr. PR: ART 323. Senior graphic design studio includes a model studio with real projects, most of which are produced and printed. Emphasis is on developing professional skills in design and design management. (May be repeated for credit.)

ART 326. Sculpture. 1-15 Hr. PR: ART 226 and ART 227. Students continue to examine personal iconography as it pertains to aspects of contemporary sculpture. Topics explored are concept-oriented, using stone, concrete, glass, and emphasizing craftsmanship and aesthetic issues. (May be repeated for credit.)

ART 327. Installation Art. 1-15 Hr. PR: ART 122 and ART 199. Students investigate this contemporary art form through a series of temporary, site-specific sculptural environments. Conventional art media and concepts are challenged as students develop alternative solutions to creative problems. (May be repeated for credit.)

ART 330. Printmaking. 1-15 Hr. PR: ART 230 and ART 231. An exploration of color printmaking, advancing imagery through critical contexts. Students focus on technical mastery in lithography, intaglio, relief and alternative processes, expand their knowledge of printmaking’s history and develop creative problem solving skills. (May be repeated for credit.)

ART 332. Intermediate Photography. 3 or 6 Hr. PR: ART 232 and ART 233. Students focus on technical mastery of photography. Expands on the formal and critical criteria established in the introductory courses, and directs creative research into personal, historical, and contemporary issues.

ART 333. Alternative Photography. 1-15 Hr. PR: ART 232. Alternative photography emphasizes creating and manipulating images from and for the camera. Techniques include the traditional silver gelatin print, cyanotypes, liquid light and gum bichromate. A basic knowledge of photography is recommended. (May be repeated for credit.)

ART 335. Forensic Photography. 3 Hr. Students focus on the fundamentals of photography, how to handle a camera and expose film correctly. Include unique forensic environments encountered in forensic work includes fingerprints, crime scenes, and disaster scenes.

ART 340. Ceramics. 1-15 Hr. PR: ART 240 and ART 241. This intense studio concentration is designed to prepare students for graduate studies and/or professional studio practices. Historical and contemporary design issues, kiln design and building, firing, glaze and clay formulation, studio practices and advanced-level throwing and hand-building techniques will be studied. (May be repeated for credit.)

ART 341. Ceramic Production Methods. 3 Hr. PR: ART 240 or Consent. This course expands the student's experiences in ceramics through the use of industrial techniques, production equipment and business tools for the development, production and marketing of ceramic products.

ART 365. Pre-Student Teaching. 3 Hr. PR: ART 265 and ART 266. The course concentrates on curriculum development, research methods, and delivery strategies for K-12 art specialists preparing for their professional semester.

ART 370. Intermediate Electronic Media. 3 or 6 Hr. PR: ART 270 and ART 271. Students will expand explorations in video production from ART 271 and examine opportunities of creative works on the Internet. Building video skills and methodologies, students will create dynamic and artistic web pages.

ART 371. Interactive Art. 3 or 6 Hr. PR: ART 270 and ART 271. Students will utilize skills learned in previous electronic media courses to create projects incorporating a variety of knowledge and interactive softwares. Attention is given to historical and contemporary critical context.

ART 413. Senior Projects in Painting. 6 Hr. PR: 18 hrs. of ART 313. Advanced Study directed toward completion of senior-level projects. Developed to meet individualized creative goals. The course culminates with participation in a senior student exhibition/other exit requirements.

ART 425. Graphic Design: Senior Project. 3 Hr. PR: ART 324. This course is focused on the development of an undergraduate thesis in which each project is individually defined with an umbrella topic. Formats and content vary but each project culminates in a thesis exhibition and an individual audio/visual presentation. (May be repeated for credit.)

ART 426. Senior Projects in Sculpture. 6 Hr. PR: 18 hrs. of ART 326 or consent. Advanced study towards completion of senior-level projects, developed to meet individualized creative goals. The course culminates with participation in a senior student exhibition and other exit requirements.

ART 430. Senior Projects in Printmaking. 6 Hr. PR: 18 hrs. of ART 330 or consent. Advanced study directed toward completion of senior level projects. Projects developed to meet individualized creative goals. The course culminates with participation in a senior student exhibition and other exit requirements.

ART 440. Senior Projects in Ceramics. 6 Hr. PR: 18 hrs. of ART 340 or consent. Advanced study towards completion of senior level projects, developed to meet individualized creative goals. The course culminates with participation in a senior student exhibition and other exit requirements.
ART 470. Senior Projects in Intermedia. 6 Hr. PR: Consent. Advanced study towards completion of senior-level projects in Intermedia. Projects are developed to meet individualized goals. The course culminates with participation in a senior student exhibition as well as other exit requirements.

ART 491 A-Z. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervise, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ART 492. Directed Study. 1-6 Hr.

ART 493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

ART 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ART 495 A-Z. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

ART 496. Senior Thesis. 1-3 Hr. PR: Consent.

ART 497. Research. 1-15 Hr.

ART 498 A-Z. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

African/American Studies (ASP)

ASP 220. Introduction Africana Studies. 3 Hr. An interdisciplinary introduction to the histories, economics, cultural and artistic heritages, political and social experiences of Africans and African-Americans; focusing on the relationships between the two experiences.

ASP 420. Seminar Africana Studies. 3 Hr. PR: ASP 220. Focus on selected aspects of Africana experience. Required for completion of minor in Africana studies.

ASP 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ASP 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ASP 493A. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ASP 493B. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Astronomy (ASTR)

ASTR 106. Descriptive Astronomy. 3 Hr. The celestial sphere, star time, solar time, Kepler's laws, H-R diagram and modern developments. No sophisticated mathematics used; only simple geometrical arguments employed.

ASTR 290. Teaching Practicum. 1-3 Hr.

ASTR 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ASTR 316. Astronomy for Teachers. 3 Hr. PR: Consent. Basic concepts and methods in astronomy and how to teach them using the celestial sphere and geometrical tools. Observational work at night. The use of a telescope and camera.


ASTR 367. Astrophysics 1. 3 Hr. PR: PHYS 314. Physical description of the astronomical universe. Physical principles are used to explain the properties and evolution of stars. Physical properties and effects of the Milky Way’s interstellar medium are examined.

ASTR 368. Astrophysics 2. 3 Hr. PR: ASTR 367. Continuation of ASTR 367. Physical principles are applied to the properties and evolution of the Milky Way and galaxies and to the structure and evolution of the solar system. Physical properties of the universe are examined.

ASTR 469. Observational Astronomy. 3 Hr. PR: PHYS 314. Laboratory course consisting of three detailed projects which aim to acquaint students with current techniques for astronomy data analysis and interpretation across the electromagnetic spectrum.
ASTR 470. General Relativity. 3 Hr. PR: PHYS 314 and PHYS 331. Innovative 'physics-first' introduction to Einstein's relativistic theory of gravity. Topics covered include special relativity, curved space time, spherical stars, gravitational collapse, and black holes, gravitational waves and cosmology.

ASTR 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ASTR 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ASTR 496. Senior Thesis. 1-3 Hr. PR: Consent.

ASTR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

Athletic Training (ATTR)

ATTR 101. Prospective Athletic Training. 3 Hr. An introduction to the clinical and educational components of athletic training including observation hours and basic skill acquisition.

ATTR 121. Sport Injury Control and Management. 3 Hr. Training, conditioning, protection, and other injury prevention measures. First aid, emergency service, and care related to physical education and athletics.

ATTR 122. Sports Injury Control and Management Lab. 1 Hr. PR: Consent. Basic skills in athletic conditioning, application of taping and bracing, equipment fitting, record keeping, modality set-up, emergency procedures for athletic related injuries and the proper management of open wounds. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

ATTR 218. Gross Anatomy Lab. 1 Hr. Analysis of gross anatomy and systems of the trunk and extremities; cadaver laboratory experience.

ATTR 219. Gross Anatomy. 3 Hr. Designed to provide an overview of body systems and gross anatomy of the trunk and extremities.

ATTR 220. Taping/Bracing and Padding. 2 Hr. PR: Consent. Practical application of adhesive tape, elastic wraps, and bracing techniques for prevention and protection of athletic injuries to support an athlete's return to play.

ATTR 221. Advanced Athletic Training 1. 3 Hr. PR: Consent. Designed to provide an in-depth analysis of life-threatening situations and internal injuries associated with athletics.

ATTR 222. Orthopedic Assessment 1. 3 Hr. PR: Consent. Designed to provide in-depth analysis of athletic injury mechanisms to the lower extremity; injury recognition, injury evaluation techniques, and muscle isolation techniques.

ATTR 281. Athletic Training Practicum 1. 2 Hr. PR: Consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

ATTR 282. Athletic Training Practicum 2. 2 Hr. PR: Consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

ATTR 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ATTR 301. Athletic Training Practicum 3. 2 Hr. PR: Junior standing and consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

ATTR 302. Athletic Training Practicum 4. 2 Hr. PR: Junior standing and consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

ATTR 321. Therapeutic Modalities. 3 Hr. PR: Consent. Designed to investigate tissue repair, physiology of hot and cold treatment, therapeutic modalities and pharmacology relevant to athletic injury management.

ATTR 323. Athletic Injury Rehabilitation. 2 Hr. PR: ATTR 219 and ATTR 221 and ATTR 222 and ATTR 332. Designed for the practical applications of athletic training rehabilitation techniques to the lower extremity.

ATTR 324. Athletic Injury Rehabilitation 2. 2 Hr. PR: ATTR 219 and ATTR 221 and ATTR 222 and ATTR 323 and ATTR 332. Designed for the practical application of athletic training rehabilitation techniques to the upper extremity.
ATTR 325. Organization and Administration. 3 Hr. PR: Consent. Designed to analyze various issues and policies in athletic training relevant to training room administration, liability, drug testing, record keeping, and other selected topics.

ATTR 326. Clinical Drug Application. 1 Hr. PR: ATTR 321 and ATTR 323. Designed to provide students with the skills to make basic drug application issues and interactions within the athletic training setting.

ATTR 327. Biomechanics. 3 Hr. PR: Consent. Designed to provide in-depth study of normal and abnormal biomechanics of the lower extremity and spine.

ATTR 332. Orthopedic Assessment 2. 3 Hr. PR: Consent. Designed to provide in-depth analysis of athletic injury mechanics to the upper extremity; injury recognition, injury evaluation techniques, and muscle isolation techniques.

ATTR 403. Athletic Training Practicum 5. 2 Hr. PR: Senior standing and consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

ATTR 404. Athletic Training Practicum 6. 2 Hr. PR: Senior standing and consent. Structured methods of practical application and evaluation of clinical skills and academic knowledge of athletic training students and their progress through the athletic training program.

ATTR 424. Athletic Training Senior Seminar. 3 Hr. PR: Consent. Practical application of athletic training techniques.

ATTR 426. Medical Aspects of Athletic Training. 3 Hr. PR: Consent. Designed to provide students the exposure to a variety of medical concerns, illnesses, and conditions that may occur within the various clinical settings of athletic training.

ATTR 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ATTR 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ATTR 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ATTR 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ATTR 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

ATTR 496. Senior Thesis. 1-3 Hr. PR: Consent.

ATTR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Business Administration (BADM)
BADM 493 A-Z. Special Topics. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

Business Core (BCOR)
BCOR 310. Professional Development 1. 1 Hr. PR or CONC: BCOR 330. The development of skills necessary for the successful study of business, including effective teamwork skills, information search skills, presentation skills, stress management, and time management.

BCOR 315. Professional Development 2. 1 Hr. PR: BCOR 310. The development of essential skills for professional placement, including resume writing, interviewing skills, and job search skills.

BCOR 320. Legal Environment of Business. 3 Hr. Explores the relationship of law, government and ethics to business enterprise. Provides overview of legal and ethical issues relevant to business decision-making and planning and the government regulations of business.

BCOR 330. Information Systems and Technology. 3 Hr. PR: CS 101. Introduces essential information systems concepts for managing competitive firms in a global environment. Utilizes the Internet and builds skills in decision-making using spreadsheets, oral communication using presentation graphics, and data management using database software.

BCOR 340. Business Finance. 3 Hr. PR: (ACCT 202 and ECON 202 and ECON 225 and ENGL 102) and (MATH 150 or MATH 155). Activities of the finance manager in the planning, acquisition, and administration of funds used in a business enterprise.
BCOR 350. Principles of Marketing. 3 Hr. PR or CONC: BCOR 330 and BCOR 310 and BCOR 370. Overview of marketing and the interrelationships between marketing and other business disciplines. Topics include the management of the product, communication, price, and distribution variables as well as introduction to buyer behavior and marketing research.

BCOR 360. Operations and Quantitative Business Methods. 3 Hr. PR: BCOR 370 and BCOR 330. The course is designed to acquaint students with a variety of production and operations management concepts and techniques. Productivity, competitiveness, operations strategy, capacity, location, layout, inventory, forecasting, and supply chain management are key concepts to be covered.

BCOR 370. Managing Individuals and Teams. 3 Hr. Topics include traditional management functions, employee motivation, leadership, team dynamics, individual and group decision-making, and individual differences. Additional topics include social responsibility and ethics, diversity, organizational structure and design, organizational control, and managing innovation and change.

BCOR 410. Professional Development 3. 1 Hr. PR: BCOR 310 and BCOR 315. Transition to the workplace. Provides practical application skills for successful adjustment to the world of work. Topics include personal financial planning, career challenges, professional dress, etiquette, ethics and sensitivity issues.


BCOR 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Bibliography (BIBY)
BIBY 490. Teaching Practicum. 1-3 Hr.

BIBY 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

BIBY 493. Special Topics. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

BIBY 494. Seminar. 1-6 Hr. Seminars arranged for advanced graduate students.

BIBY 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Biochemistry (BIOC)
BIOC 339. Introduction to Biochemistry. I. 3-5 Hr. PR: General chemistry, organic chemistry. (For medical technology, undergraduate biochemistry majors, and other students.) A general introduction to biochemistry with emphasis on human biochemistry. (4 hr. lec; 1 hr. lab.)

BIOC 492. Directed Study. I, II, S. 1-6 Hr. (May be repeated for a maximum of 12 hr.) PR: Consent.

BIOC 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

BIOC 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

BIOC 496. Senior Thesis. 1-3 Hr. PR: Consent.

BIOC 497. Research. 1-6 Hr. Independent research projects.

BIOC 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Biology (BIOL)


BIOL 105. Environmental Biology. I, 3 HR. (Intended for non-biology majors.) Population growth and human impacts on the environment, including ecosystem destruction, biological diversity, pollution, and global climate change are explored to obtain the concepts necessary to understand complex environmental issues of our time.
BIOL 106. Environmental Biology Laboratory. I. 1 Hr. Coreq: BIOL 105. Field and laboratory exercises explore fundamental ecological concepts and environmental problems, such as biodiversity, pollution, and natural resource utilization.

BIOL 107. Biotechnology and Society. 3 Hr. An overview of the use of biotechnology to solve agricultural, medical, and environmental problems. Bioethical concerns and societal impacts of the use of the technologies will be discussed.


BIOL 115. Principles of Biology. I. 4 Hr. An introductory course presenting basic principles of modern biology. This course represents the first in a four-course, integrated sequence required of biology majors. Topics include ecology and evolution, organismal biology, and cellular/molecular biology.

BIOL 117. Introductory Physiology. II. 4 Hr. PR: BIOL 115 or BIOL 101, 102, 103, and 104. Continuation of BIOL 115. The diversity of reproductive, developmental, functional, and integrative mechanisms in plants and animals.

BIOL 122. Human Sexuality. 3 Hr. A study of biological, behavioral and societal aspects of sexuality. Issues considered include changing fecundity, social-legal implications, sex roles, sexually transmitted diseases, populations, erotica, aging, dysfunctions, decision-making skills for sex-related issues.

BIOL 124. The Human Environment. 3 Hr. An examination of several aspects of current worldwide environmental deterioration caused by the actions of humans. Public policies and alternative mitigative strategies are also presented.

BIOL 180. Clinical Techniques. 3 Hr. PR: BIOL 102 and BIOL 104 or consent. A course designed especially for the student enrolled in the medical and paramedical occupational fields. Basic medical vocabulary is emphasized during discussions, demonstrations and/or practice of basic clinical techniques and skills. Topics covered include CPR, vital sign determination, urinalysis, hematology, bacteriology, electrocardiograms, and development of professional attitude and ethics.

BIOL 219. The Living Cell. I. 4 Hr. PR: (CHEM 115 or 117); and BIOL 117. Continuation of BIOL 117. Structure function and diversity of cells with an emphasis on gene expression and cellular phenotype including cell chemistry, energetics, and regulation of cell activities.


BIOL 230. Human Anatomy and Physiology 1. 4 Hr. PR: BIOL 102 and BIOL 104 and nursing major or consent. The study of human body structure and function. Lecture emphasizes the integumentary, skeletal, muscular, and nervous systems, and special senses. Laboratory includes a complete cat dissection.

BIOL 231. Human Anatomy and Physiology 2. 4 Hr. PR: BIOL 230 and Nursing major or consent. A continuation of BIOL 230. The following systems are thoroughly studied: endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive. Laboratory work involves physiological investigations and dissections.


BIOL 298. Honors. I, II, S. PR: Consent. For students in the Honors College with consent by the honors director. Independent reading, study, or research.

BIOL 301. History of Biology. I. 3 Hr. PR: (BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104) or BIOL 115. History of development of biological knowledge with philosophical and social backgrounds.

BIOL 302. Biometry. 3 Hr. PR: STAT 211. Application of quantitative methods and statistics to biological data with emphasis on hands-on hypothesis construction, experimental design, data analysis and biological interpretation of statistical results.


BIOL 311. Advanced Cellular/Molecular Biology-Laboratory. 1 Hr. PR or CONC: BIOL 310. Experimental approaches to the study of cellular systems.

BIOL 313. Molecular Basis of Cellular Growth. 3 Hr. PR: BIOL 219. Study of the integration of internal and external influences as they regulate the division, growth, and differentiation of cells. Topics include hormones as cell effectors, cancer, and stem cells.

BIOL 316. Developmental Biology. II. 3 Hr. PR: BIOL 115 and BIOL 117 and BIOL 219. A molecular genetic analysis of the mechanisms by which multicellular organisms develop from single cells.

BIOL 317. Developmental Biology Laboratory. 1 Hr. PR: BIOL 219. Coreq: BIOL 316. Experimental approaches to the genetic analysis of the mechanisms by which multicellular organisms develop from single cells.

BIOL 321. Total Science Experience Lab. 2 Hr. PR or Conc: BIOL 221. Biological research experience incorporating diverse learning experiences that take place in the process of being a research scientist; including writing grant proposals, manuscripts, and presentation of results in a public forum.

BIOL 324. Molecular Genetics. 3 Hr. PR: BIOL 219. Theoretical and practical knowledge in genetics as a field of study and as an approach for investigating biological problems.

BIOL 325. Molecular Genetics Laboratory. 1 Hr. PR: BIOL 219. Coreq: BIOL 324. The laboratory is a logical sequence of experiments providing actual research experience in molecular genetics. Must be taken at the same time as BIOL 324.

BIOL 336. Vertebrate Embryology. II. 4 Hr. PR: BIOL 115 and BIOL 117 and BIOL 219 and BIOL 221. An experimental and descriptive analysis of vertebrate development.

BIOL 337. Physiological Psychology. I. 3 Hr. PR: 9 Hr. psychology, behavior, physiology, or graduate standing. Introduction to physiological mechanisms and the neural basis of behavior. (Also listed as PSYC 426.)

BIOL 338. Behavioral Ecology. 3 Hr. PR: BIOL 221. Consideration of the influences of environmental factors on short- and long-term regulation, control, and evolution of the behavior of animals.

BIOL 340. Invertebrate Zoology. II. 4 Hr. PR: BIOL 219 and BIOL 221. The evolution of animals without vertebral columns. The laboratory includes field trips, including one that takes an entire weekend. (Dissection kit required.)

BIOL 341. Ichthyology. 4 Hr. PR: BIOL 117. Study of the internal and external structure of fishes, their systematic and ecological relationships, and their distribution in time and space. (Dissection kit required.)

BIOL 348. Basic Neurobiology. 3 Hr. PR: BIOL 219. An introduction to neuroscience, including basic neuroanatomy, neurophysiology, and the relationship between the central nervous system, physiology, and behavior.

BIOL 350. Plant Physiology. II. 4 Hr. PR: CHEM 115 and CHEM 116 and (BIOL 101 and BIOL 103) or BIOL 117. Physiochemical processes of plants.

BIOL 351. Plant Diversity. 4 Hr. PR: (BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104) or BIOL 115. Evolution, morphology, life cycles, ecology, and uses of cyanobacteria, lichens, algae, bryophytes, ferns, gymnosperms, and angiosperms. Laboratory emphasizes comparing living specimens with local field trips.

BIOL 352. Plant Anatomy and Development. II. 4 Hr. PR: BIOL 117 or PLSC 206. How plants (especially angiosperms) develop, stand up, defend themselves, transport food and water, and reproduce; also evolution and uses of wood and bark. Students observe development from spores, seeds, and cuttings. (Two local field trips.)

BIOL 353. Flora of West Virginia. S. 3 Hr. PR: BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104 or BIOL 115. Identification of local woody and herbaceous seed plants, with emphasis on common native and introduced species. Conducted primarily through field trips to nearby areas with the use of dichotomous keys to determine the scientific names of observed specimens.

BIOL 361. Plant Ecology. I. 4 Hr. PR: BIOL 221. Introduction to the four divisions of plant ecology, including physiological ecology, population ecology, community ecology and ecosystem ecology.

BIOL 362. Limnology. I. 4 Hr. PR: (BIOL 101 and BIOL 103) or BIOL 115 or WMAN 224 or consent. Physical, chemical, and biological characteristics of inland waters with emphasis on the structure and function of stream ecosystems. (Also listed as WMAN 446.)

BIOL 363. Plant Geography. II. 3 Hr. PR: BIOL 221. World-wide distribution patterns of plants and factors related to these distributions, including dispersal. Limiting factors, climate, isolation, evolutionary history, plate tectonics, pleistocene glaciations, and human activities. Plant communities and soils of polar, temperate, and tropical biomes are discussed.

BIOL 386. Undergraduate Research. I, II. 1-4 Hr. PR: Written consent of chair and a 2.7 grade point average in biology. Individual laboratory or field experiments supervised by a faculty member.

BIOL 410. Cell and Molecular Biology Methods. 3 Hr. PR: BIOL 219. Introduction to the theory, application, ethic and economics of biotechnologies.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 411</td>
<td>Introduction to Recombinant DNA</td>
<td>4</td>
<td>BIOL 219</td>
<td>An introductory course covering the basic principles and techniques of recombinant DNA technology, includes molecular cloning, isolation of plasmid DNA, agarose/acylamide gel electrophoresis, restriction enzyme mapping, nucleic acid hybridization, and DNA sequencing.</td>
</tr>
<tr>
<td>BIOL 412</td>
<td>Cell Structure and Function</td>
<td>4</td>
<td>BIOL 221</td>
<td>Students gain hands-on experience in methodologies used to study cell structure and function. Light and florescence microscopy are used to address cell signaling, signal transduction, exocytosis, apoptosis, and regulation of gene expression in reproductive endocrinology.</td>
</tr>
<tr>
<td>BIOL 413</td>
<td>Molecular Endocrinology</td>
<td>3</td>
<td>BIOL 219</td>
<td>Hormonal action is discussed at the cellular and molecular levels. Topics include hormone production and regulation, receptor kinetics and activation, and receptor output.</td>
</tr>
<tr>
<td>BIOL 414</td>
<td>Molecular Endocrinology - Laboratory</td>
<td>1</td>
<td></td>
<td>Experimental techniques used to study hormones and receptors.</td>
</tr>
<tr>
<td>BIOL 416</td>
<td>Forensic Biology</td>
<td>4</td>
<td>BIOL 219</td>
<td>A lecture and laboratory course focusing on the latest advances in forensic identification technologies, including advantages and limitations of different approaches. Students can gain extensive hands-on experience in the isolation, quality, and analysis of DNA.</td>
</tr>
<tr>
<td>BIOL 418</td>
<td>General Animal Physiology</td>
<td>4</td>
<td>BIOL 115 and BIOL 117 and BIOL 119 and BIOL 221</td>
<td>In-depth, current treatment of physiological principles which operate at various levels of biological organization in animals of diverse taxonomic relationships. Understanding is developed from background lectures and student analyses in discussion sessions of research literature.</td>
</tr>
<tr>
<td>BIOL 420</td>
<td>General Animal Physiology-Laboratory</td>
<td>1</td>
<td>BIOL 416</td>
<td>After learning basic techniques, students are provided the opportunity to design, execute, and report upon an independent research project in physiology.</td>
</tr>
<tr>
<td>BIOL 421</td>
<td>Animal Behavior</td>
<td>4</td>
<td>BIOL 221 and (BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104) or BIOL 115</td>
<td>Introduction to animal behavior (ethology) emphasizing the ecology and evolution of individual and social behaviors. Laboratory includes independent investigation of behavioral phenomena. (Offered in even-numbered years.)</td>
</tr>
<tr>
<td>BIOL 422</td>
<td>Neuroethology</td>
<td>3</td>
<td>BIOL 219 and (BIOL 337 or BIOL 348 or BIOL 438)</td>
<td>Explores the way sensory systems process information to mediate behavior in a wide variety of animals in order to understand similarities and differences in neural mechanisms.</td>
</tr>
<tr>
<td>BIOL 423</td>
<td>Comparative Anatomy</td>
<td>4</td>
<td>BIOL 115 and 117 and BIOL 219 and BIOL 221 or consent</td>
<td>A functional and evolutionary study of vertebrate structure. (Dissection kit required.)</td>
</tr>
<tr>
<td>BIOL 424</td>
<td>Vertebrate Microanatomy</td>
<td>5</td>
<td>BIOL 115 and BIOL 117 and BIOL 219 and BIOL 221</td>
<td>Structural and functional approach to the study of tissues and organs of vertebrates.</td>
</tr>
<tr>
<td>BIOL 425</td>
<td>Plant Systematics</td>
<td>4</td>
<td>BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104 or BIOL 117</td>
<td>Study of the taxonomy of flowering plants worldwide and related topics in angiosperm classification and evolution. Laboratories emphasize characteristics of selected families of monocotyledons and dicotyledons using living and herbarium material.</td>
</tr>
<tr>
<td>BIOL 427</td>
<td>Plant Development</td>
<td>4</td>
<td>BIOL 221 and (CHEM 235 or AGBI 410)</td>
<td>Experimental studies of plant growth and development.</td>
</tr>
<tr>
<td>BIOL 428</td>
<td>Principles of Evolution</td>
<td>3</td>
<td>BIOL 221</td>
<td>Introduction to the study of evolution, including genetics of evolutionary change, speciation and adaptation molecular evolution, the history of life, extinction, co-evolution and the origins of humans.</td>
</tr>
<tr>
<td>BIOL 429</td>
<td>Methods in Ecology and Biogeochemistry</td>
<td>3</td>
<td>BIOL 221</td>
<td>Introduction to the theory and application of basic analytical tools used in ecology and biogeochemistry. Topics include sampling of terrestrial and aquatic organisms and their environment and the chemical analyses of biological material. (Offered in odd years.)</td>
</tr>
<tr>
<td>BIOL 430</td>
<td>Global Ecology</td>
<td>3</td>
<td>BIOL 221</td>
<td>The Earth viewed as a changing biogeochemical system. Topics include the structure, composition and dynamics of the ecosphere, nutrient cycles, changing atmospheric composition, climate change, ozone depletion, land-use change, biological invasions, and changes in biodiversity.</td>
</tr>
<tr>
<td>BIOL 431</td>
<td>Population and Quantitative Genetics</td>
<td>3</td>
<td>BIOL 221</td>
<td>Relationship of gene and genotype frequencies in populations of diploid organisms and the effects of mutation, selection, and non-random mating in relation to single gene pairs. Application of these concepts to multigenic inheritance of quantitative traits.</td>
</tr>
<tr>
<td>BIOL 432</td>
<td>Honors Investigation and Thesis</td>
<td>1-4</td>
<td>(May be repeated for credit; max. credit 12 hr.)</td>
<td>Second semester of Junior year, recommendation of advisor, biology majors only. Permission required. Supervised readings, investigation, and study.</td>
</tr>
<tr>
<td>BIOL 433</td>
<td>Teaching Practicum</td>
<td>1-3</td>
<td>Consent</td>
<td>Consent. Teaching practice as a tutor or assistant.</td>
</tr>
</tbody>
</table>
BIOL 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

BIOL 492. Directed Study. 1-6 Hr. PR: Consent. Directed study, reading, and/or research.


BIOL 494. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

BIOL 495. Independent Study. 1-6 Hr. Faculty-supervised study of topics not available through regular course offerings.

BIOL 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


BIOL 498. Honors. I, II, S. 1-3 Hr. PR: Consent. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

BIOL 498 A-Z. Honors. 1-3 Hr. PR: Student in Honors Program and consent by the honors director. Independent reading, study or research.

Biometric Systems (BIOM)

BIOM 426. Biometric Systems. 3 Hr. PR: STAT 215 and MATH 261 and CS 111. This course presents an introduction to the principles of operation, design, testing, and implementation of biometric systems, and the legal, social, and ethical concerns associated with their use. (Cross-listed with EE 426.)

BIOM 480. Senior Design Seminar. 2 Hr. PR: ENGL 102 and consent. Penultimate semester. Group senior design projects with individual design assignments appropriate to student's discipline. Complete system-level designs of the subsequent semester's project presented in written proposals and oral presentations. (Equivalent to CPE 480, CS 480, EE 480) (2 hr. lec., 1 hr. conf.)

BIOM 481. Senior Design Project. 3 Hr. PR: BIOM 480; Continuation of BIOM 480. Detailed design and implementation of the system including choice of components, algorithm development, interfacing, troubleshooting, working in groups, and project management. Also covers professional topics, including ethics, liability, safety, socio-legal issues, risks, and employment agreements. (1 hr. lec., 1 hr. conf., 2 hr. lab.)


Business Law (BLAW)

BLAW 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

BLAW 310. Business Law for Managers. 3 Hr. PR: BCOR 320. Survey of legal principles relevant to operation and management of business organizations, including the substantive law of agency and employment, business organizations, credit and bankruptcy.

BLAW 400. Personnel Relations and the Law. 3 Hr. PR: BCOR 320 or consent. The legal principles guiding employer-employee relations, including agency law and the laws regulating employee health, safety, compensation, and benefits, job opportunity, and labor organizing.

BLAW 420. Law for the C.P.A. 3 Hr. PR: BCOR 320. (Credit cannot be received for both BLAW 112 and BLAW 420.) A survey of those areas of commercial and regulatory law with which accountants need familiarity in order to exercise good judgement, practice their profession skillfully and understand their professional responsibility.

BLAW 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

BLAW 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

BLAW 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

BLAW 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

BLAW 496. Senior Thesis. 1-3 Hr. PR: Consent.
BLAW 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Broadcast News (BN)**
BN 191A. Special Topics. 1-3 Hr.

BN 215. Electronic Media and Society. 3 Hr. (Open to all University students.) Survey of the electronic media industry with an emphasis on the role of broadcast journalism in society. Covers historical development, regulation, industry standards, ethics, international media, and contemporary issues.

BN 293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

BN 319. Broadcast News Writing. 3 Hr. PR: Admission to School of Journalism and JRL 215. Gathering, researching, and evaluating facts; reporting and writing news for radio and television; editorial decision making and responsibility; broadcast news ethics. (Lab fees will be assessed for this course.)

BN 385. Radio and Audio Reporting. 3 Hr. PR: BN 319. Writing and reporting news for radio and other digital audio sources. (Lec./Lab.) (Lab fees assessed for this course.)

BN 386. Beginning Television Reporting. 3 Hr. PR: BN 319. Reporting, writing and producing stories for television news using digital video technology; emphasis on visual storytelling, editorial decision making, and ethical and legal considerations. (Lab fees will be assessed for this course.)

BN 486. Broadcast Bureau Reporting. 3 Hr. PR: BN 386 and BN 319. Students work with KDKA producers and news directors to develop, report and shoot stories to air on KDKA-TV. The instructor will hold weekly conferences to further develop writing and reporting skills learned in previous courses.

BN 487. Advanced TV Reporting and Producing. 3 Hr. PR: BN 386. Reporting, writing and producing television news stories using advanced production techniques; producing stories for cable or broadcast television. Work may be aired on local or regional broadcast or cable stations. (Lab fees will be assessed for this course.)

BN 488. Video Production. 1 Hr. PR: BN 386. This course is designed to teach broadcast journalism students advanced digital video and audio techniques for news productions, including field reports, newscasts, and studio-based programs; principles and theories of news production.

BN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (This course will be graded pass/fail.)

BN 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Course will be graded pass/fail.)

BN 493 A-Z. Special Topics. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

BN 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

BN 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

BN 496. Senior Thesis. 1-3 Hr. PR: Consent.

BN 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**Business Technology (BTEC)**
BTEC 101. Introduction to Management. 3 Hr. An introduction to principles and basic considerations of management of all levels, including aspects of management performance in areas of decision-making, planning, organizing, control, and ethics.

BTEC 102. Introduction to Business. 3 Hr. A course designed to introduce students to the internal organization of business by surveying finance, marketing, ethics, law, and information management. Business structures, changes, will be analyzed. Emphasis will also be placed on the effect of global competition and international marketing.

BTEC 103. Personnel Management. 3 Hr. Theory and practice and principles involved in the direction, coordination, and payrolls of personnel.

BTEC 104. Marketing. 3 Hr. Principles and practice of the activities through which small business establishments direct the flow of goods and services to consumers.

BTEC 108. Business Organization and Management: Finance. 3 Hr. A course introducing the student to an overview of business including the management of financing the various forms of business organization. Vocational guidance is given. Emphasis on proper terminology.


BTEC 114. Production, Quality, and Cost Control. 3 Hr. Introduction to management decisions in a manufacturing environment. The course develops student understanding of the management task of designing and operating efficient productive systems, including planning and control, linear programming, budgets, goals, and objectives.

BTEC 115. General Insurance. 3 Hr. Theory of risk and its application to insurance; principles underlying insurance—life, property, casualty, fire and surety. (Offered when sufficient demand is evident.)

BTEC 116. Real Estate. 3 Hr. Principles and practices of real estate business; meets West Virginia Real Estate Commission requirements for licensing purposes. (Offered when sufficient demand is evident.)

BTEC 117. Human Resources Management. 3 Hr. Consideration of problems faced by managers in managerial fields of industry, including wages, safety, medical and insurance programs, retirement programs, employee records, counseling, training, and other employment issues.

BTEC 118. Work Simplification, Time Study, Incentives. 3 Hr. An introduction to processes of work simplification, time study principles and practices, incentives in relation to production, management and control.

BTEC 119. Managerial Decision-Making. 3 Hr. An integrated study of forces which affect managerial decision-making, both internally and externally. An examination of organizational problems, development of alternate solutions, and implementation of an effective plan of action.

BTEC 210. Practicum in Business Technology: Spreadsheets and Database. 3 Hr. A course designed for those interested in staying abreast of technological advances in the use of state-of-the-art equipment; encompasses practical application and use of computers for business as well as home use; highly recommended for those desiring "hands-on" experience.

BTEC 212. Business Law. 3 Hr. A study of the fundamentals of law as applied to contracts, agency, negotiable instruments, sales, partnerships, corporations, insurance, and property.

BTEC 220. Labor Relations. 3 Hr. The development, structure, and functions of laborer and employer in their impact on society; essentials of contract negotiations and arbitration wage policies and problems, basic labor legislation.

BTEC 221. Advanced Real Estate. 3 Hr. PR: BTEC 116. Continuation of BTEC 116. Financing techniques of real estate loans will be discussed, as well as the sources of real estate law, both cases and statutes, and includes basic real estate appraising. Meets West Virginia Real Estate Commission requirements for licensing purposes. (Offered when sufficient demand is evident.)

BTEC 222. Salesmanship. 3 Hr. A study of techniques appropriate to personal selling, both retail and contact, as well as the psychological and human factors involved in sales. Students will conduct and present sales presentations.

BTEC 223. Advertising. 3 Hr. Overview of advertising and sales promotion, development of sales strategies, promotional planning, media selection, and layout.

BTEC 225. Directed Experience. 2 Hr. PR: Business technology major with sophomore standing. Students are placed in appropriate work sites in the community and surrounding area to participate in an on-the-job training experience.


BTEC 256. Managerial Accounting. 3 Hr. PR: ACCT 202. The theory and practice of managerial accounting for small businesses.

BTEC 257. Income Tax Accounting. 3 Hr. PR: ACCT 202 or consent. Preparation of income tax returns: gross income, capital gains, and losses, deductions, tax credits, and other tax regulations mainly pertaining to individuals.

BTEC 258. Income Tax Accounting. 3 Hr. PR: BTEC 257 or consent. A continuation of BTEC 257. Preparation of income tax returns and study of tax regulations pertaining to partnerships, estate, trusts, and corporations. Also considered will be Social Security taxes and federal gift tax.
BTEC 260. Computerized Accounting. 3 Hr. PR: ACCT 201. This course covers pc-based accounting systems.

BTEC 293 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

BTEC 295. Entrepreneurship. 3 Hr. Provides students training in researching, planning, and setting up small businesses. Students analyze the opportunities in their community, discuss financial and ethical dimensions of business, and create a viable business plan.

BTEC 350. Advanced Computer Applications in Business. 4 Hr. PR: CIS 114 and CIS 116 or consent. A study of advanced information concepts for managing business in a competitive environment. The internet, spreadsheet, and database applications will be utilized to research, analyze, and make decisions regarding operations.

BTEC 360. Leadership and Human Behavior. 3 Hr. A study of leadership in relation to employee motivation, decision-making, and team dynamics. Additional topics include ethics and responsibility, diversity, organizational control, and managing change in the workplace.


BTEC 380. Business Ethics. 3 Hr. A study of ethical, cultural, and societal issues facing business and managers with regard to a global business environment.

BTEC 485. Senior Seminar. 4 Hr. PR: BTEC 350 and BTEC 370. A capstone course in which the students will integrate the concepts and principles of the B.A.S. management emphasis through the process of case analysis and other methods.

Business Administration (BUSA)

BUSA 101. Introduction to Business. 3 Hr. PR: Freshmen only. An introduction to the contemporary business world, including international and small business, quality, ethics, and career preparation. The role of accounting, economics, finance, management, and marketing activities are investigated.

BUSA 199. Orientation to Business. 1-3 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

BUSA 293 A-Z. Special Topics I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

BUSA 310. Survey of Business Law. 3 Hr. PR: Junior standing. Overview of business law discipline. Topics include laws and the court system, employment and labor law, business forms and capitalization, business competition law and business ethics.

BUSA 320. Survey of Management. 3 Hr. PR: Junior standing. Overview of management discipline as a process involving planning, organizing, controlling and directing. An integrated view of management including organizational behavior is emphasized.

BUSA 330. Survey of Marketing. 3 Hr. PR: Junior standing. Overview of the marketing discipline. Topics include the management of the product, communication, price, and distribution variables as well as an introduction to buyer behavior and marketing research.

BUSA 340. Survey of Finance. 3 Hr. PR: Junior standing. Overview of the finance discipline. Topics include financial statement analysis, risk, capital budgeting, investments, and security markets.

BUSA 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

BUSA 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

BUSA 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

BUSA 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

BUSA 496. Senior Thesis. 1-3 Hr. PR: Consent.

BUSA 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.
Curriculum and Instruction (C&I)

C&I 187. Introduction to Education. 3 Hr. Current concepts underlying the educational system in the American society. This course gives the student experience in identifying the student’s values, attitudes, and feelings with those of today’s community and youth. Includes a required field experience.

C&I 324. Teaching Language Arts: Secondary School. I, II. 3 Hr. Includes an examination and application of relevant curricular materials and teaching techniques.

C&I 337. Mathematics in the Junior High School and Middle School. II. 3 Hr. PR: 6 Hr. college mathematics or consent. Study of teaching of mathematics in the junior high school and/or middle school; application of mathematics content to teaching; instructional techniques and materials.

C&I 410. Early Childhood Education 1. I, II. 3 Hr. PR: CDFS 316. An introduction to curriculum objectives, instructional methods and materials, and evaluation in early childhood education (Pre-K to 4th grade) that includes a field experience with individualized instruction for one child.

C&I 411. Early Childhood Education 2. I, II. 3 Hr. PR: C&I 410. This course is designed for individuals who will be working in early childhood education Pre-K to 4th grade. Topics include: working with families of young children; designing, teaching and evaluating experiential lessons for small groups of children; and gathering and assessing developmental data on small groups of children. A semester-long field experience with a class of young children is required.


C&I 414. Creative Experiences in Early Childhood. II. 3 Hr. PR: EDUC 200 or equiv. Examination of creative experiences for young children and their relationship to child development. A special focus on play behavior as a learning medium with emphasis on program planning, curriculum development, and instructional strategies.

C&I 416. Early Language and Communication Experiences. I. 3 Hr. PR: EDUC 200 or equiv. Presents activities for developing language and communication skills in children 2-5 years of age. Covers a broad range of temporary and enduring forms of communication in visible and audible media.

C&I 418. Management of Preschool Education. II. 3 Hr. PR: EDUC 200 or equiv. (A field experience with children 2-5 years of age is required.) Planning, designing, and assessing programs for children ages 2-5 years with emphasis on management skills. (Alternate years.)

C&I 424. Approaches to Teaching Language. II. 2 Hr. PR: LING 101 and ENGL 102. Designed for prospective teachers of English and language arts. Focus is upon planning and implementing methods of teaching English as a language. Materials and resources appropriate for public school instruction are analyzed and utilized.

C&I 425. Approaches to Teaching Literature. II. 2 Hr. PR: Junior standing. Designed for prospective teachers of English and language arts. Course focuses upon methodologies for teaching literature in public schools. Workshop format will provide opportunities for peer teaching activities as students apply methods of teaching literature.


C&I 444. Teaching Science: Secondary School. I, II. 3 Hr. PR: Includes an examination and application of relevant curricular materials and teaching techniques.

C&I 454. Teaching Social Studies: Secondary School. I, II. 3 Hr. PR: Includes an examination and application of relevant curricular materials and teaching techniques.

C&I 480 A-Z. Special Problems and Workshops. I, II. S. 2-4 Hr. (Maximum of 8 semester hours may be applied toward the master’s degree.) PR: 14 Hr. in education. Credits for special workshops and short intensive unit courses on methods, supervision, and other special topics.

C&I 490. Teaching Practicum. I, II. S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

C&I 491. Professional Field Experience. I, II. S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program. To be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


C&I 494 A-Z. Seminar. I, II. S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

C&I 495. Independent Study. I, II. S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.


**Child Dev / Family Studies (CDFS)**

CDFS 110. Families Across the Life-Span. I, II. 3 Hr. Explores the physical, psychological, and cognitive developmental changes of individuals who are functioning in family systems that change across the life-span.

CDFS 111. Child Development Observation Lab. 1 Hr. PR: CDFS 110.


CDFS 210. Introduction to Parenting. I. 3 Hr. Emphasis on social and personal definitions of the parental role and on the problems and changes in parent-child relationships.

CDFS 211. Infant Development. 4 Hr. PR: CDFS 110. Developmental characteristics and environmental effects on the child during the prenatal period and the first two years with implications for guidance and care, includes practical experience working with infants and toddlers.

CDFS 212. Early Childhood Development. II, S. 3 Hr. PR: CDFS 110. Physical, social, emotional, and cognitive development of children from conception to seven years with implications for guidance and care in practical settings.

CDFS 316. Child Development Practicum. I, II. 3-4 Hr. PR: CDFS 212 or PSYC 241. Application of child development principles. Involves planning developmentally appropriate activities for three-, four-, and five-year old children at the West Virginia University Child Development Laboratory.


CDFS 320. Family Life Education. I. 3 Hr. Introduces the general philosophy and broad principles of family life education along with the range of programs available. An opportunity is given to plan, implement, and evaluate such educational programs for diverse audiences.

CDFS 321. Family Policy and Law. II. 3 Hr. Explores at the federal and state level the process of policy formation, implementation, and evaluation as it relates to family life. Introduces the laws regulating such family life activities as marriage, parenting, and divorce.

CDFS 412. Adolescent Development. II. 3 Hr. PR: Senior or graduate standing and CDFS 110. The adolescent in contemporary American culture, including normative physical, social, and personality development; relationships within various typical social settings. (e.g., family, school, community, peer group.)

CDFS 413. Contemporary Issues in Family Relations. II. 3 Hr. PR: Senior or graduate standing or consent. Study of recent research findings in the major areas of family relationships. Topics include effects of family violence, substance abuse, poverty, and health. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

CDFS 415. Family Interaction and Communication. II. 3 Hr. PR: Senior or graduate standing or consent. The family as a social group; processes related to well-being for a variety of family relationships.

CDFS 420. The Art of Leadership in Early Childhood. 3 Hr. The course will prepare students to develop effective leadership skills in early childhood settings, advocate for children and families and develop collaborative partnerships.

CDFS 421. Child Care Center Administration. 3 Hr. Focuses on skills necessary for directing a high quality child care center. Participants will gain knowledge in program planning, development, and maintenance.

CDFS 422. Business of Child Care. 3 Hr. This course is designed to provide essential business and management lessons in operating a high quality early child care center.

CDFS 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

CDFS 491 A-Z. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

CDFS 494. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

CDFS 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

CDFS 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

CDFS 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Civil Engineering (CE)**

CE 200. Land Surveying. 3 Hr. PR: MATH 128. Introduction to current surveying methods and equipment as applied to mapping projects and simple construction layout. Leveling, angles and directions, distance measurements, and fundamental traverse calculations along with mapping principles are emphasized.

CE 201. Introduction to Civil Engineering. 1 Hr. PR: ENGR 102. Overview of civil engineering disciplines and careers including structural, environmental, hydrotechnical, geotechnical and transportation engineering. Addresses the technical concepts and career opportunities in each area. Emphasis on providing guidance for success in completing undergraduate studies.

CE 210. Introduction CAAD for Engineering. 2 Hr. PR: ENGR 102 or consent. An introduction to computer-aided design and drafting (CADD) software for communicating design plans and specifications for civil and environmental engineering projects.

CE 293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CE 301. Engineering Professional Development. 1 Hr. Non-technical issues facing graduate engineers; career paths, job search, professional registration, legal issues, engineering ethics, professional societies, and life-long learning.

CE 305. Introduction to Geomatics. 3 Hr. PR: CE 210 or consent. Introduction to the theory and practice of the technologies used to measure, calculate, acquire, process, and display terrain and other data for use in mapping, planning, designing, constructing, and managing the built and natural environments. (Two 75-minute periods.)

CE 310. Civil Engineering Materials. 3 Hr. PR: MAE 243. Physical, chemical, and molecular properties of materials commonly used in civil engineering works. Influence of these properties on the performance and use of materials. (3 hr. lec.)

CE 321. Fluid Mechanics for Civil Engineers. 3 Hr. PR: MATH 261 and MAE 242. Fluid properties, statics, and kinematics; conservation laws for mass, momentum, and mechanical energy; piezometric head and grade lines; dimensional analysis and similitude; weir and orifice flow; introduction to flow in pipes and open channels. (3 hr. lec.)

CE 322. Hydrotechnical Engineering. 3 Hr. PR: CE 321. Flow in pipes and pipe networks; pumps; uniform and gradually varied open channel flow; design of water distribution, sanitary sewer, and storm water collection systems. (3 hr. lec.)

CE 332. Introduction to Transportation Engineering. 4 Hr. Integrated transportation systems from the standpoint of assembly, haul, and distribution means. Analysis of transport equipment and traveled way. Power requirements, speed, stopping, capacity, economics, route location. Future technological developments and innovations. (3 hr. lec., 3 hr. lab.)

CE 347. Introduction to Environmental Engineering. 4 Hr. PR: Consent. Introduction to physical, chemical, and biological characteristics of waters and wastewaters, and fundamental principles of water and wastewater treatment including hands-on laboratory exercises. (3 hr. lec., 2 hr. lab.)

CE 351. Introductory Soil Mechanics. 4 Hr. PR: MAE 243. Introduction to geotechnical engineering, fundamental soil properties, classification of soils, soil compaction, permeability, compressibility, and consolidation of soils, shear strength, lateral earth pressures. (3 hr. lec., 3 hr. lab.)

CE 361. Structural Analysis 1. 4 Hr. PR: MAE 243 or consent. Stability, determinacy, and equilibrium of structures; shear and bending moment diagrams of determinate and indeterminate beams and frames; analysis of trusses; displacement of planar structures by geometric and energy methods. (3 hr. lec., 3 hr. lab.)

CE 405. Principles of Boundary Surveying. 3 Hr. PR: CE 205 or Consent. A study of the retacement requirements for a metes and bounds survey system. The study will include interpretation and writing of the property descriptions, legal principles related to boundary establishment, and analytical approaches to boundary location. (3 hr. lec.)

CE 412. Concrete and Aggregates. 3 Hr. PR: CE 310 or consent. Considerations and methods for the design of concrete mixes. Properties of portland cement and aggregates and their influence on the design and performance of concrete mixtures. Testing of concrete and aggregate and the significance of these tests. (2 hr. lec., 3 hr. lab.)
CE 413. Construction Methods. 3 Hr. PR: Junior or Senior standing in civil engineering. Study of construction methods, equipment, and administration with particular emphasis on the influence of new developments in technology. (3 hr. lec.)

CE 414. Construction Engineering. 3 Hr. PR: Senior standing. Introduce student to the role of the civil engineer in the construction process, including critical path analysis, productivity estimation, equipment capability and selection.

CE 415. Flexible Pavements. 3 Hr. PR: CE 310. Design, construction and maintenance of flexible pavements, including material characterization, mix design, construction methods, pavement design and evaluation, and maintenance procedures.

CE 416. Advanced Concrete Materials. 3 Hr. PR: CE 412 or consent. Microstructure and properties of portland cement pastes, rheology, maturities, strength properties, non-linear fracture mechanics. Early age volume changes, creep and shrinkage models, transport mechanism and durability of concrete, special concretes.

CE 420. Computational Fluid Mechanics. 3 Hr. PR: CE 321 and ENGR 102 or consent. Use of the computer in elementary hydraulics, open channel flow, potential flow, and boundary layer flow, numerical techniques for solution of algebraic equations, ordinary differential equations, and partial differential equations. (3 hr. lec.)

CE 425. Engineering Hydrology. 3 Hr. PR: CE 321 or Consent. Scientific basis of the hydrologic cycle and its engineering implications; rainfall-runoff processes, hydrographs, flood routing, and statistical methods. (3 hr. lec.)

CE 427. Water Resources Engineering. 3 Hr. PR: CE 425. Application of hydrologic and hydraulic principles in the design and analysis of water resource systems; probability concepts and economics in water resource planning, water law, reservoir operations, hydraulic structures, flood damage mitigation, hydroelectric power, and drainage. (3 hr. lec.)

CE 431. Highway Engineering. 3 Hr. PR: CE 332 and CE 351. Highway administration, economics and finance; planning and design; subgrade soils and drainage; construction and maintenance. Design of a highway. Center line and grade line projections, earthwork and cost estimates. (2 hr. lec., 3 hr. lab.)

CE 433. Urban Transportation Planning and Design. 3 Hr. PR: CE 332 or consent. Principles of planning and physical design of transportation systems for different parts of the urban area. Land use, social, economic, and environmental compatibilities emphasized. Evaluation and impact assessment. (3 hr. lec.)

CE 435. Railway Engineering. 3 Hr. PR: CE 205. Development and importance of the railroad industry. Location, construction, operation, and maintenance. (3 hr. lec.)

CE 436. Pedestrian/Bike Transportation. 3 Hr. Planning, design, operation and maintenance of pedestrian and bicycle facilities, including multi-use trails; policies to encourage non-motorized travel; traffic calming; accessibility and ADA requirements; connections to transit.

CE 441. Public Health Engineering. 3 Hr. PR: Consent. Engineering aspects involved in control of the environment for protection of health and promotion of comfort of humans. Communicable disease control, milk and food sanitation, air pollution, refuse disposal, industrial hygiene, and radiological health hazards. (3 hr. lec.)

CE 442. Environmental Aerosol Science. 3 Hr. This course will give an understanding of the basic principles behind aerosol generation, measurement, mechanics and toxicity for aerosols found in the environment.

CE 443. Environmental Science and Technology. 3 Hr. PR: Engineering major. Issues of global atmospheric change, minimization and control of hazardous wastes, groundwater contamination, water pollution, air pollution, solid waste control, and management of water and energy resources. (3 hr. lec.)

CE 445. Properties of Air Pollutants. 3 Hr. PR: Consent. Physical, chemical, and biological behavioral properties of dusts, droplets, and gases in the atmosphere. Air pollutant sampling and analysis. Planning and operating air pollution surveys. (2 hr. lec., 3 hr. lab.)

CE 447. Environmental Engineering Design. I. 3 Hr. PR: CE 347. Process design of treatment/remediation systems; comparison of alternatives and preliminary cost evaluation. (2 hr. lec., 3 hr. lab.)

CE 451. Foundation Engineering. 3 Hr. PR: CE 351. Subsurface investigations and synthesis of soil parameters for geotechnical design and analysis, concepts of shallow and deep foundation design, geotechnical design of conventional retaining walls, computerized analysis and design of soil/foundation interaction; case histories. (3 hr. lec.)

CE 453. Earthwork Design. 3 Hr. PR: CE 351. Use of soil mechanics principles in the analysis, design and construction of earth structures. Principles of compaction and compaction control; an introduction to slope stability analysis and landslides; earth reinforcement systems, and ground improvement techniques. (3 hr. lec.)

CE 454. Geotechnical Engineering Field Methods. 3 Hr. PR: CE 351. Soil exploration and groundwater sampling; in-situ determination of properties using split spoon, cone, dilatometer, pressuremeter, and vane equipment. Instrumentation for monitoring field performance and challenges associated with exploration and monitoring in geotechnical/geoenvironmental engineering. (3 hr. lec.)
CE 461. Structural Analysis 2. 3 Hr. PR: CE 361 or Consent. Fundamental theory of statically indeterminate structures; analysis of indeterminate beams, frames, and trusses by stiffness and flexibility methods; study of influence lines for beams, frames, and trusses. (3 hr. lec.)

CE 462. Reinforced Concrete Design. 3 Hr. PR: CE 361. Behavior and design of reinforced concrete members. Material properties, design methods and safety consideration, flexure, shear, bond and anchorage, combined flexure and axial load, footings, introduction to torsion slender columns, and pre-stressed concrete.

CE 463. Steel Design. 3 Hr. PR: CE 361. Material properties, design of steel bridge and building systems with emphasis on connections, beams, columns, plastic design, and cost estimates.

CE 464. Timber Design. 3 Hr. PR: CE 361. Fundamentals of modern timber design and analysis. Topics include wood properties, design of beams, columns, trusses, and other structures using dimension lumber, glue-laminated products and composites.

CE 465. Conceptual Design of Structures. 3 Hr. PR: CE 361 or Consent. Classification, function, and conceptual analytical understanding of structural systems and components; design codes and modeling of loads; behavior of components and systems; design principles of structural systems. (3 hr. lec.)

CE 466. Transportation Systems Rehabilitation and Maintenance. 3 Hr. Introduction to rehabilitation and maintenance of transportation infrastructure; definitions, issues and problems; environmental impact, pavement and bridge maintenance and rehabilitation methods with special consideration of stability, scour, and subsidence. (3 hr. lec.)

CE 479. Integrated Civil Engineering Design. 3 Hr. PR: Senior standing. Integration of the civil engineering curriculum by comprehensive design experience to professional standards. Project(s) are performed in student group(s) under faculty supervision.

CE 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

CE 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

CE 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CE 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

CE 495: Independent study. I, II, S. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.

CE 496. Senior Thesis. 1-3 Hr. PR: Consent.

CE 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Childcare (CHCR)
CHCR 170. The Basics of Childcare. 2 Hr. Provides basic training required by the state of West Virginia for licensing or employment for all family childcare providers, center and school-age directors, program supervisors, site coordinators, and lead teachers in pre-school settings.

CHCR 171. Introduction to Early Childhood Education. 3 Hr. Theories and practices related to the young child as well as observations of different learning facilities will be explored to help develop an understanding of the field and the teacher’s role.

CHCR 272. Fundamentals of Early Childhood Education. 3 Hr. Theories and practices related to young children’s learning environments will be studied as well as the methods for implementation. Also included will be guidance and discipline as it relates to the learning environment.

CHCR 295. Practicum in Early Childhood Education. 3 Hr. Presents supervised learning experiences in a specific setting at the primary level, preschool, day care, or Head Start. Materials covering field trips, ethnic theme unit planning and implementing, goal setting, and resume writing will be included.

Chemical Engineering (CHE)
CHE 102. Intro to Chemical Engineering. 3 Hr. PR: ENGR 101 and PR or CONC: (CHEM 116 or CHEM 118). Overview of traditional and emerging areas of chemical engineering, projects involving computational and programming tools, design projects, written and oral presentation of results, discussions of professional and ethical behavior relating to the engineering profession.
CHE 201. Material and Energy Balances 1. 3 Hr. PR: MATH 155 and CHEM 116 and PR or CONC: ENGR 102 or CHE 102. Introduction to chemical engineering fundamentals and calculation procedures, industrial stoichiometry, real gases and vapor-liquid equilibrium, heat capacities and enthalpies; unsteady material balances and energy balances. (2 hr. lec., 2 hr. calc. lab.)

CHE 202. Material and Energy Balances 2. 3 Hr. PR: CHE 201 and PR or CONC: CHE 230. Continuation of CHE 201. (2 hr. lec., 2 hr. calc. lab.)

CHE 230. Numerical Methods for ChE. 3 Hr. PR: (ENGR 102 or CHE 102) and MATH 156 and PR or CONC: CHE 202 and MATH 251. Numerical solution of algebraic and differential equations with emphasis on process material and energy balances. Statistical methods, optimization, and numerical analysis. (2 hr. lec., 2 hr. calc. lab.)

CHE 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CHE 310. Process Fluid Mechanics. 3 Hr. PR: MATH 251 and CHE 202. Fluid statics, laminar and turbulent flow, mechanical energy balance, Bernoulli equation, force balance, friction, flow in pipes, pumps, metering and transportation of fluids, flow through packed beds and fluidized beds. Laboratory demonstrations and experiments. (2 hr. lec., 2 hr. calc. lab.)

CHE 311. Process Heat Transfer. 3 Hr. PR: MATH 251 and CHE 202. Conductive heat transfer, convective heat transfer, design and selection of heat exchange equipment, evaporation, and radiation. Applications, laboratory demonstrations, and experiments. (2 hr. lec., 2 hr. calc. lab.)

CHE 312. Separation Processes. 4 Hr. PR: CHE 310 and CHE 311 and CHE 320. Equilibrium stage and multiple stage operations, differential countercurrent contracting, membrane separations, fluid-particle separations. Laboratory demonstrations and experiments. (3 hr. lec., 2 hr. calc., lab.)

CHE 315. CHE Transport Analysis. 3 Hr. PR: CHE 310 and CHE 311 and CHE 320 and MATH 261. Development of fundamental relationships for momentum, heat and mass transfer for flow systems to include chemical reactions, interphase transport, and transient phenomena. Development and use of microscopic and macroscopic balance equations.

CHE 320. Chemical Engineering Thermodynamics. 3 Hr. PR: CHE 202 and MATH 251. First and second laws of thermodynamics. Thermodynamic functions for real materials. Physical equilibrium concepts and applications. (2 hr. lec., 2 hr. calc. lab.)

CHE 325. Chemical Reaction Engineering. 3 Hr. PR or CONC: CHE 312. Application of material balances, energy balances, chemical equilibrium relations, and chemical kinetic expressions to the design of chemical reactors. (3 hr. lec.)

CHE 326. Reaction Phenomena. 3 Hr. PR: CHE 320 and PR or CONC: CHE 325. Theory and application of reaction kinetics, analysis of rate data, reaction equilibrium, and catalysis. The application of these phenomena to industrial relevant systems will be emphasized.

CHE 366. Materials Science. 3 Hr. PR: CHEM 116 and junior standing in engineering and mineral resources or chemistry. Chemical bonding and structures of metals, ceramics, and organic materials; the dependence of properties upon these structures and bonding conditions; thermal and mechanical stresses; corrosion; synthesis and preparation of materials.

CHE 381. Introduction to Biomedical Engineering. 3 Hr. PR: BIOL 235 and MATH 261 and CHEM 116. This course covers molecular and physiological principles that provide the basis for biomedical engineering. Quantitative approaches for querying biological systems will be emphasized through detailed problem-solving sessions.

CHE 412. Particle Processing. 4 Hr. PR: CHEM 342 or CHEM 346 or CHE 320 or MAE 320 or MAE 321. Processes of particle processing such as size separation, size reduction, dewatering and concentration; flotation of oxide and sulfide minerals. Plant practice for the processing of minerals will be covered by example. (3 hr. lec., 3 hr. lab.)

CHE 413. Extractive Processing. 4 Hr. PR: CHEM 342 or CHEM 346 or CHE 320 or MAE 320 or MAE 321. Topics include the basic mechanisms of unit processes of leaching, solvent extraction, and electrowinning; roasting, smelting and refining. (3 hr. lec., 3 hr. lab.)

CHE 414. Coal Conversion Engineering. 3 Hr. PR: CHEM 233; and PR or CONC: CHE 312, and CHE 325. Coal conversion processes from the unit-operations approach; thermodynamics, kinetics, and evaluation of system requirements and performance. (3 hr. lec.)

CHE 435. Chemical Process Control. 3 Hr. PR: CHE 312 and CHE 325. Transient behavior of chemical process flow systems, linearization and stability. Process control system design including frequency response analysis. Instrumentation and hardware.

CHE 441. Interfacial Phenomena. 3 Hr. PR: CHE 315 and CHEM 346 or consent. Processes occurring at fluid/fluid and fluid/solid interfaces. Interfacial tension, contact angle, wetting, transport phenomena near interfaces, properties and stability of colloids, colloidal transport phenomena, surfactants, micelles and emulsions. (3 hr. lec.)
CHE 450. Unit Operations Laboratory 1. 2 Hr. PR: CHE 312 and CHE 325. Operation of chemical process engineering equipment; collection, analysis, and evaluation of laboratory report preparation. (4 hr. lab.)

CHE 451. Unit Operations Laboratory 2. 2 Hr. PR: CHE 450. Continuation of CHE 450. (4 hr. lab.)

CHE 455. Chemical Process Design 1. 4 Hr. PR: CHE 312 and CHE 325. Analysis, synthesis, and design of chemical process systems. Engineering economics, safety, professional aspects of the practice of chemical engineering. Includes a group chemical plant design project, as well as individual design projects. (3 hr. lec., 4 hr. des. lab.)

CHE 456. Chemical Process Design 2. 3 Hr. PR: CHE 455. Continuation of CHE 455.

CHE 461. Polymer Science and Engineering. 3 Hr. PR: CHEM 233 and PR or CONC: CHE 315. Polymer classification, polymer synthesis, molecular weights and experimental techniques, thermodynamics, rubber elasticity, mechanical behavior, crystallization, diffusion, rheology, extrusion and injection molding. (3 hr. lec.)

CHE 462. Polymer Processing. 3 Hr. PR: Junior standing in engineering and mineral resources. Flow behavior in idealized situations; extrusion; calendaring; coating; injection molding; fiber spinning; film blowing; mixing; heat and mass transfer; flow instabilities. (3 hr. lec.)

CHE 463. Polymer Composites Processing. 3 Hr. PR: Junior standing in engineering and mineral resources. Advantages and applications of polymer composites; chemistry and kinetics of thermosetting polymers; hand lay up and spray up; compression molding; resin transfer molding; reaction injection molding; filament winding; pultrusion. (3 hr. lec.)

CHE 466. Electronic Materials Processing. 3 Hr. PR: Junior standing in engineering and mineral resources. The design and application of thermal, plasma, and ion assisted processing methodologies; solid state, gas phase, surface, and plasma chemistry underpinnings; thin film nucleation and growth; the effect of processing methods and conditions on mechanical, electrical, and optical properties. (3 hr. lec.)

CHE 471. Biochemical Engineering. 3 Hr. PR: CHE 325 or consent. Kinetics of enzymatic and microbial reactions, interactions between biochemical reactions and transport phenomena, analysis and design of bioreactors, enzyme technology, cell cultures, bioprocess engineering. (3 hr. lec.)

CHE 472. Biochemical Separations. 3 Hr. PR or CONC: CHE 312 or consent. Modeling and design of separation processes applicable to recovery of biological products. Topics include filtration, centrifugation, extraction, adsorption, chromatography, electrophoresis, membranes, crystallization, examples from industry. (3 hr. lec.)

CHE 475. Chemical Process Safety. 3 Hr. PR: CHE 202 or consent. Introduction to safety, health and loss prevention in the chemical process industry; regulations, toxicology, hazard identification, system safety analysis and safety design techniques. (3 hr. lec.)

CHE 476. Pollution Prevention. 3 Hr. PR or CONC: CHE 312 and CHE 325 and CHE 326. Environmental risk and regulations; fate and persistence of chemicals; green chemistry; evaluation and improvement of pollution performance during chemical process design; life cycle analysis; industrial ecology.

CHE 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

CHE 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

CHE 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CHE 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

CHE 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

CHE 496. Senior Thesis. 1-3 Hr. PR: Consent.

CHE 498. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study or research.

Chemistry (CHEM)

CHEM 110. Introduction to Chemistry. I, II. 2 Hr. Required for students whose ACT/SAT/placement examination performance indicate need for introductory work before enrolling in other chemistry courses. Scientific terminology and concepts; chemical arithmetics; chemical symbols, formulae and equations; mole concepts; problem solving. May not count for credit toward graduation if taken after credit for another course in chemistry has been established.
CHEM 111. Survey of Chemistry. I. 4 Hr. Designed primarily for students taking only one year of college chemistry. Atomic structure; chemical bonding; acids, bases, and salts; stoichiometry; oxidation-reduction. 3 Hr. lec., 3 Hr. lab. (Students may not receive credit for CHEM 115 or CHEM 117 and for CHEM 111.) (CHEM 111 and CHEM 112 cannot be used as pre-requisite courses for organic chemistry; students anticipating the possibility or likelihood of taking organic chemistry must have credit for CHEM 115 and CHEM 116 or for CHEM 117 and CHEM 118.)

CHEM 112. Survey of Chemistry. II. 4 Hr. PR: CHEM 111. Continuation of CHEM 111. Nuclear chemistry; air and water pollution; useful natural materials; consumer chemistry; introduction to organic and biochemistry. 3 Hr. lec., 3 Hr. lab. (Students may not receive credit for CHEM 116 or CHEM 118 and for CHEM 112.) (CHEM 111 and CHEM 112 cannot be used as pre-requisite courses for organic chemistry; students anticipating the possibility or likelihood of taking organic chemistry must have credit for CHEM 115 and CHEM 116 and for CHEM 117 and CHEM 118).

CHEM 115. Fundamentals of Chemistry. I, II. 4 Hr. PR: Satisfactory ACT/SAT or placement examination performance, or a score of 4 or 5 on AP Chemistry examination. A more advanced treatment of the principles and theories of chemistry than offered in CHEM 115 and CHEM 116. Primarily for students specializing in chemistry. 3 Hr. lec., two 3 Hr. lab. (Students may not receive credit for CHEM 116 and for CHEM 117 or CHEM 118.) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

CHEM 116. Fundamentals of Chemistry. I, II. 4 Hr. PR: CHEM 115. Continuation of CHEM 115. 3 Hr. lec., 3 Hr. lab. (Students may not receive credit for CHEM 118 and for CHEM 112 or CHEM 116.) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

CHEM 117. Principles of Chemistry. I. 5 Hr. PR: Satisfactory ACT/SAT and placement examination performance, or a score of 4 or 5 on AP Chemistry examination. More advanced treatment of the principles and theories of chemistry than offered in CHEM 115 and CHEM 116. Primarily for students specializing in chemistry. 3 Hr. lec., two 3 Hr. lab. (Students may not receive credit for CHEM 117 and for CHEM 111 or CHEM 115.)

CHEM 118. Principles of Chemistry. II. 5 Hr. PR: CHEM 117. Continuation of CHEM 117. 3 Hr. lec., two 3-Hr. lab. (Students may not receive credit for CHEM 118 and for CHEM 112, CHEM 116 or CHEM 215.)

CHEM 215. Introductory Analytical Chemistry. I. 4 Hr. PR: CHEM 116. Volumetric analysis, gravimetric analysis, solution equilibria, spectrophotometry, separations, and electrochemical methods of analysis. 2 Hr. lec., two 3 Hr. lab. (Students may not receive credit for CHEM 215 and for CHEM 117 and CHEM 118.)

CHEM 231. Organic Chemistry: Brief Course. II. 4 Hr. PR: CHEM 116. Emphasis on biological applications for students in medical technology, agriculture, and family resources. Nomenclature, structure, reactivity, and stereochemistry are stressed. 3 Hr. lec., 3 Hr. lab. (Students may not receive credit for CHEM 231 and for CHEM 233 and CHEM 234.)

CHEM 233. Organic Chemistry. I, II. 3 Hr. PR: CHEM 116 or CHEM 118; and PR or CONC: CHEM 235. Basic principles of organic chemistry. Modern structural concepts, the effect of structure on physical and chemical properties, reactions and their mechanisms and application to syntheses. 3 Hr. lec. (Students may not receive credit for CHEM 233, CHEM 234, and for CHEM 231.)

CHEM 234. Organic Chemistry. I, II. 3 Hr. PR: CHEM 233 and CHEM 235 and PR or CONC: CHEM 236. Continuation of CHEM 233. (3 hr. lec.)

CHEM 235. Organic Chemistry Laboratory. I, II. 1 Hr. PR or CONC: CHEM 233. Fundamental organic reactions and the preparation of organic compounds. (3 hr. lab.)

CHEM 236. Organic Chemistry Laboratory. I, II. 1 Hr. PR: CHEM 233 and CHEM 235 and PR or CONC: CHEM 234. Continuation of CHEM 235. (3 hr. lab.)

CHEM 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CHEM 310. Instrumental Analysis. II. 3 Hr. PR: CHEM 215 and Physical Chemistry. Lectures and demonstrations. Fundamentals of instrumental methods applied to chemical analyses: electrochemistry, spectroscopy, mass spectrometry, and chromatography. 2 Hr. lec., 1 Hr. demonstration.

CHEM 312. Environmental Chemistry. II. 3 Hr. PR: CHEM 215 and CHEM 234 and Physical Chemistry. Study of the nature, reactions, transport, and fates of chemical species in the environment. 2 Hr. lec., 1 Hr. demonstration.

CHEM 313. Instrumental Analysis Laboratory. I. 1 Hr. PR: CHEM 310. Practical application of modern instrumental methods to problems in chemical analysis. (3 hr. lab.)

CHEM 335. Methods of Structure Determination. I. 4 Hr. PR: CHEM 234 and CHEM 236. Use of chemical methods and UV, IR, NMR, and mass spectroscopy to elucidate structures of organic compounds. For students in chemistry and related fields who may need these methods in research and applied science. 2 Hr. lec., two 3-Hr. lab.

CHEM 337. Polymer Chemistry. I. 3 Hr. PR: CHEM 234 and physical chemistry. Methods, mechanisms, and underlying theory of polymerization. Structure and stereochemistry of polymers in relation to chemical, physical, and mechanical properties. (3 hr. lec.)
CHEM 339. Organic Syntheses. II. 3 Hr. PR: CHEM 234 and CHEM 236. Modern synthetic methods of organic chemistry. (1 hr. lec., two 3-hr. lab.)

CHEM 341. Physical Chemistry; Brief Course. II. 3 Hr. PR: A grade of C or better in CHEM 116 (CHEM 215 if CHEM major.) MATH 156, and PHYS 102 or 112. Beginning physical chemistry covering the subjects of chemical thermodynamics, chemical dynamics, and the structure of matter. 3 Hr. lec. (Students may not receive credit for CHEM 346 and 348 and for CHEM 341.)

CHEM 342. Experimental Physical Chemistry. I, II. 1 Hr. PR: (CHEM 341 or CHEM 346) and CHEM 215 and (CHEM 235 or CHEM 231). Laboratory work in physical chemistry designed to accompany CHEM 341. (One 3-hr. lab.)

CHEM 346. Physical Chemistry. I. 3 Hr. PR: CHEM 234, MATH 156, and PHYS 112. A first course in physical chemistry. Topics include a study of thermodynamics and chemical equilibria. 3 Hr. lec. (Students may not receive credit for CHEM 346 and for CHEM 341.)

CHEM 347. Physical Chemistry Laboratory. II. 1 Hr. PR: (CHEM 118 or CHEM 215) and CHEM 346. Experimentation illustrating the principles of physical chemistry and offering experience with chemical instrumentation. (One 3-hr. lab.)

CHEM 348. Physical Chemistry. II. 3 Hr. PR: CHEM 346 and MATH 251. Continuation of CHEM 346. Chemical dynamics and the structure of matter. (3 hr. lec.) (Students may not receive credit for CHEM 348 and for CHEM 341.)

CHEM 349. Physical Chemistry Laboratory. I. 2 Hr. PR: CHEM 346 and CHEM 347 and CHEM 348. Continuation of CHEM 347. (Two 3-hr. lab.)

CHEM 401. Chemical Literature. I. 1 Hr. PR: CHEM 234 and (CHEM 341 or CHEM 340). Study of techniques for locating, utilizing, and compiling information needed by the research worker in chemistry. (1 hr. lec.)

CHEM 403. Undergraduate Seminar. II. 1 Hr. PR: CHEM 401. Instruction in design and presentation of topics of current chemical interest. 1 Hr. individual instruction and/or lecture.

CHEM 411. Intermediate Analytical Chemistry. I. 3 Hr. PR: CHEM 215 and physical chemistry. Concepts underlying modern analytical procedures and their application to the solution of contemporary problems; presented at the intermediate level. (3 hr. lec.)

CHEM 414. Computer Methods in Analytical Chemistry. 1 Hr. PR: CHEM 310; and PR or CONC: CHEM 313. Instruction in the use of data acquisition and data processing systems in the analytical chemistry lab. (3 hr. lab.)

CHEM 422. Intermediate Inorganic Chemistry. I. 3 Hr. PR: Physical chemistry. Structure, bonding, and reactivity of compounds of main-group and transition metal elements. Molecular structure and symmetry, solid state chemistry, ligand field theory, and coordination chemistry. (3 hr. lec.)

CHEM 423. Inorganic Synthesis Laboratory. II. 2 Hr. PR: CHEM 422. Application of modern synthetic and spectroscopic methods of analysis to the preparation and characterization of main group, solid-state, transition metal, and organometallic compounds. (Two 3-hr. lab.)

CHEM 441. Chemical Crystallography. II. 3 Hr. PR or Conc.: Physical chemistry or consent. Applications of X-ray diffraction of crystals to the study of crystal and molecular structure. Includes theories of diffraction and crystallographic methods of analysis. (3 hr. lec.)

CHEM 444. Colloid and Surface Chemistry. II. 3 Hr. PR: Physical chemistry. Selected topics in the properties and physical chemistry of systems involving macromolecules, lyophobic colloids, and surfaces. (3 hr. lec.)

CHEM 450. Bonding and Molecular Structure. I. 3 Hr. PR: CHEM 348. Introduction to the quantum theory of chemical bonding. Atomic structure, theoretical spectroscopy, predictions of molecular structures and bond properties. (3 hr. lec.)

CHEM 460. Forensic Chemistry. 3 Hr. PR: CHEM 115 and CHEM 116 and CHEM 117 and CHEM 118, and CHEM 233 and CHEM 236, and CHEM 215 or instructor permission. Analytical chemistry as applied in forensic science. Drug analysis, toxicology, arson, paints, polymers, fibers, inks, and gunshot residue.

CHEM 463. Forensic Chemistry Lab. 1 Hr. PR: (CHEM 115 and CHEM 116) or (CHEM 117 and CHEM 118) and CHEM 233 and CHEM 236 required; CHEM 215 or instructor permission: CHEM 460 pre-requisite or co-requisite. Analytical chemistry as applied in forensic science. Drug analysis, toxicology, arson, paints, polymers, fibers, inks, and gunshot residue.

CHEM 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

CHEM 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
CHEM 492 A-Z. Directed Study. I, II. 1-6 Hr. Directed study, reading, and/or research.

CHEM 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

CHEM 496. Senior Thesis. 1-3 Hr. PR: Consent.

CHEM 497. Research. I, II. 1-6 Hr. Independent research projects.

CHEM 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

Chinese (CHIN)

CHIN 101. First Year Chinese 1. 3 Hr. PR: No prior study of the language. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context. (3 hr. lec.)

CHIN 102. First Year Chinese 2. 3 Hr. PR: CHIN 101. Continuation of CHIN 101. Continued development of basic skills in listening, speaking, reading, and writing Chinese. (3 hr. lec.)

CHIN 203. Second Year Chinese 1. 3 Hr. PR: CHIN 102 or equiv. Continuation of CHIN 102. Continued development of basic skills in listening, speaking, reading, and writing Chinese. (3 hr. lec.)

CHIN 204. Second Year Chinese 2. 3 Hr. PR: CHIN 203 or equiv. Continuation of CHIN 203. Continued development of basic skills in listening, speaking, reading, and writing Chinese.

CHIN 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CHIN 301. Third Year Chinese 1. 3 Hr. PR: CHIN 204. Continued development of oral and written communicative skills in Chinese.

CHIN 302. Third Year Chinese 2. 3 Hr. PR: CHIN 301. Continued development of oral and written communicative skills in Chinese.

CHIN 303. Readings in Modern Chinese 1. 3 Hr. PR: CHIN 204. Development of communicative skills, with emphasis on reading Modern Chinese texts.

CHIN 304. Readings in Modern Chinese 2. 3 Hr. PR: CHIN 303. Development of communicative skills, with emphasis on reading modern Chinese texts.


CHIN 465. Chinese Media. 3 Hr. PR: CHIN 302 or CHIN 304. Advanced training in vocabulary, sentence structure, and rhetoric Chinese media.

CHIN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

CHIN 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


CHIN 493A. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CHIN 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

CHIN 495. 1-6 Hr. Independent Study. Faculty supervised study of topics not available through regular course offerings.

CHIN 496. Senior Thesis. 1-3 Hr. PR: Consent.

CHIN 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.
Community Health Promotion (CHPR)

CHPR 170. Health of the Individual. 3 Hr. Examines personal health-related problems in terms of information, services, and actions, as they relate to attainment and maintenance of individual health.

CHPR 172. First Aid and Emergency Care. 2 Hr. Emergency aid for the sick and injured. Emergency services aimed at reducing the potential of permanent disability or threats to life, as well as pain, damage, or suffering of a less serious nature.

CHPR 210. First-Aid Teaching Practicum. 3 Hr. This class prepares students to conduct a first-aid course. Students work with the instructor in all aspects of course management. Students who complete this course are eligible to apply for instructor candidate training with the American Red Cross.

CHPR 250. History and Philosophy of Health Education. 3 Hr. Provides the student with a historical perspective of health education’s development, its present status, and its current philosophical foundations.

CHPR 260. Introduction to Peer Health Education. 3 Hr. Prepares students to become peer health educators through the study of health concerns of students in higher education and examination of effective teaching strategies that result in positive health outcomes.

CHPR 261. Advanced Peer Health Education. 3 Hr. Students apply a variety to teaching strategies based on the peer concept to health concerns of college students and other young adults.

CHPR 265. HIV/STD Prevention: Global Challenge. 3 Hr. Addresses personal, social, legal, medical, and cultural aspects of HIV and sexually transmitted diseases and the health education efforts to stem the pandemic.

CHPR 270. Alcohol/Drug Education for Athletes. 3 Hr. Chemical use and dependency has a significant impact on people in all walks of life. An overview of chemical dependency and current prevention and intervention is presented.

CHPR 271. Health in the Community. 3 Hr. Develops an understanding of the organization, structure, and function of official, voluntary, and professional community health components in terms of their protecting and maintaining the health of the community.

CHPR 275. Substance Abuse: Student Leaders. 3 Hr. Provides individuals, particularly those in organizational leadership roles, with an understanding of substance abuse, leadership roles, and decision-making skills for organizations.

CHPR 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CHPR 301. Elementary School Health Program. 2 Hr. PR: Junior standing. The organization, educational aspects, and personnel relationships involved in elementary school health services, healthful school living, and health education.


CHPR 305. Disease Across the Life Span. 3 Hr. PR: CHPR 170. Students will identify causative factors, treatment, prevention, and educational implications for disease across the life span.

CHPR 320. Drug and Alcohol Abuse Prevention. 3 Hr. Experiences designed to prevent the development of abusive drug-taking relationships by focusing on psychological variables such as self-esteem, coping skills, and development of support networks.

CHPR 331. Accident Prevention and Control Principles. 3 Hr. Basic course which structures principles, concepts, and methodology of the safety movement into introductory experiences dealing with accident prevention and control efforts recommended for various social institutions and agencies.

CHPR 332. Safety Education Principles and Content. 3 Hr. PR: CHPR 331 or consent. Study and analysis of content areas usually recommended for instructional programs within the field of safety, with emphasis on structured learning experiences.

CHPR 333. Foundations of Wellness. 3 Hr. Provide students with physical, mental, emotional, and environmental health concepts and experiences that will expand their knowledge and skills. These relate to the processes and techniques for promoting and maintaining individual and community health changes.

CHPR 365. Men’s Health. 3 Hr. Optimal health is a theme for men across the lifespan. This course will address men’s health specific to race, ethnicity and orientation, to provide skills to be an informed consumer of health information.

CHPR 375. Physical Lifestyle Management. 3 Hr. This course will provide an experience conducive to the understanding, exploration, experience, and development of scientifically sound physical health behaviors within the framework of the Transtheoretical Model of Health Behavior.
CHPR 376. Mental Lifestyle Management. 3 Hr. This course will provide experience conducive to the understanding, exploration, and development of mental, emotional, and spiritual health processes that comprise and support personal holistic health.

CHPR 380. Women and Health. 3 Hr. Examination of theories, myths, and practices surrounding women's physical and mental health from both historical and present-day perspectives. Exploration of specific health issues and controversies and the rise of the women's health movement.

CHPR 400. School Health Teaching Seminar. 2 Hr. PR: CHPR 250 and CHPR 301 and CHPR 302. This course is designed for students who plan to complete their student teaching requirement in health education. Format of the course will include lecture, discussion, and student teaching in a public school.

CHPR 436. Introduction to Worksite Wellness. 3 Hr. An introduction to the field of health promotion in a worksite setting. Persons with interest in exploring the possibility of employment in health promotion in a worksite setting will find this course helpful.

CHPR 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

CHPR 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

CHPR 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Consideration of persistent issues and changing problems in the health promotion field. Emphasis will be placed upon health promotion interests of participating class members.

CHPR 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

CHPR 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

CHPR 496. Senior Thesis. 1-3 Hr. PR: Consent.

CHPR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Computer Information Systems (CIS)

CIS 100. Introduction to Computer Information Systems. 3 Hr. Introductory survey of the needs for and roles of computer information systems in business organizations. Emphasis is hardware functions, systems development, DOS, Windows, and computer operations.

CIS 102. Introduction to Business Application Programming. 3 Hr. A language independent course on computer program design and development using modern methods of analysis, design and development of program logic.

CIS 103. Computer System Development. 3 Hr. PR: CIS 100. A study of established and evolving methodologies for the development of business oriented computer information systems. Students utilize a structures approach to defining, creating and implementing new systems.

CIS 106. PC Hardware Concepts. 3 Hr. This course provides hand-on experience and skill development necessary to install, service, and support microcomputers. This course also covers A+ core competencies.

CIS 107. Operating Systems Concepts. 4 Hr. PR: CIS 100. Introduction to data communication fundamentals including communication media, protocols and network connectivity.

CIS 108. Data Communications. 1 Hr. PR: CIS 100. Introduction to data communication fundamentals including communication media, protocols and network connectivity.


CIS 110. Data Management Concepts. 3 Hr. PR: CIS 100. Provides hands-on introduction to modern database management software. The student designs file structures, performs queries, develops reports and develops database programs using a database language.

CIS 113. Micro Application 1: WORD. 3 Hr. PR: CIS 100. This course provides a survey of computer applications in business with emphasis on word processing.

CIS 114. Micro Application 2: EXCEL. 3 Hr. PR: CIS 100. The student continues the study of microcomputer applications acquiring further skills in the use of spread sheets, such as Excel.

CIS 115. Micro Application 3: POWER POINT. 3 Hr. PR: CIS 114 or consent. A continuation of CIS 114 with a concentration of presentation software such as PowerPoint.
CIS 116. Micro Application 4: ACCESS. 3 Hr. The student continues the study of microcomputer applications acquiring further skills in the use of database software such as Access.

CIS 117 Micro Application 5: OUTLOOK. 3 Hr. PR: CIS 113 and CIS 114 and CIS 116. Provides hands-on experience and skills development necessary to perform basic and advanced functions of Microsoft Outlook and integrate with Microsoft applications.

CIS 118. Web Page Design. 3 Hr. Provides hands-on experience and skills development necessary to perform basic and advanced functions in designing and developing web pages and an introduction to a variety of web software tools.

CIS 119. Web Page Development. 3 Hr. Develops skills necessary to design and create complex web pages.

CIS 220. Micro Application 6. 3 Hr. Provides hands-on experience and skills development necessary to perform project management using software such as MS Project.

CIS 221. MS Network Administration 1. 3 Hr. Provides skills necessary to install, configure, customize, network, integrate, and troubleshoot Windows Workstation Operation System.

CIS 222. MS Network Administration 2. 3 Hr. PR: CIS 221. Provides skills necessary to perform day-to-day administration of Windows Server Operating System.

CIS 223. MS Network Administration 3. 3 Hr. PR: CIS 222. Provides skills necessary to install, configure, customize, network, integrate, and troubleshoot Windows Server Operating System.

CIS 224. MS Network Administration 4. 3 Hr. PR: CIS 223. Provides skills necessary to install, configure, customize, network, integrate, and troubleshoot Windows Server Directory Services.

CIS 225. Internet Essentials 1. 3 Hr. PR: CIS 106 and CIS 109. Provides skills necessary to install, configure, customize, network, and integrate Internet technologies. Covers competencies contained in the Inet + certification.

CIS 226. Image Management. 3 Hr. Provides skills necessary to manipulate raster and vector images using image management software such as Photoshop and Illustrator.

CIS 227. Supporting Internet Explorer. 3 Hr. Provides skills necessary to plan, implement, and support Microsoft Internet Explorer using the administration kit on Windows Server Operating Systems.

CIS 228. E-Commerce. 3 Hr. PR: CIS 118. Provides an understanding of the fundamentals of e-commerce. This includes designing and developing e-commerce applications.

CIS 229. Digital Video Essentials. 3 Hr. Provides skills necessary to design, capture, edit, and author DVDs and digital video movies using digital video editing software such as Adobe Premier.

CIS 230. Programming Language 1: "C". 3 Hr. PR: CIS 100 and CS 110 and CS 111. An introduction to programming using "C" language syntax, functions, arrays, pointers, structures and files. Numerous exercises involving the use of "C" will be assigned.

CIS 232. Visual Basic Programming 1. 3 Hr. Develop intermediate-level skills to design, develop, write, and debug programs using Visual Basic.

CIS 233. Visual Basic Programming 2. 3 Hr. Develop advanced-level skills to design, develop, write, and debug programs using Visual Basic.


CIS 240. System Development Project. 3 Hr. PR: CIS 100 and CIS 103. An independent study requiring the student to complete all phases of a computer oriented project from system design to implementation on a computer.

CIS 241. Networking Fundamentals. 4 Hr. Topics include OSI model, network topologies, IP addressing, networking components, and basic network designs. (Lab fee required.) (Course is part of Cisco Academy.)

CIS 242. Routing Theory and Router Technologies. 4 Hr. Topics include beginning router configurations, routing and routing protocols, and LAN switching. Lab fee required. (Course is part of Cisco Academy.)

CIS 243. Advanced Routing and Switching. 4 Hr. Topics include advanced router configuration, LAN switching, network management, and advanced network design. Lab fee required. (Course is part of Cisco Academy.)

CIS 244. Project Based Learning. 4 Hr. Advanced network design projects and advanced network management projects. (Lab fee required.) (Course is part of Cisco Academy.)

CIS 250. Directed Computer Experience 1. 3 Hr. PR: CIS 100 and CIS 103. Students are placed into practical working situations where they are involved in problem resolution, programming, system design or other areas as deemed appropriate.
CIS 251. Directed Computer Experience 2. 2 Hr. PR: CIS 250. A continuation of CIS 250 with emphasis on the independent solution of problems by the student.

CIS 255. Computer Graphic Production. 3 Hr. A course on the mechanics of the CorelDRAW program and its application in desktop publishing.

CIS 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Criminal Justice (CJ)

CJ 101. Introduction to Criminal Justice. 3 Hr. This course introduces the student to the three principal components of the criminal justice system: law enforcement, judiciary, and corrections. It will examine the history, structure, functions, and issues of each component, and introduce the student to the measurement of crime, criminological theories criminal law, justice perspectives, and the juvenile justice system.

CJ 111. Police Operations. 3 Hr. The student will be introduced to the day-to-day duties of a police officer. Emphasis will be placed on community and human relations, patrol and traffic functions, order maintenance, report writing, investigations, communications, interviewing, search, and seizure, and arrest. Police stress and survival skills will also be discussed.

CJ 201. Traffic Law Enforcement. 3 Hr. PR: CJ 101. The role of the police officer in traffic control and enforcement is examined in detail. Among the topics studied will be West Virginia traffic law, accident investigation and reconstruction, traffic education, and the interrelations of local, state, and federal agencies responsible for traffic functions.

CJ 202. Principles of Criminal Law. 3 Hr. Structure, definitions, and interpretations of criminal statutes of particular interest. The scope, purpose, and definition of the criminal law in general, including the study of crimes against the person, property, and other offenses.

CJ 203. West Virginia Criminal Procedure. 3 Hr. This course introduces the student to state rules and laws of procedure that are used to prosecute criminal defendants. Topics include rules and laws for prosecution in municipal, magistrate, and circuit courts.

CJ 204. Police Defense Tactics. 3 Hr. The student will be exposed to the methods of physical protection, including the techniques of baton use, disarmament, and defense techniques.

CJ 206. Introduction to Corrections. 3 Hr. A survey of the current correctional process in America which includes the origin and legal procedures of the present system and the effects of the system on the individuals as well as on our society. Special emphasis is given to current theories of rehabilitation in the institution and in probation and parole. Emphasis is also given to the administration of the adult and juvenile institutions and the alternatives and future of the present system.

CJ 209. Firearms. 3 Hr. PR: CJ 101. This course addresses safety precautions, legal provisions, moral aspects, principles of decision shooting, and restrictions in the use of firearms. Nomenclature and the firing process of the sidearm and shotgun will be demonstrated.

CJ 210. Advanced Firearms. 3 Hr. PR: CJ 209. A transitional training from revolver to semi-automatic handgun, advanced tactical shotgun and law enforcement rifle, including low-light level training. Course addresses safety precautions, legal provisions, moral aspects, principles of decision shooting, and restrictions in the use of firearms. Nomenclature and the firing processes will be demonstrated.

CJ 212. Abnormal Behavior and Crisis Intervention. 3 Hr. PR: CJ 101. A study of the recognition and handling of abnormal persons with emphasis on those mental conditions most encountered by the criminal justice practitioner. Methods of crisis intervention, basic conflict management, and referral and diversion will also be discussed.

CJ 215. Criminal Justice System. 3 Hr. PR: CJ 101. Introduces students to the agencies that form state criminal justice systems. Topics include law enforcement agencies, criminal courts, municipal courts, juvenile justice institutions, and corrections facilities.

CJ 220. Juvenile Justice Process. 3 Hr. PR: CJ 101. Definitions of delinquent behavior; contributing social problems; adolescence as a subculture; the adjudication process for juveniles—philosophy and practice; treatment procedures.

CJ 225. Criminal Procedure and Constitutional Law. 3 Hr. PR: CJ 101. Constitutional and procedural issues relating to search and seizure, arrest, confinement; the admissibility and exclusion of evidence; types and degrees of evidence; discussion of court decisions interpreting the guarantees found in the Bill of Rights.

CJ 236. Criminal Investigation. 3 Hr. PR: CJ 101. This course will survey the fundamental techniques of criminal investigation. Students will be exposed to the history of criminal investigation and criminalistics, interviewing and interrogation, physical evidence, crime scene procedures, crime analysis, investigation techniques, report writing and case preparation, and courtroom testimony.

CJ 240. Adjudication Process. 3 Hr. PR: CJ 101. Role and structure of prosecution, public defense, and the courts; basic elements of the substantive criminal law; procedural law and its relation to constitutional guarantees.

CJ 255. Analysis of Correctional Operations. 3 Hr. PR: CJ 206. Problems of management of the correctional process; programming, security, information systems, reports, case management, evaluation process; custody and discipline as they relate to rehabilitative efforts; community adjustment facilities; problems of probation and parole.

CJ 295. Field Practicum. 3 Hr. PR: Sophomore status and a 2.0 GPA or higher. A supervised professional study conducted in a criminal justice field.

CJ 301. White Collar and Economic Crime. 3 Hr. Overview of white collar and economic crime in America including an examination of the extent of economic crime, law enforcement effectiveness, theories of causation, and methods of prevention. Also discussing the effect of the Internet on white collar and economic crime.

CJ 302. Terrorism. 3 Hr. An examination of terrorism both domestic and foreign including its causes and trends. Also examining selected current cases, explanatory theories, methods of prevention or containment, and the effectiveness of law enforcement efforts.

CJ 315. Criminal Evidence. 3 Hr. PR: CJ 225 or consent. Study of the rules of evidence and admissibility. Students will develop the ability to apply those rules in the collection and presentation of evidence in a court of law. Forensic requirements, statutory law, and other related issues will be emphasized.

CJ 316. Community Based Corrections. 3 Hr. Study of probation, parole, diversion programs, and intermediate sanctions including house arrest, community service, restitution, halfway houses, and temporary release. Some focus placed on special-needs offenders.

CJ 325. The Role of Women in Criminal Justice. 3 Hr. Examination of how the roles of women in criminal justice have changed over time. Focus will be placed on women as practitioners, victims, and offenders.

CJ 410. Research Methods in Criminal Justice. 3 Hr. A general introduction to the process of research emphasizing research design, techniques of data collection including electronic methods, analysis and interpretation of research results as applied to the study of criminal justice

CJ 415. Forensic Techniques. 3 Hr. This class will explore the scientific disciplines utilized to detect trace evidence at a crime scene. Explain (and demonstrate) the methods used for collection of various types of evidence. The student will learn the importance of the "chain of custody" from crime scene to the court room.

CJ 455. Ethics/Criminal Justice System. 3 Hr. PR: CJ 101 and CJ 410 or consent. Focus on the ethical issues faced by individuals as citizens and criminal justice professionals. The course will assist students in clarifying their values and in establishing a framework for ethical decision making. Students will examine ethical issues, which relate to a wide variety of concerns, and a variety of professional ethical codes.

CJ 461. Current Issues/Criminal Justice. 3 Hr. PR: CJ 101 and CJ 410 or consent. Focus on the current issues facing criminal justice including those related to prevention of crime, law enforcement, corrections, institutional reform, and public opinion. Examination of recent research, emerging trends and policy.

CJ 485. Senior Seminar-Capstone. 3 Hr. PR: Senior standing and criminal justice major. A senior capstone course. Course allows student to consider the integration of theoretical and methodological issues. Focus will also be given career or graduate placement.

Classics (CLAS)
CLAS 101. Elementary Latin 1. 3 Hr.
CLAS 203. Intermediate Latin. 3 Hr. PR: CLAS 102. or two years of high school Latin.
CLAS 204. Intermediate Latin 2. 3 Hr. PR: CLAS 203. or two years of high school latin.
CLAS 231. Greek and Roman Civilization and Culture. 3 Hr.
CLAS 232. Greek and Roman Myths. 3 Hr.
CLAS 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
CLAS 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.
CLAS 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

CLAS 492. Directed Study. 1-6 Hr. Directed study, reading and/or research.

CLAS 493. Special Topics. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

CLAS 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

CLAS 496. Senior Thesis. 1-3 Hr. PR: Consent.

CLAS 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Communication Studies (COMM)

COMM 100. Principles of Human Communication. I, II. 1 Hr. Introduction to the human communication process with emphasis on the principles, variables, and social contexts of communication.

COMM 102. Human Communication in the Interpersonal Context. I, II. 2 Hr. Introduction to interpersonal communication with emphasis upon application of one-to-one communication in a variety of social contexts.

COMM 103. Presentational Speaking. I, II. 1-3 Hr. A laboratory designed to reinforce behavioral speaking skills based on the theory taught in COMM 104.

COMM 104. Human Communication in the Public Communication Context. I, II. 2 Hr. Introduction to principles of communication in the one-to-many context.

COMM 105. Introduction to the Mass Media. I, II. 3 Hr. Critical examination of mass media with special emphasis on ways in which social, economic, and psychological factors influence the structure, functions, and effects of the media.

COMM 112. Small Group Communication. 3 Hr. Introduction to small-group communication with emphasis on developing understanding of the small group communication process and learning how to communicate effectively when working in a small group.

COMM 122. Human Communication in Contemporary Society. 3 Hr. I, II, S. This course addresses various social issues faced by young adults in our society and how communication is often part of the problem and how it can be used to solve these problems.

COMM 200. Communication Theory and Research 1. I, II. 3 Hr. PR: Pre-communication studies major. Methods of understanding human communication behavior; issues relating to epistemology and ontology in communication studies; and reviews/critiques of the major approaches and theories of human communication.

COMM 201. Communication Theory and Research 2. I, II. 3 Hr. PR: Pre-Communication Studies majors and a 'C' or better in COMM 200. Emphasis on social science research; the language research, types of research, sampling, design, measurement, observation, and ethics from a communication perspective.

COMM 202. Interpersonal Communication. I, II. 3 Hr. PR: COMM 102. Survey of theoretical and research literature in interpersonal communication. Emphasis on interaction, interpersonal understanding, personal relationships, and self understanding as outcomes in interpersonal communication.

COMM 212. Gender and Communication. 3 Hr. PR: COMM 102 or consent. The similarities and differences of communication variables for males and females. Theoretical implications in the study of the gender variable with practical applications in different contexts.

COMM 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

COMM 303. Business and Professional Communication. 3 Hr. PR: COMM 306. Application of the theories of effective communication in organizations. Simulated projects and oral presentations will be used to refine communication skills necessary for entry-level positions within business and industry.

COMM 304. Human Communication and Rational Decisions. 3 Hr. Argumentation, small group, and persuasion, to the process and outcome of rational decision making in communication. Some emphasis on critical-rational response to manipulative communication.

COMM 305. Appreciation of the Motion Picture. 3 Hr. Evaluation of motion picture and television film as forms of mediated communication and as art forms involving communication and aesthetic principles. Emphasis on the feature-length theatrical fiction film.
COMM 306. Human Communication in Organizations and Institutions. 3 Hr. Communication processes and problems in business and nonbusiness organizations and institutions with attention to practical application. This course is not open to freshmen.

COMM 307. Life-Span Communication. 3 Hr. Development of communication from birth through adulthood to later years; study of media, interpersonal relationships, and competence in communication. This course is not open to freshmen.

COMM 308. Nonverbal Communication. I, II. 3 Hr. An examination of the effects of human nonverbal behavior on human communication. Emphasis on specific nonverbal behaviors including touch, time, environmental contexts, physical appearance cues, and social communication cues. This course is not open to freshmen.

COMM 309. Health Communication. 3 Hr. This course examines the vital role that communication plays in the American health care system and introduces concepts and approaches needed to effectively and ethically communicate about health in a pluralistic and multicultural society. This course is not open to freshmen.

COMM 314. Nonviolence in Communication Behavior. 3 Hr. Nonviolent resistance as communication behavior. Emphasis on major proponents of and upon learning ways to apply nonviolence in communication behavior.

COMM 315. American Diversity in Film. 3 Hr. This course explores films that show the diversity of individuals who live in the United States of America. Films will show characters of different ages, ethnicity, gender, sexual orientation, race, religion, region, and social class.

COMM 316. Intercultural Communication. 3 Hr. PR: COMM 100 and 102, or COMM 104. Examines similarities and differences between cultures with regard to norms, values, and practices in verbal and nonverbal communication. Emphasis on communication in Latin America, Asian, African, and Middle Eastern cultures. This course is not open to freshmen.

COMM 317. Communication and Aging. 3 Hr. Examining the influence of aging on communication, concentrating on persons over age 55. Social, psychological, biological, and sensory communication adjustments. Multidisciplinary approach to aging theories.

COMM 400. Principles of Communication Education. 3 Hr. Literature, principles, and current practices of communication education in public schools with directed application. Intended for teachers in communication and language arts.

COMM 401. Communication Research Methods. I. 3 Hr. PR: Communication studies major or consent and COMM 201. Research methods in human communication and related professional areas with emphasis on understanding and evaluating research procedures. Special focus on practical application.

COMM 403. Capstone Seminar. 3 Hr. PR: Senior status and completion of 24 hours of Communication studies coursework or consent. Part one in a two-part sequence aimed at the appraisal and synthesis of communication knowledge and skills. It also prepares students to complete an in-depth applied project related to communication studies.

COMM 404. Persuasion. I, II. 3 Hr. Theory and research in persuasion, emphasizing a critical understanding and working knowledge of the effects of social communication on attitudes, beliefs, and behavior. This course is not open to freshmen.

COMM 405. Effects of Mediated Communication. 3 Hr. PR: COMM 105. Messages and characteristics of mass media with emphasis on effects of mass communication on society. This course is not open to freshmen.

COMM 406. Advanced Organizational Communication. 3 Hr. PR: COMM 306. Communication in superior/subordinate and peer relationships; emphasis on application of communication theory to complex organizations and organizational contexts. This course is not open to freshmen.

COMM 408. Advanced Study in Nonverbal Communication. 3 Hr. PR: COMM 308. Functions of nonverbal communication including status, power, immediacy, relationship development, regulation, turn-taking, leakage and deception, person perception, and emotional expressions.

COMM 409. Advanced Health Communication. 3 Hr. PR: COMM 309. Advanced study of research and practice of health communication. Students use theory to create and deliver communication campaigns addressing health issues, policy or practices, using mediated, community, group, or one-to-one interaction.

COMM 410. Family Communication. 3 Hr. This course explores the components and dynamics of human communication within the family unit. The student will examine research, various communication models, principles and theory that are relevant to family communication.

COMM 425. Computer Mediated Communications. 3 Hr. Explores the relationships between CMC and various aspects of human activity. Investigates established and emerging CMC-based social, cultural, organizational, and instructional activities.
COMM 490. Teaching Practicum. I, II. 1-3 Hr. Teaching practice as a tutor or assistant.

COMM 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 Hr.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

COMM 492 A-Z. Directed Study. 1-3 Hr. Directed study, reading, and/or research.

COMM 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

COMM 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

COMM 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

COMM 496. Senior Thesis. 1-3 Hr. PR: Consent.

COMM 498 A-Z. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Counseling (COUN)
COUN 230. Life Choices. 3 Hr. Students will examine lifestyle choices typically dictated by unconscious customs rather than research. Covers areas of attitude, relationships, physical lifestyle, health and spirituality. The class consists of lectures and required student participation.

COUN 303. Introduction to Helping Professions. I, II, S. 3 Hr. To assist in evaluating students potential for a career in the helping professions. Exposure is provided to client populations served by helping professionals, along with a selection of intervention strategies used in those professions.

COUN 416. Behavior Problems and the School. II. 3 Hr. A course primarily oriented toward assisting educators to utilize current psychological principles related to classroom discipline, as well as academic and social adjustment.

COUN 483 A-Z. Workshop in Counseling and Guidance. I, II, S. 1-12 Hr. PR: Consent. To take care of credits for special workshops and short intensive limit courses on methods, supervision, and other special topics.

COUN 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

Computer Engineering (CPE)
CPE 271. Introduction to Digital Logic Design. 3 Hr. PR: MATH 156 or Consent. An introduction to the design of digital networks and computers. Topics include number systems, coding, Boolean and switching algebra, logic design, minimization of logic, sequential networks, and design on digital subsystems. (3 hr. lec.)

CPE 272. Digital Logic Laboratory. 1 Hr. Coreq: CPE 271. Experiments with digital electronic circuits including number systems, design and application of modern digital circuitry for both combinational and sequential logic circuits. (3 hr. lab.)

CPE 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CPE 310. Microprocessor Systems. 3 Hr. PR: CPE 271 and PHYS 112. Theory and design of microprocessors: organization and architecture of modern processors; integration of microprocessors with RAM, ROM, and I/O devices; machine language, assembly language and software development. (3 hr. lec.)

CPE 311. Microprocessor Laboratory. 1 Hr. Coreq: CPE 310. Machine language, assembly language and hardware and software interfacing. (This includes editing, linking, and debugging.) Memory, I/O and basic techniques of microprocessor interfacing. (3 hr. lab.)

CPE 312. Microcomputer Structures and Interfacing. 3 Hr. PR: CPE 310 and CPE 311 and EE 251 and EE 252. Coreq: CPE 313 and CS 350. Design of computer systems with emphasis on interface hardware including communications, high power interface devices, line driver/receiver circuits, A/D and D/A devices, and utilization of software techniques for programmed, interrupt, and direct memory access. (3 hr. lec.)

CPE 313. Microcomputer Structures and Interfacing Laboratory. 1 Hr. PR: CPE 310 and CPE 311. COREQ;CPE 312. A microprocessor based single-board computer is designed and built. A semester project is required using standard I/O techniques. (3 hr. lab.)

CPE 435. Computer Incident Response. 3 Hr. PR: CPE 310 and CPE 311 and CS 350 or consent. Introduction to computer incident response, forensics, and computer security. Legal basis, proper procedures, and multiple operating systems application.
CPE 442. Introduction to Digital Computer Architecture. 3 Hr. PR: MATH 375 and CPE 310 and CPE 311. Control, data, and demand driven computer architecture; parallel processing, pipelining, and vector processing; structures and algorithms for array processors, systolic architectures, design of architectures. (3 hr. lec.)

CPE 450. Introduction to Microelectronics Circuits. 3 Hr. PR: EE 251. (VLSI-Very Large Scale Integrated) circuit design, including layout, simulation and performance optimization of basic digital logic functions and combinations of such basic functions into more complex digital system functions. CAD tools are used for projects. (3 hr. lec.)


CPE 470. Digital Systems Design. 3 Hr. PR: CPE 271. Hierarchical design methods, from the machine architecture, through data flow concepts and control flow concepts, to implementation. Topics include: design methodology, design techniques, machine organization, control unit implementation and interface design. (3 hr. lec.)

CPE 471. Switching and Automata Theory. 3 Hr. PR: CPE 271 and CPE 310 and MATH 375. Reliable design and fault diagnosis; synchronous and asynchronous sequential machines; finite state machines with automata theory. (3 hr. lec)

CPE 480. Senior Design Seminar. 2 Hr. PR: ENGL 102 and consent. Penultimate semester. Group senior design projects with individual design assignments appropriate to student’s discipline. Complete system-level designs of the subsequent semester’s project presented in written proposals and oral presentations. (Equivalent to BIOM 480, CS 480, and EE 480.) (2 hr. lec., 1 hr. conf.)

CPE 481. Senior Design Project. 3 Hr. PR: CPE 480; continuation of CPE 480. Detailed design and implementation of the system including choice of components, algorithm development, interfacing, troubleshooting, working in groups, and project management. Also covers professional topics, including ethics, liability, safety, socio-legal issues, risks and employment agreements. (1 hr. lec., 1 hr. conf., 2 hr. lab.)

CPE 484. Real-Time Systems Development. 3 Hr. PR: CS 350 or working knowledge of C programming language and UNIX. Characteristics of real-time systems, system and software development standards, structured and object oriented development methods for real-time systems, using a computer-aided software engineering (CASE) tool in the development of a large engineering project. Emphasis is on real-time systems requirements analysis and design. This is a project-based course. (3 hr. lec.)

CPE 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

CPE 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


CPE 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

CPE 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

CPE 496. Senior Thesis. 1-3 Hr. PR: Consent.

CPE 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Computer Science (CS)

CS 101. Intro to Computer Applications. 4 Hr. Introduction to spreadsheets and databases for problem-solving in disciplines such as math, science, engineering, business, social sciences, behavioral sciences, and environment: using computer applications to create technical reports and presentations.

CS 110. Introduction to Computer Science. 4 Hr. PR: (MATH 126 and MATH 128) or MATH 129 or score of 600 MSAT or 26 Math ACT Programming and design; simple data types, variables, and expressions; program modularization through procedures, functions, and classes; repetition, selection through control structures; structured data types including arrays and records; applications. (3 hr. lec., 1 hr. lab.)

CS 111. Introduction to Data Structures. 4 Hr. PR: CS 110. Software development with abstract data types; elementary data structures including lists, stacks, queues and binary trees. Object-oriented design and development, dynamic allocation, recursion, design methodology. (3 hr. lec., 2 hr. lab)
CS 210. File and Data Structures. 4 Hr. PR: CS 111. Complex internal data structures including hashing, record collision and overflow techniques. Extension of internal data structures to external storage; indexed structures, external sorting and merging, direct access methods.

CS 220. Discrete Mathematics. 3 Hr. PR: CS 110 and MATH 155. Mathematical concepts used in computer science such as sets, relations, functions, counting principles, graphs, trees, and automata; introduction to basic graph algorithms and applications. (3 hr. lec.)

CS 221. Analysis of Algorithms. 3 Hr. PR: CS 111 and CS 220 and MATH 156. Introduction to algorithm design and analysis. Growth rate of functions and asymptotic notation. Divide-and-conquer algorithms and recurrences; searching and sorting; graph algorithms including graph searching, minimum spanning trees, and shortest paths.

CS 230. Intro to Software Engineering. 4 Hr. PR: CS 111. Techniques and methodologies of software engineering; specification, modeling, requirement analysis and definition, design, quality assurance, testing, reuse, development tools and environments.

CS 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CS 310. Principles of Programming Languages. 3 Hr. PR: CS 111. Theoretical and practical aspects of languages including internal representations, run-time environments, run-time storage management; historical, current, special-purpose and experimental languages; finite-state automata, regular expressions and context-free grammars, language translation, semantics and paradigms. (3 hr. lec.)


CS 350. Computer System Concepts. 3 Hr. PR: CS 111 and CPE 271. System software organization; operating system concepts including processes, threads, memory management, and the user interface; elementary network concepts.

CS 410. Compiler Construction. 3 Hr. PR: CS 310 or consent for non-majors. Theory and practice of the construction of programming language translators; scanning and parsing techniques, semantic processing, runtime storage organization, and code generation; design and implementation of interpreter or compiler by students. (3 hr. lec.)

CS 420. Design of Algorithms. 3 Hr. PR: CS 221 and completed Pre-CS or consent for non-majors. Algorithm design paradigms: divide-and-conquer, dynamic programming, greedy. Advanced data structures: balanced search trees, mergeable heaps, union-find. Introduction to computational complexity. Selected topics such as backtracking, branch-and-bound, amortized analysis, approximation algorithms.

CS 422. Automata Theory. 3 Hr. PR: CS 220 or consent for non-majors. Introduction of formal languages, grammars, and automata; regular expressions and finite automata, context-free and context-sensitive languages; push down and linear-bounded automata; Turing machines and recursively enumerable languages.

CS 426. Discrete Mathematics 2. 3 Hr. PR: CS 221 or consent for non-majors. Applications of discrete mathematics to computer science. Selected topics from algorithmic graph theory, combinatorics, and order theory.

CS 430. Advanced Software Engineering. 3 Hr. PR: CS 230 or consent for non-majors. Engineering process, project economics, project organizational and management issues, configuration management. (3 hr. lec.)

CS 440. Database Design and Theory. 3 Hr. PR: CS 230 or consent for non-majors. Database terminology, SQL, stored procedures, the relational and object-relational data model, triggers, and entity-relationship model.

CS 450. Operating Systems Structures. 3 Hr. PR: CS 250 or CS 350. Support of computer components; device management and interrupts, process scheduling, file management, complete OS structure, OS development and debugging, configuration management, and performance testing. (3 hr. lec.)

CS 451. Advanced Operating Systems. 3 Hr. PR: CS 450 or consent for non-majors. Operating system topics not covered in CS 350 or CS 450; reliability and security, system management, and virtual machine structures; introduction to distributed and realtime systems; emphasis on design issues faced by actual systems. (3 hr. lec.)

CS 453. Data and Computer Communications. 3 Hr. PR: CS 350 or consent for non-majors. An in-depth study of the Internet, networking fundamentals, protocols, algorithms, and principles of distributed computing, introduction to network security and management.

CS 455. Computer Architecture. 3 Hr. PR: CS 350 or consent for non-majors. Computer architecture; emphasis on implications for software design; evolution of computers; elementary digital logic; CPU structures; memory and I/O structures; pipelining and memory management; introduction to parallel and high-level architectures. (3 hr. lec.)

CS 465. Introduction to Computer Security. 3 Hr. PR: CS 111 and (CS 350 or consent) an overview of threats to computer security; technologies for security assurance and approaches to security solutions. Security vulnerabilities; encryption; access control; trusted systems; security administration.
CS 470. Introduction to Computer Graphics. 3 Hr. PR: CS 210 or consent for non-majors. Overview of 3D graphics hardware and gaming consoles; focus on developing 3D graphics software; fundamental algorithms for realtime 3D graphics with focus on game engine component development; introduction to three-dimensional game engine development.

CS 472. Artificial Intelligence. 3 Hr. PR: CS 230 or consent for non-majors. Survey of AI techniques, heuristic search, game playing, knowledge representation schemes: logic, semantic net, frames, rule-based; natural language processing, advanced AI techniques/systems: planning, blackboard architecture, neural net model; AI implementation. (3 hr. lec.)

CS 473. Data Mining. 3 Hr. PR: CS 230 and CS 350. We present the theory practice of industrial data mining. Combining pragmatics with theory, students will learn to select appropriate data mining methods for industrial applications.

CS 480. Senior Design. 2 Hr. PR: ENGL 102 and consent. Penultimate semester. Group senior design projects with individual design assignments appropriate to student's discipline. Complete system-level designs of the subsequent semester's project presented in written proposals and oral presentations. (Equivalent to BIOM 480, CPE 480, and EE 480) (2 hr. lec., 1 hr. conf.)

CS 481. Senior Project. 3 Hr. PR: CS 480: Continuation of CS 480. Detailed design and implementation of the system including choice of components, algorithm development, interfacing, troubleshooting, working in groups, and project management. Also covers professional topics, including ethics, liability, safety, socio-legal issues, risks and employment agreements. (1 hr. lec., 1 hr. conf., 2 hr. lab.)

CS 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

CS 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

CS 492 A-Z. Directed Study. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

CS 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

CS 494 A-Z. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

CS 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

CS 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

Dance (DANC)

DANC 101. Introduction to Dance. I, II. 3 Hr. Introductory course designed to develop an aesthetic appreciation and understanding of dance as a fine art and its impact on society.

DANC 102. Introduction to Dance Techniques. I, II. 2 Hr. Fundamental principles of dance with emphasis on the development of stationary and motor forms of techniques to develop body awareness, coordination, endurance, and flexibility with elements of creativity.

DANC 120. Advanced Modern Dance. I, II. 1 Hr. PR: DANC 102 or consent.

DANC 121. Intermediate Modern Technique. 2 Hr. PR: Consent. Intensive concentration of technique form, interpretation, and artistic sensitivity of performance. Barre and center practice developing in difficulty as to length and complexity will enhance the level of execution.

DANC 130. Intermediate Jazz Dance. I, II. 1 Hr. Development of jazz technique and appreciation of jazz as an American art form.

DANC 131. Elementary Jazz. 2 Hr. Basic jazz dance fundamentals and techniques; development of coordination, strength, and flexibility through the execution of the elementary jazz warm-ups, movement progressions, and combinations.

DANC 132. Intermediate Jazz. 2 Hr. PR: Consent. Continuation of jazz dance techniques and concepts with an emphasis on jazz isolations, polyrhythms, and syncopated movement sequences; continued practice in the development of the body as an instrument of expression.

DANC 140. Ballet. I, II. 1 Hr. Ballet vocabulary with emphasis on barre work and adagio and allegro technique.

DANC 141. Introduction to Ballet. 2 Hr. Simple ballet techniques, positions, basic barre work, and motor combinations will be developed.

DANC 150. Folk Dance. I, II. 1 Hr.

DANC 151. Tap Dance 1. I, II, S. 1 Hr. Introduction to tap dance technique, including study of basic tap vocabulary, fundamental rhythms, locomotor movements and tap styles.

DANC 152. Tap Dance 2. I, II, S. 1 Hr. PR: DANC 151. Expansion and development of the basic tap technique and vocabulary introduced in DANC 151. Introduction to Irish riffs, pull-backs, waltz, tap, basic traveling steps, and standard audition material.

DANC 153. Ballroom Dance. I, II. 1 Hr. Introduction to popular ballroom dancing. Styles will range from fox trot, waltz, and swing to basic Latin dances.


DANC 160. Introduction to Choreography. 2 Hr. In-depth study of movement phrases in the elements of space, time, and force. Emphasis on technique in stationary and motor forms, combinations, and progressions.

DANC 161. Technique and Composition 2. I, II. 2 Hr. PR: DANC 160. A continuation of in-depth study of movement phrases in the elements of space, time, and force. Primary focus on combinations and progression in choreographic studies.

DANC 162. Choreography 1. I, II. 2 Hr. PR: DANC 102. Creative projects dealing with the basic elements of dance composition through the development of improvisational and compositional skills which will contribute to the invention and development of movement materials.

DANC 170. Rhythm in Dance. I. 3 Hr. PR: DANC 262 and (DANC 241 or DANC 121.) An exploration of dance technique in its relation to musical compositions and principles of choreography; developing an aesthetic and critical awareness of these principles as they are displayed in dance works.

DANC 221. Advanced Modern Technique. II. 2 Hr. PR: DANC 102, 160 or 121. Advanced tutorial techniques relating advanced theories and individual study in the design of technique, style, and compositional form.

DANC 231. Advanced Jazz. II. 2 Hr. PR: DANC 132. In-depth exploration of both traditional and contemporary jazz techniques and styles; continues progression towards a more advanced level of technical skill as developed and utilized through this specific dance technique.

DANC 241. Advanced Ballet. I, II. 2 Hr. PR: DANC 142. Advanced technique of classical theatrical dancing. An in-depth continuation of adage, allegro, and pointe work. Combinations and choreographic studies will be a focus of training. (Repeatable for max. 6 hr. credit.) Fundamentals will also be developed.

DANC 250. Theatre Dance 1. I. 2 Hr. PR: DANC 142. Develops a basic knowledge of choreographed movement in the musical theatre dance idioms. Includes a study of musical dance forms for the actor, and Broadway dance vocabulary and styles. (Also listed as THET 350.)

DANC 251. Theatre Dance 2. II. 2 Hr. PR: DANC 250 or THET 350. Comprehensive study of representative musical theatre dance styles, relative to period (1900 to present) and ethnic derivation. Includes study of isolationary movement and principles of classical dance applicable to the Broadway idiom. (Also listed as THET 351.)

DANC 262. Choreography 2. I, II. 2 Hr. PR: DANC 162. An in-depth concentration and continuation of DANC 162. Solo, duo, and group ensembles will enhance analysis and critical appraisal. Production of student works will be included.


DANC 271. History and Philosophy of Dance. II. 3 Hr. Cultural survey of dance as an expression of the society it represents; philosophy of dance; relation of dance to other art forms; dance as an educational experience.

DANC 272. World Dance. II. 3 Hr. Introduction to world cultures through the media of dance lecture and movement. Study of global religious, social, educational, and courtship rituals as related to dance.


DANC 361. Choreography 1. I, II. 2 Hr. PR: DANC 102. Creative projects dealing with the basic elements of dance composition through the development of improvisational and compositional skills which will contribute to the invention and development of movement materials.
DANC 362. Advanced Choreography. 3 Hr. PR: DANC 160. Provides opportunity for creative explorations and analysis of principles of dance composition through improvisations and problem solving. Informal presentations of student works will be included.

DANC 371. History and Philosophy of Dance. II, S. 3 Hr. A study of dance history/philosophy and prominent personalities in the world of dance through their legacy of techniques, choreographies, and performances.

DANC 493 A-Z. Special Topics. I, II. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

DANC 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

DANC 496. Senior Thesis. 3 Hr.

DANC 498. Honors. 3 Hr.

Disability Studies (DISB)

DISB 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

DISB 380. Disability and the Family. 3 Hr. This course is designed to familiarize the students with developmental disabilities and their impact on families. Interdisciplinary family-centered care is emphasized, along with how to access resources to meet the needs of children and families.

DISB 381. Lifespan Disability Policy. 3 Hr. Overview of health, education, financial and related policies impacting individuals with disabilities across the lifespan and at the federal, state, and local levels.

DISB 385. Disability and Society. 3 Hr. This course provides a global, interdisciplinary overview of issues and policies that are the concern of individuals with disabilities (e.g., public policy, health-related issues, employment, and social benefits).

DISB 486. Capstone Portfolio: Disability. 1 Hr. This undergraduate capstone for the interdisciplinary certificate program in disability studies culminates with a written essay, a presentation, and a portfolio. (Grading will be pass/fail.)

Design Studies (DSGN)

DSGN 315. Survey of Non-Western Design. 3 Hr. This course examines design from beyond the tradition of Western civilization. Students will study interior design, architecture, and art as shaped by religious beliefs, political systems, and geographical context.

DSGN 491. Prof Field Experience Capstone. 1-18 Hr. PR: Consent. (May be repeated up to a max of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

DSGN 494. Seminar: Capstone. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

Design and Merchandising (DSM)

DSM 101. Introduction Design and Merchandising. 2 Hr. Provides an introduction to the educational culture in the Division of Design and Merchandising.

DSM 199. Orientation to Family and Consumer Sciences. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

DSM 261. Family Economics. 3 Hr.

DSM 265. Family Resource Management. 3 Hr. Develops an understanding of the systems approach to individual and family resource management with a focus on key concepts, processes, and contributing factors. Time management and money management are dealt with in depth.

DSM 267. Household Equipment. 3 Hr. A consumer approach to evaluating portable and major household equipment with a focus on concern for energy efficiency, safety, task performance, ecological impact, and use and care.

DSM 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

DSM 361. Consumer Economics. 3 Hr. Develops an understanding of the consumer's role in our economy by examining the nature and function of the marketplace; the existence and impact of governmental consumer regulations and laws and; consumer interests, buying behaviors, rights, responsibilities, and remedies.
DSM 381. Issues in Consumer Sciences. 3 Hr. PR: Senior standing or consent. Examines the process of socialization for the professional role within the context of social change and current trends affecting families in the U.S. and overseas.

DSM 460. Communications of Consumer Information. 3 Hr. Provides opportunities to use a variety of communication techniques in professional settings to meet the informational needs of consumers.

DSM 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

DSM 491 A-Z. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

DSM 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

DSM 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

DSM 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

DSM 496. Senior Thesis. 1-3 Hr. PR: Consent.

DSM 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Dental Hygiene (DTHY)

DTHY 100. Health Care Terminology. 1 Hr. This course provides the foundation for understanding common terminology used in health care. The components, pronunciation, proper use, and abbreviations of medical terminology will be discussed. Emphasis will be placed on dental terminology.

DTHY 101. Introduction to Dental Hygiene. 1 Hr. PR: Permission from the director of dental hygiene. Historical evolution of the profession, the professional association, and its Code of Ethics will be emphasized. Professionalism, the various roles of a dental hygienist, legal scope of practice, and specialties of dentistry will also be included.

DTHY 185. Oral Anatomy. 2 Hr. PR: Acceptance into dental hygiene. The human neck bones, muscles, nerves, blood supply, lymphatics, glandular tissue, fascia/spaces, TMJ, and spread of dental infection are the focus of this course.

DTHY 186. Dental Anatomy. 2 Hr. PR: DTHY 100 and DTHY 185 and NBAN 301. Classroom and laboratory study of normal human dental morphology, tooth anomalies, pulp function, eruption patterns and occlusal relationships.


DTHY 211. Dental Radiology. 1 Hr. PR: DTHY 210. The application of radiology principles and techniques. Clinical integration and case presentations will be emphasized.

DTHY 220. Dental Nursing Techniques. 2 Hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.

DTHY 225. Dental Hygiene Techniques. 4 Hr. PR: Enrollment in dental hygiene. Fundamental principles and techniques of dental hygiene are presented through lectures, laboratory, and clinical participation.

DTHY 226. Clinical Dental Hygiene. 1 Hr. PR: DTHY 225. This course enables the sophomore dental hygiene student to gain proficiency in the treatment of patients.

DTHY 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

DTHY 300. Anesthesia for Dental Hygiene. I. 1 Hr. Application of neuroanatomy, physiology, and pharmacology to the administration of regional anesthesia using local anesthetic agents. Management of complications encountered and the techniques of administering these agents will be presented.


DTHY 322. Dental Radiology. 1 Hr. PR: DTHY 320. The application of radiology principles and techniques. Clinical integration and case presentations will be emphasized.


DTHY 351. Dental Health Education. 3 Hr. PR: Enrollment in dental hygiene. Methods, materials, and resources used in teaching dental health to various population groups.

DTHY 360. Dental Materials. 3 Hr. PR: Enrollment in Dental Hygiene. Lecture and laboratory covering the science and manipulation of dental materials.

DTHY 361. Expanded Functions. 2 Hr. PR: DTHY 360. Lecture and laboratory covering specialty topics in dentistry and four-handed dental assisting. Assisting, and the placing and carving of amalgam and resin restorations in dentiform teeth. (1 hr. lec., 4 hr. lab.)

DTHY 363. Periodontics 1. 1 Hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, assessment, diagnosis, treatment, and prevention within the scope of dental hygiene.

DTHY 364. Periodontics 2. 2 Hr. PR: DTHY 363. A sequential course to DTHY 363.

DTHY 366. Technical Expression and Dental Literature. 1 Hr. PR: Dental hygiene Major. Preparation and analysis of professional communications.


DTHY 380. Interdisciplinary Approach to Rural Health. 1 Hr. Fundamental principles of and background information on Appalachian history, poverty, and cultural diversity for the assessment of rural health needs. Assess the delivery of health care services and community development in rural settings.

DTHY 402. Dental Hygiene Practice. 2 Hr. PR: Enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.


DTHY 406. Advanced Clinical Dental Hygiene 2. 3-4 Hr. PR: Fourth year in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures.


DTHY 409. Clinical Dental Hygiene. 1 Hr. PR: DTHY 374. This course enables senior dental hygiene student to gain proficiency in the treatment of patients.

DTHY 410. Clinical Dental Hygiene 3. 1-4 Hr. This course enables the senior dental hygiene degree completion student to maintain proficiency in the treatment of patients.

DTHY 411. Clinical Dental Hygiene 4. 1-4 Hr. This course enables the senior dental hygiene degree completion student to maintain proficiency in the treatment of patients.

DTHY 440. Senior Integration Seminar. 1 Hr. PR: Consent. A thorough analysis and integration of didactic, laboratory and clinical content via lectures, discussions and cases in preparation for licensure.

DTHY 445. Applied Pharmacology. 1 Hr. PR: PCOL 260. Case studies encountered in dental hygiene practice that require critical thinking and decision-making to manage the dental treatment needs and potential complications of patients taking multiple pharmacologic agents.


DTHY 478. Clinical Evaluation. I. 1 Hr. PR: DTHY 378. Preparation for clinical instruction and evaluation. Emphasis is placed on clinical evaluation procedures, proper instrumentation and the skills/strategies utilized to promote affective and psychomotor skill development in students.

DTHY 490. Teaching Practicum. 1-3 Hr. Teaching practice as a tutor or assistant.

DTHY 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

DTHY 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

DTHY 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

DTHY 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

DTHY 496. Senior Thesis. 1-3 Hr. PR: Consent.

DTHY 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Economics (ECON)

ECON 111. The Economic System. I, II. 3 Hr. Introduction to the analysis of the economic system. Pricing system, monetary system, determination of national income and employment.

ECON 201. Principles of Microeconomics. 3 Hr. PR: Sophomore standing; pre-requisite may be waived at regional campus. Introductory microeconomics analysis. Competitive behavior of firms, price determination, efficiency in production and equity in distribution. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

ECON 202. Principles of Macroeconomics. 3 Hr. PR: ECON 201. Introductory macroeconomics analysis. Aggregate demand and supply, saving, investment, the level of employment and national income determination, monetary and fiscal policy. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

ECON 225. Elementary Business and Economics Statistics. 3 Hr. PR: Sophomore standing and (MATH 126 with grade of “C” or better) or (MATH 129 with grade of “C” or better) or MATH 155 or MATH 156 or MATH 124. Basic concepts of statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression and correlation with emphasis on business and economic examples. (Equivalent to STAT 211.)

ECON 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ECON 301. Intermediate Micro-Economic Theory. 3 Hr. PR: ECON 201. Consumer choice and demand; price and output determination of the firm, and resource allocation, under different market structures; welfare economics, externalities, public goods, and market failure; general equilibrium; other topics.

ECON 302. Intermediate Macro-Economic Theory. 3 Hr. PR: ECON 201 and ECON 202. Forces which determine the level of income, employment, output, the inflation rate, and the balance of trade. Particular attention to consumer behavior, investment determination, and government fiscal and monetary policy.


ECON 325. Applied Business and Economic Statistics. 3 Hr. PR: ECON 225 or STAT 211. Continuation of ECON 225. Principal statistical methods used in applied business and economic research including multiple regression, index numbers, time series analysis, forecasting models and methods, and sampling design.

ECON 331. Money and Banking. 3 Hr. PR: ECON 201 and ECON 202. The U.S. monetary and banking system and its functional relationship to the economic system; monetary theory and policy.

ECON 421. Introduction to Mathematical Economics. 3 Hr. PR: ECON 202 and (MATH 150 or MATH 155 or MATH 156.) Principal mathematical techniques including set operation, matrix algebra, differential and integral calculus employed in economic analysis. Particular attention given to static (or equilibrium) analysis, comparative-static analysis and optimization problems in economics.

ECON 441. Public Economics. 3 Hr. PR: ECON 202. Economic roles of the public sector. Particular attention to market failure, redistributing income, the financing of public sector activities, relationships between federal, state, and local governments, and public choice.


ECON 446. Transportation Economics. 3 Hr. PR: ECON 202. Economic and institutional analysis of the domestic transportation system of the United States. Topics include role of transportation, carrier characteristics and services, transportation rates and costs, regulation of transportation.

ECON 447. Economics of Travel and Tourism. 3 Hr. PR: ECON 201. Application of economic analysis to travel and tourism. Topics include consumer demand and business firm behavior in the travel and tourism industry, pricing, and role of government in the industry.


ECON 452. Economics of Cuba. II, S. 3 Hr. PR: ECON 201 and ECON 202 or consent. Coreq: HIST 242 or POLS 355. The Cuban economy during the socialist period with focus on the crisis period after the loss of Soviet subsidies. This course requires travel to Cuba.

ECON 453. Economic Transition in Europe. 2 Hr. PR: ECON 201 and ECON 202. Socialism and transition from socialism to capitalism. The experiences of the European Transitional economies. Requires travel to one of the transitional economies at the students' expense.

ECON 453A. Economic Transition in Europe - Travel. 1 Hr. PR: ECON 201 and ECON 202. Socialism and Transition from socialism to capitalism. The experiences of the European Transitional economies. Requires travel to one of the transitional economies at the student's expense.


ECON 455. Economic Development. 3 Hr. PR: ECON 202. The problems, changes, and principal policy issues faced by non-industrialized countries.

ECON 461. Regional Economics. I. 3 Hr. PR: ECON 202. Analysis of the regional economy's spatial dimension, emphasizing interregional capital and labor mobility, the role of cities, objectives and issues of regional policy, lagging regions and Appalachia, growth poles, and regional growth and income distribution.

ECON 462. Urban Economics. 3 Hr. PR: ECON 202. Analyzes growth, decline, and socioeconomic problems of cities. Topics include the development of cities, urban spatial structure and land-use patterns, poverty and discrimination, housing, urban transportation and congestion, local government structure, and urban fiscal problems.

ECON 471. Labor Economics. 3 Hr. PR: ECON 202. Labor market analysis. Topics include wage and employment determination, human capital theory, discrimination, unemployment, migration, effects of unions and government regulation, and life-cycle patterns of work.

ECON 481. American Economic History. 3 Hr. PR: ECON 220. Central issues in the development of the American economy.

ECON 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ECON 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ECON 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ECON 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ECON 495. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

ECON 496. Senior Thesis. 1-3 Hr. PR: Consent.
ECON 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Educational Psychology (EDP)
EDP 101. Learning Strategies for Academic Success. 3 Hr. The purpose of the course is to help students develop active learning strategies that are research-based and appropriate for the college curriculum that will enable them to achieve academic success.

EDP 283. Human Development and Learning. 3 Hr. Emphasis on development, standardized measurement, and classroom management.

EDP 285. Human Development and Learning. 3 Hr. Emphasizes competencies in applying principles of learning and measurement in classroom instruction.

EDP 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

EDP 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

EDP 493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

EDP 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

EDP 496. Senior Thesis. 1-3 Hr. PR: Consent.

EDP 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Education (EDUC)
EDUC 100. Education Colloquium. 1 Hr. Components of and requirements for the teacher preparation program, including specializations, professional organizations, requirements for admission to the major, avenues to program completion, and requirements for work with children or youth.

EDUC 200. Professional Inquiry in Education. 3 Hr. PR: EDUC 100 and ENGL 101 and ENGL 102. An examination of students preconceptions about education and their socialization process relative to the following; aims and purposes of public education, students as learners, curriculum, instruction.

EDUC 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

EDUC 301. Learning in Educational Settings. 3 Hr. PR: EDUC 200 and PSYC 101 and one human development course. Examination and utilization of behavioral and cognitive learning models; consideration of learner characteristics, and other factors affecting student learning.

EDUC 311. Practicum 1. 1 Hr. PR: Admission to the major, grade of "C" or better in EDUC 200 and EDUC 301 Conc. Application of models and paradigms of learning in content area through tutoring of individuals and small groups in an assigned public school site.

EDUC 312. Practicum 2. 1 Hr. PR: Admission to the major. Grade of "C" or better in EDUC 301 and EDUC 311 Conc. Application of paradigms of learning in content area through tutoring of individuals and small groups in an assigned public school site.

EDUC 400. Instructional Design and Evaluation. 3 Hr. PR: Admission to the major and a grade of "C" or better in both EDUC 302 and EDUC 312. Examination and demonstration of teacher behaviors required to plan classroom instruction, assess student learning, and evaluate instruction; emphasis on instruction, assessment, and evaluation to accommodate a wide range of student needs.

EDUC 401. Managing and Organizing Learning Environments. 3 Hr. PR: Admission to the major and a grade of "C" or better in EDUC 400 and EDUC 410 Conc. Examination of research and practice in organizing and managing school learning environments to produce optimal learning; development of management systems congruent with personal philosophy, research, learner characteristics, and content area.

EDUC 405. Issues in Middle School Education. I, II, 2 Hr. PR: EDUC 302. An analysis of the special needs of middle age students and the curriculum and strategies advocated for use in a middle school. Required for all students with a 5-8 content specialization.

EDUC 410. Practicum 3. 2 Hr. PR: Grade of "C" or better in EDUC 312 and EDUC 400 Conc. Planning and implementing content area instruction, applying different instructional models and assessment techniques to small and large groups in an assigned public school site.
EDUC 411. Practicum 4. 2 Hr. PR: Grade of "C" or better in EDUC 410 and EDUC 401 Conc. Planning and implementing content area instruction, applying various management, instruction, and assessment models to small and large groups in an assigned public school site.

EDUC 414. Promoting Creative Expression in Elementary Classrooms. II. 3 Hr. PR: EDUC 410. Includes an examination of creative experiences for children in elementary school, preschool-grade 6. Topics include the use of the creative arts in learning activities, curriculum development, and instructional strategies.

EDUC 430. Mathematics Methods for Elementary Teachers. I. 3 Hr. PR: EDUC 312. Students will examine the content and pedagogy appropriate for mathematics instruction in the elementary grades. Emphasis is placed on the current reform movements in mathematics education.

EDUC 440. Elementary-Early Childhood Science Methods. I. 3 Hr. PR: EDUC 312. Provides students with the knowledge, skills and affective qualities needed to be an effective elementary science teacher and be committed to teaching science in the elementary classroom.

EDUC 450. Issues and Methods for Teaching Elementary Social Studies. II. 3 Hr. PR: EDUC 410. Students examine issues facing social studies education and evaluate and plan lessons and instructional activities that apply learning theory to the philosophy and standards of social studies education for all elementary students.

EDUC 460. Foundations of Language and Literacy. II. 3 Hr. PR: EDUC 200 and EDUC 311. This course focuses on foundations of language and literacy development. Students construct philosophies, approaches, and strategies to promote development of literacy in the young child. Focus will include the larger contexts of literacy including home and community.

EDUC 461. Promoting Literacy Connections. I. 3 Hr. PR: EDUC 460. This course emphasizes the development of literacy in the elementary setting. Students will develop and refine philosophies, approaches, and strategies to promote the development of literacy in the primary grades. Focus will include the larger contexts of literacy including content literacy, thematic instruction, and the teacher's leadership role.

EDUC 498. Honors. I, II. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Electrical Engineering (EE)
EE 221. Introduction to Electrical Engineering. 3 Hr. PR: PHYS 111 and MATH 156. Electrical engineering units, circuit elements, circuit laws, measurement principles, mesh and node equations, network theorems, operational amplifier circuits, energy storage elements, sinusoids and phasors, sinusoidal steady state analysis, avarage and RMS values, complex power, (3 hr. lec. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.)

EE 222. Introduction to Electrical Engineering Laboratory. 1 Hr. Coreq:EE 221. Design and experimental exercises basic electrical circuits. Use of the digital computer to solve circuit problems. (3 hr. lab.)

EE 223. Electrical Circuits. 3 Hr. PR: EE 221 and EE 222 and PHYS 112 and MATH 156. Continuation of EE 221. Time response of RC and RL circuits, unit step response, second order circuits, poly-phase systems, mutual inductance, complex frequency, network frequency response, two-port networks and transformers. Fourier methods and Laplace Transforms.

EE 224. Electrical Circuits Laboratory. 1 Hr. Coreq:EE 223. Design and experimental exercises in circuits. Transient circuits, steady state AC circuits, frequency response of networks. Use of digital computer to solve circuit problems. (3 hr. lab.)

EE 251. Digital Electronics. 3 Hr. PR: EE 221 and CPE 271 and PHYS 112. Diode and bipolar and field-effect transistor device operation and switching models. Use of bipolar and field-effect transistors and diodes in switching and logic circuits. Switching circuits and logic gates including logic levels, circuit configuration, and interfacing. (3 hr. lec.)

EE 252. Digital Electronics Laboratory. 1 Hr. Coreq:EE 251. Design, fabrication, and measurement of digital electronic circuits. Modeling and use of discrete devices, logic gates, display devices in switching circuits and timer circuits, Interfacing with integrated logic gates. (3 hr. lab)


EE 327. Signals and Systems 1. 3 Hr. PR: MATH 261 and EE 223. Introduction to linear system models and solutions in the time and frequency domains. Balanced emphasis is placed on both continuous and discrete time and frequency methods. (3 hr. lec.)

EE 328. Sigals and Systems Laboratory. 1 Hr. PR: EE 327 and Coreq:EE 329. Laboratory experiments in measurement and analysis of systems and signals.(3 hr. lab.)

EE 329. Signals and Systems 2. 3 Hr. PR: EE 327 and STAT 215. Analysis of continuous and discrete time systems. Block diagrams, stability, feedback control. Statistical description of nondeterministic signals, correlation functions, and spectral density, concepts applied to communication and feedback systems. (3 hr. lec.)
EE 335. Electromechanical Energy Conversion and Systems. 3 Hr. PR: EE 223 and EE 224 and PHYS 112. Electric energy sources, fundamentals of electromechanical energy conversion, transformers and rotating machinery, transmission line parameters. (3 hr. lec.)


EE 345. Engineering Electromagnetics. 3 Hr. PR: MATH 261 and PHYS 112. Continued use of vector calculus, electrostatics, magnetostatics, Maxwell’s Equations, and boundary conditions Introduction to electromagnetic waves, transmission lines, and radiation from antennas.

EE 355. Analog Electronics. 3 Hr. PR: EE 223 and EE 251. Electronic devices in analog circuits. Small-signal and graphical analysis of BJT and FET circuits; frequency response, feedback, and stability. Linear and nonlinear operational amplifier circuits. Power amplifiers and power control by electronic devices. (3 hr. lec.)

EE 356. Analog Electronics Laboratory. 1 Hr. Coreq: EE 355. Design, fabrication, and measurement of analog electronic circuits. Use of discrete devices, integrated circuits, operational amplifiers, and power electronic devices. Study of biasing and stability, frequency response, filters, analog computation circuits, and power control circuits. (3 hr. lab.)

EE 411. Fundamentals of Control Systems. 3 Hr. PR: EE 327. Introduction to classical and modern control; signal flow graphs; state-variable characterization; time-domain, root-locus, and frequency techniques; stability criteria. (3 hr. lec.)

EE 413. Introduction to Digital Control. 3 Hr. PR: EE 327. Sampling of continuous-time signals and transform analysis. State-variable analysis for linear discrete-time systems and design of digital controller. (3 hr. lec.)

EE 425. Biometric Systems. 3 Hr. PR: STAT 215 and MATH 261 and CS 111 (EE 327 and CS 350 suggested). This course presents an introduction to the principles of operation, design, testing, and implementation of biometric systems, and the legal, social and ethical concerns associated with their use.

EE 426. Electrical Power Distribution Systems. 3 Hr. PR: EE 335 and EE 336 or consent. General considerations; load characteristics; subtransmission and distribution substations; primary and secondary distribution, secondary network systems; distribution transformers; voltage regulation and application of capacitors; voltage fluctuations; protective device coordination. (3 hr. lec.)

EE 431. Fiber Optics Communications. 3 Hr. PR: EE 329 and EE 345. Fundamentals of optics and light wave propagation, guided wave propagation and optical wave guides, light sources and light detectors, couplers, connections, and fiber networks, modulation noise and detection in communication systems. (3 hr. lec.)

EE 445. Introduction to Antennas. 3 Hr. PR: EE 445 or equivalent. Development of Maxwell’s equations and general electromagnetic theory underpinning broadcast communication systems, wave propagation, antennas and antenna arrays.

EE 450. Device Design and Integration. 3 Hr. PR: EE 345 and EE 355. Fundamentals of semiconductor materials, p-n junctions, metal-semiconductor junctions, JFET’s, MESFET’s, MOSFET’s, physical device design, device simulation, gate level and CMOS design and layout. (3 hr. lec.)

EE 453. Operational Amplifier Applications. 3 Hr. PR: EE 355 and EE 356. Linear integrated circuit building blocks applied to such functions as amplification, controlled frequency response, analog-digital conversion, sampling, and waveform generation. (2 hr. lec., 3 hr. lab.)

EE 455. Introduction to Microfabrication. I. 3 Hr. PR: EE 355 or consent. Introduction to the physical processes underlying current and emerging microfabrication technology and their selective use in the technology computer aided design (TCAD) and fabrication of electrical, optical, and micromechanical devices and systems.
EE 457. Fundamentals of Photonics. I, II. 3 Hr. PR: EE 345 and EE 353 or consent. Introduction to the physical models and mechanisms through which generation, characterization, and control of light is achieved. Applications including optical information processing, holographic storage, and photonic switching provide the framework for photonic concept presentation. (3 hr. lec.)

EE 459. Transistor Circuits. 3 Hr. PR: EE 355 and EE 356 or equiv. Analysis and design of subcircuits used in analog integrated circuit modules. Transistor models, low-frequency response of multistage amplifiers, current sources, output stages and active loads. (3 hr. lec.)

EE 461. Introduction to Communications Systems. 3 Hr. PR: EE 329. Introduction to the first principles of communications systems design. Analysis and comparison of standard analog and pulse modulation techniques relative to bandwidth, noise, threshold, and hardware constraints. Communications systems treated as opposed to individual circuits and components of the system. (3 hr. lec.)

EE 463. Digital Signal Processing Fundamentals. 3 Hr. PR: MATH 251 and EE 327. Theories, techniques, and procedure used in analysis, design, and implementation of digital and sampled data filters. Algorithms and computer programming for software realization. Digital and sampled data realizations, switched capacitor and charge-coupled device IC’s. (3 hr. lec.)

EE 465. Introduction to Digital Image Processing. I. 3 Hr. PR: EE 251 and EE 327. Introduction to the vision process fundamental mathematical characterization of digitized images, two-dimensional transform methods used in image processing, histogram analysis and manipulation, image and filtering techniques, image segmentation, and morphology. (3 hr. lec.)

EE 466. Digital Image Processing. 3 Hr. PR: EE 327 and EE 329. Covers fundamentals in digital speech processing including production, speech analysis, speech coding, speech enhancement, speech recognition, speaker recognition. Emphasize hand-on experience of processing speech signals using MATLAB.

EE 480. Senior Design Seminar. 2 Hr. PR: ENGL 102 and consent. Penultimate semester. Group senior design projects with individual design assignments appropriate to student’s discipline. Complete system-level designs of the subsequent semester’s project presented in written proposals and oral presentations. (Equivalent to BIOM 480, CPE 480, CS 480) (2 hr. lec., 1 hr. conf.)

EE 481. Senior Design Project. 3 Hr. PR: EE 480; continuation of EE 480. Detailed design and implementation of the system including choice of components, algorithm development, interfacing, troubleshooting, working in groups, and project management. Also covers professional topics, including ethics, liability, safety, socio-legal issues, risks and employment agreements. (1 hr. lec., 1 hr. conf., 2 hr. lab.)

EE 487. Electric Vehicle Design. II. 3 Hr. PR: EE 221 or EE 306. Introduction to all electric and hybrid electric vehicles. Review of safety considerations, energy storage, motor and instrumentation technologies. Simulations software for energy requirements, efficiency and capabilities of EV’s is required. Participation is expected in the design, construction, and testing of an EV.

EE 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

EE 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


EE 494 A-Z. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

EE 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

EE 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

EE 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

English (ENGL)

ENGL 90. Developmental Writing. 3 Hr. A course specifically designed for students needing to develop basic writing skills. Entering freshman who score 18 or less on the ACT English or who score below 450 on the SAT verbal may not register for ENGL 101 until they receive a grade of C or better in this course. (Not offered on the Morgantown campus.)
ENGL 101. Composition and Rhetoric. I, II, S. 3 Hr. A course in writing non-fiction prose, principally the expository essay. Required of all bachelor’s degree candidates unless the requirement is waived under regulations prevailing at the time of admission. (Note: Entering freshmen who score 18 or below on the ACT English (or 450 or below on the SAT verbal) may not register for ENGL 101 until they demonstrate requisite skills on the English Department’s Writing Placement Test. Because of anticipated revisions in SAT or ACT scores, these scores are subject to change. Students should contact the English department for more current information.) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

ENGL 102. Composition and Rhetoric. I, II, S. 3 Hr. PR: ENGL 101 or equiv. Writing college-level research papers based on argumentative models. Precision in footnotes, bibliographies, usage, punctuation, and stylistics assumed. Required of all bachelor’s degree candidates unless the requirement is waived under regulations prevailing at the time of admission.

ENGL 103. Accelerated Academic Writing. 3 Hr. PR: Consent. An accelerated 3-credit hour composition course for students who have already demonstrated a certain level of writing proficiency. English 103 satisfies WVU’s introductory writing requirement by emphasizing both expository writing and researched argumentative writing.

ENGL 111. Introduction to Creative Writing. I, II, 3 Hr. PR: ENGL 101 and ENGL 102 or equivalent. Practice in writing a sequence of structured exercises designed to enhance creative writing skills.

ENGL 131. Poetry and Drama. I, II. 3 Hr. An introduction to the genres.

ENGL 132. Short Story and Novel. I, II. 3 Hr. An introduction to the genres.


ENGL 154. African American Literature. I, II. 3 Hr. A historical introduction and survey from its beginnings to the present.

ENGL 156. Literature of Native America. I, II. 3 Hr. A historical survey of Native American prose, poetry, song, and story from the beginning to the present.

ENGL 185. Technical Writing and Reporting. 3 Hr. This course is designed to develop skill in presenting and reporting scientific and technical information in a simple, clear, and factual manner. Designed for students in career programs.

ENGL 199. Orientation to English Studies. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

ENGL 201. Advanced Composition. I, II. 3 Hr. PR: (ENGL 101 and ENGL 102) or ENGL 103. Composition for students who wish to further develop their expository and argumentative writing skills.

ENGL 211. Sturm Workshop. 1 Hr. PR: Consent. Creative writing workshop conducted by Sturm visiting writer in residence.

ENGL 212. Creative Writing: Fiction. I, II. 3 Hr. An open enrollment introduction to the writing of fiction.

ENGL 213. Creative Writing: Poetry. I, II. 3 Hr. An open enrollment introduction to the writing of poetry; practice in the basics of image, metaphor, line, form, sound and voice.

ENGL 214. Creative Writing: Non-Fiction. I, II. 3 Hr. Introductory course in the writing of non-fiction.

ENGL 221. The English Language. I, II. 3 Hr. PR: ENGL 101 and sophomore standing. An introduction to language, its structure in the mind, and its use in the United States.

ENGL 225. Western World Literature. I, II. 3 Hr. Selected readings in the canon of Western world literature, both ancient and modern.

ENGL 226. Non-Western World Literature. I, II. 3 Hr. Selected readings in non-Western world literature, ancient and modern.

ENGL 230. Film Studies. I, II. 3 Hr. Topics in the study of film, or film and literature, in a historical, theoretical and/or cultural context.

ENGL 231. Prose. I, II. 3 Hr. Study of prose genres, including autobiography, biography, travel narrative and nature writing.

ENGL 232. Poetry. I, II. 3 Hr. Appreciation and enjoyment of poems through critical and analytical reading. Studies in the various types of poetry, and of the language, imagery, and techniques of poetic expression.

ENGL 233. The Short Story. I, II. 3 Hr. The short story’s structure, history, and contemporary forms.

ENGL 234. Drama. I, II. 3 Hr. The drama’s structure, history, and contemporary forms.
ENGL 235. Novel. I, II. 3 Hr. The novel's structure, history, and contemporary forms.

ENGL 236. The Bible as Literature. I, II. 3 Hr. Analysis of the themes, topics and literary genres of the Old and New Testaments. Issues to be discussed include the unity of the text, the status of authorship, translation, and the depiction of God.

ENGL 241. American Literature 1. I, II. 3 Hr. A historical introduction and survey from its beginnings to the mid-nineteenth century.

ENGL 242. American Literature 2. I, II. 3 Hr. A historical introduction and survey from the mid-nineteenth century to the present.

ENGL 251. American Folklore and Culture. I, II. 3 Hr. Introduction to folklore of the USA. Folklore and American culture. Subject groups vary but usually include Native Americans, early European settlers, African Americans, and 20th century immigrants.

ENGL 252. Appalachian Fiction. I, II. 3 Hr. Reading of short stories, novels, and other narratives by Appalachian authors.


ENGL 254. African American Literature. I, II. 3 Hr. Studies in the literature of African American authors, 1845 to the present.

ENGL 255. Multiethnic Literature. I, II. 3 Hr. This course examines literature by Americans of diverse ethnicities including, but not limited to, Asian Americans, Latinos, Native Americans, African Americans, and European Americans of various class/religious/regional backgrounds.

ENGL 257. Science Fiction and Fantasy. I, II. 3 Hr. A study of the history and nature of science fiction from H. G. Wells to the present, with special attention to features of prose narration.

ENGL 258. Popular American Culture. I, II. 3 Hr. A survey of modern popular American culture from 1940 to the present, with special emphasis on popular literature, music, television, movies, radio in its golden age, and comic books.

ENGL 259. Fiction for Adolescents. I, II. 3 Hr. Designed for prospective teachers of English and language arts. Course focuses on recent fiction for adolescents as well as on traditional literature appropriate to the needs, interests, and abilities of youth. Evaluative criteria emphasized.

ENGL 261. British Literature 1. I, II. 3 Hr. A historical introduction and survey from the Middle Ages through the eighteenth century.

ENGL 262. British Literature 2. I, II. 3 Hr. A historical introduction and survey from the late eighteenth century to the present.

ENGL 263. Shakespeare 1. I, II. 3 Hr. Several of Shakespeare's most important plays.


ENGL 285. Images of Women in Literature. I, II. 3 Hr. Representative literary works studied against a backdrop of social and historical documents to examine the effect of images of women in literature on the self-image of women today.

ENGL 288. Sexual Diversity in Literature and Film. I, II. 3 Hr. Representation of lesbians, gay men, and bisexuals in literature and film.

ENGL 293 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ENGL 301. Writing Theory and Practice. 3 Hr. PR: (ENGL 101 and ENGL 102) or ENGL 103. Tradition and contemporary approaches to rhetoric and writing theory for professional writing and editing students who wish to develop their abilities to analyze and produce written texts.

ENGL 302. Editing. I, II. 3 Hr. A comprehensive approach to editing, including the correctness and effectiveness of a document, information design, and editorial responsibility. Students gain a realistic perspective on workplace practice through real-world scenarios, case studies, and technological applications.

ENGL 303. Multimedia Writing. I, II. 3 Hr. Study of communication and design issues in multimedia composition. Focuses on communication, creative expression, persuasion, interactivity, and rhetorical principles. Practice in composing multimedia documents such as online publications, interactive literary works, and tutorials.
ENGL 304. Business and Professional Writing. I, II. 3 Hr. PR: (ENGL 101 and ENGL 102) or ENGL 103. Students will analyze different writing contexts, meet the needs of different audiences, and organize and present material in letters, memos, and reports. Includes some research, Internet components, and a review of style, grammar and usage.

ENGL 305. Technical Writing. I, II. 3 Hr. PR: (ENGL 101 and ENGL 102) or ENGL 103. Writing in scientific and technical fields. Introduces students to typical genres, workplace practices, document design, and conventions of writing for experts and non-experts.

ENGL 306. Topics in Humanities Computing. I, II. 3 Hr. Topics include: literary studies (electronic publications, web-based interactive fiction, poetry, drama, nonfiction); creative writing in digital media, composition online, pedagogy, cultural studies of electronic media, online communications, language studies. Topics rotate; check with the instructor for current topic.

ENGL 309. Approaches to Teaching Composition. I. II. 3 Hr. PR: ENGL 201. (May not be taken for both undergraduate and graduate credit.) Surveys attitudes toward and techniques of teaching writing in elementary and secondary schools. Provides experiment in class with methods of teaching writing.

ENGL 312. Creative Writing Workshop: Fiction. I, II. 3 Hr. PR: Grade of “B” or higher in ENGL 212. Advanced workshop workshop in creative writing for students seriously engaged in writing fiction.

ENGL 313. Creative Writing Workshop: Poetry. I, II. 3 Hr. PR: Grade of “B” or higher in ENGL 213. Advanced workshop in creative writing for students seriously engaged in the writing of a major group of poems.

ENGL 314. Creative Writing Workshop: Non-Fiction. I, II. 3 Hr. PR: Grade of “B” or higher in ENGL 212 or ENGL 213 or ENGL 214. Advanced workshop in creative writing for students seriously engaged in the writing of nonfiction.

ENGL 318. Topics in Creative Writing. II. 3 Hr. (May be repeated for a maximum of 9 hours.) Advanced work in creative writing; course content changes with genre: fiction, poetry, non-fiction.

ENGL 321. History of the English Language. I, II. 3 Hr. Study of the nature of the language; questions of origins, language families, development, relationships of English as one of the Indo-European languages.

ENGL 323. Introduction to Old English. I, II. 3 Hr. An introduction to the grammar of Old English in order to read texts in the language. After the basic grammar is mastered, students translate a selection of Old English prose texts and poems.

ENGL 329. Topics in English Language. I, II. 3 Hr. This course rotates a set of topics offering students field-specific approaches to the study of the English language. Students engage the language through active research paradigms focusing on the social context of the language.

ENGL 331. Topics in Genre. I, II. 3 Hr. This variable-topic course will trace formal and thematic conventions in poetry, drama, prose fiction, and/or nonfiction.

ENGL 339. Theatre Tour. 2 Hr. Introduces students to texts in performance by reading dramatic texts and traveling to see those texts in performance. Performance sites may include either international or U.S. locations.

ENGL 339A. Theatre Tour Travel. 1 Hr. Must be taken with ENGL 339.

ENGL 342. American Drama. I, II. 3 Hr. Representative American dramas and history of theatre in America.


ENGL 344. Modern American Poetics. I, II. 3 Hr. A close study of those poets who have shaped the aesthetics of contemporary American poetry.

ENGL 345. American Literature to 1800. I, II. 3 Hr. Major genres, authors, themes, and topics in American literature, c. 1500 to 1800.

ENGL 346. American Literature 1800-1865. I, II. 3 Hr. Major genres, authors, themes and topics in American Literature from 1800 to 1865.

ENGL 347. American Literature 1865-1915. I, II. 3 Hr. Major genres, authors, themes, and topics in American Literature from 1865 to 1915.

ENGL 348. 20th Century American Literature. I, II. 3 Hr. Major genres, authors, themes, and topics in American literature from 1900 to 1999.

ENGL 349. Contemporary American Literature. I. II. 3 Hr. Completes the American literature sequence with an examination of stories, novels, poetry and drama (stage and screen) of the period from 1960 to present.

ENGL 351. Folk Literature. I, II. 3 Hr. The folk ballad, its origin, history, and literary significance, based on Child's collection and on American ballad collections.
ENGL 352. Topics in Appalachian Studies. I, II. 3 Hr. Studies of authors, genres, themes, or topics in Appalachian literature.

ENGL 354. Topics in African American Literature. I, II. 3 Hr. This course examines a specific aspect of African American literature and/or culture. Topics vary from semester to semester.

ENGL 355. Topics in Multiethnic Literature. 3 Hr. PR: ENGL 102 or ENGL 103. Specialized topics course reflective current issues in multiethnic literature and culture. Topics very per semester.

ENGL 356. Topics in Native American Literature. I, II. 3 Hr. Specialized topics courses reflecting current trends and issues in Native American literature and culture. Subjects vary per semester.

ENGL 360. Literature of the Middle Ages. I, II. 3 Hr. Literature of the period 1066-1485 in relation to the cultural transformations of the time. Course emphases may include (but are not limited to) Arthurian romance, the “mystery” plays, crusade narratives, political ballads, and women’s writings.

ENGL 361. Chaucer. I, II. 3 Hr. Early poems, Troilus and Criseyde, and The Canterbury Tales. In addition to an understanding and appreciation of Chaucer’s works, the student is expected to acquire an adequate knowledge of Chaucer’s language.

ENGL 362. Literature of the 16th Century. I, II. 3 Hr. Studies from Caxton to Bacon, from Skelton to Shakespeare.

ENGL 363. Shakespeare 2. I, II. 3 Hr. Advanced studies in Shakespeare’s plays and non-dramatic poetry. Methodological emphases varying per semester, including textual, historical, dramaturgical and postcolonial approaches.

ENGL 364. Literature of the 17th Century. I, II. 3 Hr. Studies from Donne to Dryden.

ENGL 365. Milton. I, II. 3 Hr. All of Milton’s poems and a few selected prose works.

ENGL 366. Literature of the Eighteenth Century 1. I, II. 3 Hr. Literature of the period 1660-1744 in relation to social, political, and religious movements of the time.

ENGL 367. Literature of the Eighteenth Century 2. I, II. 3 Hr. Continuation of ENGL 366, covering the latter half of the century. May be taken independently of ENGL 366.

ENGL 368. The Romantic Movement. I, II. 3 Hr. A survey of the works of the major British Romantic writers along with an introduction to works of scholarship in British Romanticism.

ENGL 369. Victorian Literature. I, II. 3 Hr. Study of Victorian poets and prose writers with an emphasis on historical, political, and cultural issues. Representative authors may include: Tennyson, the Brownings, Arnold, Dickens, the Brontës, Eliot, and Hardy.


ENGL 372. Commonwealth Literature. I, II. 3 Hr. This course examines fiction, poetry, and plays written by citizens of countries that are members of the British Commonwealth; for instance, Canada, New Zealand, Australia, and some Caribbean Islands.

ENGL 373. Contemporary British Literature. I, II. 3 Hr. The poems, plays, and fiction read in this course reflect Britain’s current multicultural makeup: among them, the North and the Republic of Ireland, Scotland, Wales, England, South Africa, Pakistan, and India.

ENGL 374. Postcolonial Literature. I, II. 3 Hr. This course will address various issues in postcolonial literature, including gender, nationalism, resistance, development, neocolonialism and diasporic identities. In addition, students will examine contemporary literary modes associated with the postcolonial project of revisionist history.

ENGL 381. Literary Criticism. I, II. 3 Hr. Literary criticism from Aristotle to modern times.

ENGL 382. Contemporary Literary Theory. I, II. 3 Hr. An introduction to the predominant schools of literary theory of the twentieth century, including psychoanalytic criticism, Marxist criticism, feminist criticism, deconstruction, postmodernism, and cultural studies.

ENGL 383. Introduction to Cultural Studies. I, II. 3 Hr. Students will explore the ways in which we are all simultaneously users of and used by culture, and the ways in which cultural practices influence how we think, feel, and act in everyday life.

ENGL 384. Introduction to American Studies. I, II. 3 Hr. This course introduces students to methodologies of studying American popular and mass cultures in the past and present. Topics may include film, literature, performance, music, economics, and technology.
ENGL 385. American Women Writers. I, II. 3 Hr. Studies in the literature of American women writers. Syllabi may vary per term; topics may include Jewish American women writers, women writers of the suffrage movement, and 20th century American women writers.

ENGL 386. British Women Writers. I, II. 3 Hr. This course examines fiction, poems, essays, and drama written by British women writers, beginning with the fourteenth-century author Margery Kempe and continuing into the late twentieth century with Nadine Gordimer.

ENGL 387. Topics in Women’s Literature. I, II. 3 Hr. Syllabus will vary per term. Topics include women writers outside of Great Britain and the United States; comparative women writers; women’s writing on a particular theme or topic.

ENGL 388. Topics in Gay/Lesbian Studies. I, II. 3 Hr. Specialized topics courses reflecting current trends in studies of gay/lesbian history, literature, culture, and theory. Subjects will be taught on a rotation.

ENGL 405. Fiction for Adolescents. I, II. 3 Hr. A survey of fiction for adolescents with special attention to literary theories that assist its interpretation.

ENGL 418. Creative Writing Seminar. I, II. 3 Hr. PR: 9 Hr. of creative writing and consent. Individual projects in creative writing pursued in a workshop setting.

ENGL 490. Teaching Practicum. I, II. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ENGL 491. Professional Field Experience. I, II. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ENGL 491A. Professional Field Experience. I, II. S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ENGL 493 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ENGL 494A. Special Seminars. I, II. 1-6 Hr. Specific authors to be approved by instructors.

ENGR 100. Introduction to Engineering Applications. 3 Hr. PR: Coreq. of MATH 126A or MATH 126B or MATH 126C or MATH 128 or MATH 129 or consent. Introduction to basic problem solving of engineering applications using algebra and trigonometry.

ENGR 101. Engineering Problem Solving 1. 2 Hr. PR: Open to all freshman engineering students or consent. Orientation to engineering disciplines, academic success strategies, engineering design process and team projects, use of computers in problem solving, technical report writing, presentational techniques, and Internet applications.

ENGR 102. Engineering Problem-Solving 2. 3 Hr. PR: ENGR 101 and MATH 155 with a C or higher. Continued development of engineering problem-solving, teamwork, and communication skills with emphases on using the computer as a tool and algorithm development with a high-level language such as MATLAB.

ENGR 129. Engineering Math. 1 Hr. PR: Consent. Review of key pre-calculus and early calculus concepts and topics for engineering students.

ENGR 199. Orientation to Engineering. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, students responsibilities, and opportunities. Development of academic success strategies and University experiences to equip students to make life decisions.

ENGR 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ENGR 463. Find an Engineering Job/Internship. 1 Hr. Assist engineering or computer science students in finding an engineering job or internship. Topics covered are resume and cover letter writing, interviewing skills, looking for a job, and assessing job offers.

ENGR 470. Fluid Mechanics Videos 1. 1 Hr. Videos and discussion illustrate phenomena such as turbulence, compressibility and surface tension. Supplements MAE 331 and MAE 335 and CE 321 and CE 322 and CE 522. Does not satisfy AE, CE or ME Technical elective requirement.

ENGR 471. Fluid Mechanics Videos 2. 1 Hr. Videos and discussion illustrate phenomena such as turbulence, compressibility and surface tension. Supplements MAE 331 and MAE 335 and CE 321, CE 322 and CE 522. Does not satisfy AE, CE or ME technical elective requirement.

ENGR 488. Cooperative (Co-Op) Education Experience. 1-18 Hr. PR: Consent. Prearranged co-op experience in student's major. Involves placement in public or private enterprise, supervision, and evaluation for credit by faculty and employer.

ENGR 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ENGR 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ENGR 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ENGR 496. Senior Thesis. 1-3 Hr. PR: Consent.

ENGR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

Entomology (ENTO)

ENTO 101. Bugs and Humans. 3 Hr. "Bugs" or insects will be related to humans; their impact on human civilization and religion, the impact of insect-borne diseases on human society and history, development of insect societies, and edible insects will be presented.

ENTO 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ENTO 301. Apiculture. 3 Hr. PR: BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104. Development, physiology, and behavior of the honey bee with emphasis on colony management, pollination of crops, diseases of bees, properties of honey and beeswax, and marketing of honey bee products.

ENTO 302. Apiculture Laboratory. 1 Hr. PR or CONC: ENTO 301. Identification and anatomy of honey bees, assembly and use of beekeeping equipment, field management of honey bees, examination for diseases and pests, production of queens and nuclei. (1 - 3 hr. lab.)

ENTO 401. Forensic Entomology. 3 Hr. Study of entomology in legal investigations; processing of specimens at crime scene/morgue; identification of arthropods from forensic cases; determination of post-mortem intervals; evaluation of case studies.

ENTO 404. Principles of Entomology. 4 Hr. PR: BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104 or equiv. Basic course dealing with the anatomy, morphology, physiology, reproduction, systematics, ecology, and management of insects.

ENTO 410. Insect Pests in the Agroecosystems. 4 Hr. PR: ENTO 404 or Consent. Life cycle, damage, and economic impact of pestiferous insects in the agroecosystem. Included are insect pests of agricultural and ornamental plants, stored products, structures, and livestock. (3 lec., 1 lab.)

ENTO 412. Pest Management. 4 Hr. PR: ENTO 404 or Consent. An in-depth look at current problems and solutions in controlling insect pests in an environmentally compatible manner. Management techniques include cultural, mechanical, physical, biological, regulatory, and chemical practices. (Also listed as ENVP 412.)


ENTO 470. Forest Pest Management. 4 Hr. PR: FMAN 311 and (BIOL 101 and BIOL 103 and PLSC 206) or (BIOL 115 and and BIOL 117). Relationship of insects and disease organisms to the forest ecosystem; recognition of agents that affect forest health; management strategies for regulating their damage. (Cross-listed with PPTH 470.)
ENTO 471. Urban Tree and Shrub Health, 1 Hr. PR: PPTH 470 or ENTO 470 or PPTH 401 and ENTO 404. Presents the unique problems associated with managing trees and woody shrubs in an urban environment; management options will be evaluated.

ENTO 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ENTO 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ENTO 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ENTO 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ENTO 496. Senior Thesis. 1-3 Hr. PR: Consent.

ENTO 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Entrepreneurship (ENTR)
ENTR 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ENTR 335. Small Business Entrepreneurship. 3 Hr. PR: ACCT 201 or ARE 110. This course will offer a study of the concepts necessary to become a successful small business entrepreneur. The coursework will include practical application of marketing and management skills.

ENTR 410. Innovation for Entrepreneurs. 3 Hr. This course provides basic concepts and tools of both strategy formation/implementation and financial management. In addition, students will participate in a simulated “real world experience” in managing an entrepreneurial business enterprise.

ENTR 415. Entrepreneurship in Action. 3 hr. This course provides basic concepts and tools of both strategy formation/implementation and financial management. In addition, students will participate in a simulated “real world experience” in managing an entrepreneurial business enterprise.

ENTR 435. New Venture Creations. 3 Hr. PR: ACCT 201 or ARE 110. This course will provide the student with a general understanding of the issues involved in the planning and creation of a new venture. The student will be exposed to the various roles of the entrepreneur.

ENTR 489. Student Business Plan Competition. 3 Hr. This course provide an in-depth instruction writing a comprehensive business plan and presenting the plan to a group of potential investors. Students must qualify by competing in the student business plan competition.

ENTR 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ENTR 492. Directed Study. 1-3 Hr. Directed study, reading, and/or research.

ENTR 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Environmental Protection (ENVP)
ENVP 119. Soil in the City. 3 Hr. Study of soil as a natural resource in urban environments; influence of soils on urban development; study of environmental problems related to soils in urban land uses.

ENVP 155. Elements of Environmental Protection. 3 Hr. An introduction to land and water resources and their management and protection. An evaluation of the relationships between human activities and natural environments and the interaction between natural resource utilization and development.

ENVP 355. Environmental Sampling and Analysis. 3 Hr. PR: BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104 and CHEM 115 and CHEM 116. Introduction to environmental sampling methods and analysis. Lecture and hands-on experience will include sampling plan development, sample point selection, sampling equipment use, containers and preservatives, sample analysis, chain-of-custody and protective equipment.

ENVP 401. Environmental Microbiology. 4 Hr. PR: AEM 341 or Consent. Microbiology as applied to soil, water, wastewater, sewage, air, and the general environment. Occurrence, distribution, ecology, detection of microorganisms in these environments. (Also listed as AEM 401.)
ENVP 412. Pest Management. 3 Hr. PR: ENTO 404 or Consent. An in-depth look at current problems and solution in controlling insect pests in an environmentally compatible manner. Management techniques include cultural, mechanical, physical, biological, regulatory, and chemical practices. (3 hr. lec.) (Also listed as ENTO 412.)

ENVP 415. Hazardous Waste Training. 3 Hr. Introduction to hazardous waste training. Lectures and hands-on experience with health and safety plan development, selecting personal protective equipment, air monitoring, incident command, site characterization, decontamination and toxicology. Includes two full-scale disaster exercises.

ENVP 420. Soil Microbiology. 3 Hr. PR: AEM 341. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of micro organisms in soil. (Also listed as AEM 420 and AGRN 420.)

ENVP 425. Environmental Soil Management. 3 Hr. PR: AGRN 202 and AGRN 203. This course provides a foundation for utilizing creative solutions and technical knowledge in preserving and enhancing soil and water quality. Soil conservation, precision agriculture and nutrient management for protection of soil and water quality are covered. (Also listed as AGRN 425.)

ENVP 455. Reclamation of Disturbed Soils. 3 Hr. PR: Junior standing or above. Principles of soil science, geology, hydrology, and engineering will be applied to surface mine planning, overburden handling during mining, soil replacement and amendments, revegetation practices, acid mine drainage control and treatment, hazardous wastes, and land management of disturbed areas. (Field trip required.) (Also listed as AGRN 455.)

ENVP 460. Environmental Impact Assessment. 3 Hr. PR: BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104 and CHEM 115 and CHEM 116. Application of physical, biological and social science principles to assess environmental impacts. Review and prepare environmental assessments, permits, site assessments and ecological risk assessments for environmental decision-making.

English as a Second Language (ESL)
ESL 140. ESL Academic Reading/Writing. 3 Hr. For undergraduate (and graduate) international students. Develops the skills necessary to improve academic reading skills to write well-organized and self-edited essays in a variety of rhetorical modes.

ESL 240. ESL Research and Writing. 3 Hr. Provides undergraduate and graduate international students with the skills, strategies, and procedures necessary for researching a topic and writing a well-organized and logical research paper.

ESL 250. Speaking and Listening. 3 Hr. For undergraduate and graduate international students. Provides guidance and practice in general and academic speaking and listening skills and improves oral comprehensibility through pronunciation activities.

ESL 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ESL 350. ITA Fluency. 3 Hr. Designed for graduate students wishing to become International Teaching Assistants (ITAs) Course focuses on the characteristics of effective oral communication in English in order to improve SPEAK test scores and comprehensibility in the classroom.

ESL 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ESL 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ESL 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ESL 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ESL 496. Senior Thesis. 1-3 Hr. PR: Consent.

ESL 498. Honors. 1-3 Hr. PR: Students in honors program and consent by the honors director. Independent reading, study or research.

Exercise Program (EXCG)
EXCG 201. Student Exchange Program. 0 Hr.
EXCG 202. Study Abroad Program. 0 Hr.

Exercise Physiology (EXPH)
EXPH 101. Introduction to Exercise Physiology. 1 Hr. A broad and foundational look at the function and adaptation of the systems of the human body in response to exercise.
EXPH 230. Exercise in American Culture. 3 Hr. Covers issues of exercise in America, specifically themes integral to American culture such as age, class, race, gender, and beauty.

EXPH 240. Medical Terminology. 1 Hr. PR: Sophomore standing. The study of medical language with special emphasis given to terms used in the field of exercise physiology.

EXPH 293 A-Z. Special Topics. I, II, S. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

EXPH 364. Kinesiology. I, II. 3 Hr. PR: Junior standing; consent. Anatomical, mechanical, and musculoskeletal study of the human body as the instrument for efficient performance of motor activities. (Laboratory work included.)

EXPH 365. Exercise Physiology 1. I, II, S. 3 Hr. PR: Junior standing; consent. The study of the functioning of body systems during exercise and the acute and chronic adaptations that occur from exercise stress.

EXPH 368. Lab Techniques and Methods. I, II. 3 Hr. PR: Junior standing; EXPH 364 and EXPH 365; consent. Techniques and methods for designing and conducting exercise programs for asymptomatic, healthy individuals.

EXPH 369. Strength/Conditioning Methods. 4 Hr. PR: EXPH 364 and EXPH 365. Scientific foundations of strength and conditioning with skills and methods to apply that knowledge in clinical exercise training.

EXPH 370. Writing for Exercise Science. 3 Hr. PR: (ENGL 101 and ENGL 102) or ENGL 103. Writing for medical scientific fields. Students will develop a book review, analyze discipline-specific texts, and write scientific literature reviews. Includes a review of style and language use.

EXPH 450. Theory of Aquatic Therapy. 3 Hr. PR: Junior standing or consent. An introduction to aquatic therapy. It covers the historical perspective, biophysiologic response to water immersion, and application of aquatic therapy to specific physical diagnoses.

EXPH 451. Application of Aquatic Therapy. 3 Hr. PR: Junior standing and consent. Design and implementation of aquatic exercise prescriptions to meet rehabilitation goals. Aquatic therapy techniques will be demonstrated and practiced.

EXPH 452. Aquatic Therapy Facility Management. 3 Hr. PR: Junior standing and EXPH 451 and consent. Facility design, water chemistry, water safety, and aquatic programming for special populations including rehabilitation, community re-entry, and wellness programs in a comprehensive continuum of care.

EXPH 460. Pathophysiology 3 Hr. PR: EXPH 365 and junior standing. Coreq: PHYS 241. The study of disease etiology and the physiological changes that occur from disease, with special emphasis given to the use of exercise in disease prevention and therapy.

EXPH 470. Research Methods. 3 Hr. PR: Senior standing. Coreq: EXPH 496. The study of the scientific method and research design as it relates to the field of exercise physiology and preventive medicine.

EXPH 475. Industry Organization in Exercise Physiology. 3 Hr. Prepares exercise physiology students to work in health care/fitness-related fields and promotes knowledge on how to build a business plan for entrepreneurship.

EXPH 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

EXPH 491. Professional Field Experience. I, II, S. Variable credit 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Internship.)

EXPH 493 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

EXPH 494. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

EXPH 495. Independent Study. I, II, S. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.

EXPH 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


EXPH 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

EXPH 498A: Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.
EXPH 498B. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

EXPH 498C. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

EXPH 498D. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading study, or research.

EXPH 498E. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

EXPH 498F. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

EXPH 498G. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

EXPH 498H. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

Fashion Design and Merchandising (FDM)

FDM 110. Introduction to Fashion Business. 3 Hr. Introduces the fashion business by exploring its production and distribution systems with a focus on basic merchandising, design, marketing and retail concepts.

FDM 130. Design Concepts of Dress. 3 Hr. Introduction to design theory and methodology, elements of design, principles of composition, and universal design related to dress. Practical application included.

FDM 131. Fashion Design. 3 Hr. Market trend research and fabric/trim sourcing are used to design a women’s wear collection. Studio work helps develop fashion illustration skills, create a collection, and drape one original design.

FDM 135. Figure and Fabric Drawing. 3 Hr. Basic examination and analysis of illustration techniques related to the human figure and various fabrics.

FDM 140. Introduction to Textiles. 3 Hr. Study and classification of fibers, yarns, fabrics, color-applications and finishes for apparel-industry applications. (Lecture plus laboratory.)

FDM 210. Fashion and Dress Through History. 3 Hr. History of Western civilization’s fashion and dress from antiquity to present within the corresponding social, cultural, technological, and economic contexts.

FDM 220. Fashion, the Body, and Culture. 3 Hr. Students learn the roles of fashion, the body, and dress in identity, social-psychological functioning, political and economic systems, and cultural diversity.

FDM 230. Apparel Production and Fit. 3 Hr. PR or CONC: FDM 130 and PR: FDM 140 and (MATH 124 and MATH 126 or higher) and fashion design major. Basic principles of apparel production, pattern alterations, and fitting. CAD introduction.

FDM 235. Product Development. 3 Hr. PR: FDM 110 and FDM 140 and (MATH 126A or MATH 126B or MATH 126C or MATH 128 or MATH 129 or MATH 150 or MATH 153 or MATH 155). Exploration of concepts and principles of apparel production and post-consumer alternatives.

FDM 240. Textiles for Interiors. 3 Hr. PR: FDM 140. Study of textile products for commercial and residential interiors. Production techniques, construction variables, and quality factors affecting service ability are emphasized. Federal legislation governing labeling, mandates concerning safety, and marketing strategies influencing selection are included.

FDM 250. Flat Pattern Design. 3 Hr. PR: FDM 210 and FDM 220 and FDM 230. Creative expression through pattern design is studied using the flat pattern method. Original apparel is designed and constructed.

FDM 251. Applied History of Fashion and Dress. 3 Hr. PR: FDM 231. Object-based and critical theory research applications of Western and non-Western fashion and dress from antiquity to the present. Costume collection and conservation lab work.

FDM 260. Visual Merchandising. 3 Hr. PR: FDM 210 and FDM 220 and (FDM 230 or FDM 240). An exploration of visual merchandising including elements of design and principles of composition, display, store design, theft prevention, promotion. Creation and analysis of visual merchandising projects using a teamwork approach.

FDM 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FDM 310. Merchandising Practicum. 3 Hr. PR: (FDM 230 or FDM 260) and FDM 261 and ENGL 102 and consent. Prearranged, supervised work experience providing practical insight into the apparel profession.
FDM 311. Fashion Study Tour. 1 Hr. PR: Junior or senior standing in FDM. Study of textile apparel, and retail industries through visits to historic costume collections, apparel firms, design showrooms, and retail establishments.

FDM 320. Merchandise Buying and Management 1. 3 Hr. PR or CONC: FDM 230 and FDM 231. This course serves as an introduction to the role and responsibilities of the buyer in relation to merchandise planning and control. Sourcing, negotiation strategies and current merchandising practices are explored via the case study method.

FDM 330. Fashion Design and Illustration. 3 Hr. PR: FDM 130 and PR or CONC: FDM 210 and FDM 230. Techniques of drawing fashion figures, media, and apparel design presentation techniques explored. Design vocabulary and sources of inspiration examined in the creation of original apparel design renderings and flats for specific target consumers.

FDM 332. Flat Pattern Design. 3 Hr. PR: FDM 230 or Consent. Creative expression through pattern design is studied using the flat pattern method. Apparel designed and constructed. (May be repeated for a maximum of 6 hr. credit.)

FDM 340. Textiles and Apparel in the Global Economy. 3 Hr. PR: FDM 140. Explores economics, political and social dimensions of the international production and trade of textiles and apparel. Emphasis on U.S. textile and apparel complex within an international perspective. (Even years.)

FDM 350. Draping. 3 Hr. PR: FDM 235 and FDM 330. Creative and technical pattern development using the draping method. Original apparel designs patterned and constructed.

FDM 360. Fashion Merchandising. 3 Hr. PR: (FDM 230 or FDM 260 or FDM 261) and ECON 201. Surveys the structure of retail organizations, location and growth strategies to distribute merchandise to consumers.

FDM 361. Merchandise Planning and Control. 3 Hr. PR: FDM 360. Addresses inventory performance and fiscal aspects of merchandise planning, purchasing, and pricing. Merchandising mathematical formulas are practiced.

FDM 410. Portfolio Presentation. 2 Hr. PR: FDM 360 and CS 101 and senior standing in FDM. Digital presentation and refinement of design and merchandising portfolio, and preparation for entry into the FDM industry.

FDM 420. Merchandise Buying and Management 2. 3 Hr. PR: FDM 320 or consent and senior standing. Study of merchandising activities performed on the retail level including planning sales and assortments, selecting merchandise for resale, controlling inventories, and determining profit. Basic mathematical formulas involved in merchandising are practiced.

FDM 424. Functional Apparel. 3 Hr. PR: ENGL 101 and ENGL 102 and FDM 220 and FDM 230. Physical, sociological, and psychological clothing needs of individuals with functional needs. Historical developments and research needs explored. Students conduct a service-learning project.

FDM 430. Fashion Design Portfolio. 3 Hr. PR: FDM 330 and FDM 350. Techniques of portfolio presentation from introductory page through development of lines that focus on target consumer. Includes development of concept plates, illustrations, flats, and presentation plates.

FDM 433. Apparel Design and Illustration. 3 Hr. PR: FDM 230 and FDM 231 or Consent. Techniques of drawing fashion models and various media for apparel design presentation. Sources of design inspiration examined for developing original apparel designs. (May be repeated for a maximum of 6 hr. credit.)

FDM 470. Global Issues and Fashion. 3 Hr. PR: FDM 361 or consent. Examines globalization, fashion business, and consumerism. Sourcing, sustainability, international trade, and social justice issues are addressed.

FDM 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practices as a tutor or assistant.

FDM 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Pre-arranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FDM 492. Functional Apparel. 3 Hr. PR: ENGL 101 and ENGL 102 and FDM 220 and FDM 230. Physical, sociological, and psychological clothing needs of individuals with functional needs. Historical developments and research needs explored. Students conduct a service-learning project.

FDM 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FDM 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

FDM 496. Senior Thesis. 1-3 Hr. PR: Consent.

FDM 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

Food Science and Technology (FDST)
FDST 200. Food Science and Technology. 3 Hr. Up-to-date basics of food science and technology, including: food industry outlook, degrees and careers, food chemistry, food processing and engineering, food microbiology and food safety, food biotechnology, and sensory evaluation of foods.
FDST 308. Food Plant Sanitation. 3 Hr. PR: CHEM 111 or CHEM 115. Students will learn basic concepts of food processing and the laws and regulations governing it as well as good manufacturing practices involved in order to ensure the quality of food that is sold to the public.

FDST 365. Muscle Foods Technology. 3 Hr. Emphasis on muscle of slaughtering, cutting, breaking, manufacturing, structure and composition, conversion of muscle to muscle food, processing food animals (cattle, sheep, hogs, poultry, and fish) and products to ensure quality and safety from processing through storage, fresh and value-added processing, and nutritional value.

FDST 367. Muscle Foods Technology Laboratory. 1 Hr. Coreq: FDST 365. Laboratory training in the porocessing of carcasses derived from food animals including red meat, poultry, and fish species. Microbiology, cookery, and storage of fresh products. Basic techniques in processed muscle foods production.

FDST 434. Food Quality Evaluation. 3 Hr. PR: FDST 200 and (CHEM 111 or CHEM 115). Methods used for the qualitative and quantitative analysis of the chemical and sensory quality of foods will be described.

FDST 436. Food Quality Evaluation Lab. 1 Hr. Coreq: FDST 434. Laboratory training in methods used for the qualitative and quantitative analysis of the chemical and sensory quality of foods. This laboratory will provide a hands-on experience for students who take or have taken FDST 434.

FDST 445. Food Microbiology. 3 Hr. PR: ENVM 341. The relationships of microorganisms to food-borne illness and intoxications, microbial food safety and food quality, food spoilage, food preservation and bio-processing. The emerging food preservation technologies and predictive microbiology will be introduced.

FDST 449. Food Microbiology Lab. 1 Hr. PR: FDST 445. Laboratory training in methods used in microbiological examination of foods. This laboratory will provide a hands-on experience for students who take or have taken FDST 445.

FDST 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

FDST 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FDST 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FDST 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

FDST 496. Senior Thesis. 1-3 Hr. PR: Consent.

FDST 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent study, reading or research.

Forest Hydrology (FHYD)

FHYD 444. Watershed Management. 3 Hr. PR: FMAN 212 and FMAN 311. (Primarily for forest management majors.) Influences of silvicultural practices and forest management activities on the hydrology of forested catchments.

FHYD 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

FHYD 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FHYD 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FHYD 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

FHYD 496. Senior Thesis. 1-3 Hr. PR: Consent.

FHYD 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent study, reading or research.

Film (FILM)

FILM 101. The Art of Film 1. 3 Hr. A survey of the history of cinema from its earliest forms and experimentation through the end of the monopoly of the “studio system” (c. 1960). Weekly film screenings.

FILM 102. The Art of Film 2. 3 Hr. A survey of the history of cinema from the rise of the auteur (c. 1960) to present trends, specifically examining American cultural dominance. Weekly film screenings.

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Finance (FIN)
FIN 305. Intermediate Finance. 3 Hr. PR: BCOR 340. Continuation of BCOR 340; use of computers to help solve extended problems and/or short cases.

FIN 310. Investments. 3 Hr. PR: BCOR 340. Investment analysis and management for the individual and the financial institution.

FIN 330. Financial Institutions. 3 Hr. PR or CONC: BCOR 340 and Consent. The role of financial institutions in our nation’s financial markets and the economy. Analysis of interest rate, financial markets and federal revenue policy.

FIN 340. Real Estate. 3 Hr. Principles and practices of real estate business.

FIN 350. General Insurance. 3 Hr. PR: (ACCT 202 and ECON 202 and ECON 225 and ENGL 102) and (MATH 150 or MATH 155.) Theory of risk and its application to insurance; principles underlying insurance-life, property, casualty, fire, and surety.

FIN 410. Security Analysis and Portfolio Management. 3 Hr. PR: FIN 310. The systematic selection, assessment, and ranking of corporate securities in a portfolio framework through a synthesis of fundamental analysis, technical analysis, and the random walk perspective.

FIN 411. Derivatives. 3 Hr. PR: FIN 310. Examines derivatives markets with an emphasis on options. Introduces the concept of arbitrage and the implications for derivatives equilibrium pricing. Applications of derivatives in financial risk management.

FIN 441. Real Estate Appraising. 3 Hr. PR: FIN 340. The course defines the appraisal problem, plan the approach, acquire, classify, analyze and interpret data into an estimate of value by the use of the cost or replacement approach, income approach and marketing approach.

FIN 442. Real Estate Finance. 3 Hr. PR: (BCOR 340 or FIN 601) and FIN 340. Designed to show how financing, the tax system, and supply and demand interact to create values which, when coupled with investment decision, leads to choosing an investment strategy in real estate.

FIN 443. Real Estate Investment and Land Development. 3 Hr. PR: FIN 340. Designed to give an overall view of property development, including market analysis, financial analysis, planning and design of new developments, construction methods, and the merchandising and/or management of the completed project.

FIN 451. Working Capital Management. 3 Hr. PR: BCOR 340 and ECON 225 and PR or CONC: FIN 305. Management of current assets and liabilities. Topics include the management of cash, marketable securities, accounts receivable, inventories, trade accounts payable, and short-term bank borrowings. Decision models are used extensively.

FIN 452. Employee Benefit Plans. 3 Hr. PR: FIN 350. Use, design and regulation of group life insurance, health care and pensions, including their federal tax consequences. Study of the available contracts in each area and financing alternatives and practices.

FIN 453. Life Insurance and Estate Planning. 3 Hr. PR: FIN 350. Principles of life and health insurance protection; application of life insurance to individual, family, business, and societal needs; study of trusts, wills and estates, integrating of income programming into estate management.

FIN 454. Property and Liability Insurance. 3 Hr. PR: FIN 350. Study of the use and production of property and liability insurance, including evaluation of insurance contracts and current insurance practices; legal and regulatory environment affecting use and production of insurance.

FIN 455. Risk Management. 3 Hr. PR: FIN 350. Transferable risks with which the entrepreneur must deal. Emphasis on the process by which decisions are made for handling these risks, including an examination of contributions and limitations of insurance system.

FIN 456. Social Insurance. 3 Hr. PR: FIN 350. Our social and political efforts to provide economic security for the general public. An examination of the parallel developments of private insurance.

FIN 460. Bank Management. 3 Hr. PR: BCOR 340 and PR or CONC: FIN 305. (May not be taken for both undergraduate and graduate credit.) Management of bank funds. Principles of organization lending and investment. Policy relationships to bank productivity, organization, and profitability; preparation of financial reports; management of a simulated bank in a changing environment.

FIN 461. Advanced Bank Management. 3 Hr. PR: FIN 460. An advanced course in commercial banking involving problems of management of the money position, loan and investment portfolio and capital adequacy. The student simulates actual bank operation, conducts case studies, and analyzes bank performance.

FIN 470. Advanced Finance. 3 Hr. PR: FIN 305, and PR or CONC: BCOR 460. Integrative course in finance to be taken during the final semester before graduation.

FIN 480. International Finance. 3 Hr. PR: BCOR 340. Course extends standard corporate finance concepts to the global arena, helping to understand the additional opportunities and challenges faced by a global firm.
FIN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

FIN 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FIN 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FIN 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

FIN 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

FIN 496. Senior Thesis. 1-3 Hr. PR: Consent.

FIN 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Forensic and Investigative Science (FIS)**

FIS 194. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FIS 201. Introduction to Forensic Identification. 3 Hr. A survey course forensic science including overview of the history and components of fingerprint classification systems crime scene analysis, and death investigation. This course is open to non-majors.

FIS 286. Forensic ID Internship. 6-9 Hr. Students must pre-register and have consent of department field work coordinator. A full-time supervised field experience providing a setting for students to increase their professional effectiveness as a forensic identification examiner while dealing with relevant issues and concerns while functioning within an ethical framework.

FIS 301. Science/Technology of Fingerprint Identification 1- 3 Hr. Introduces basics of fingerprint analysis and comparisons. Focuses on basic patterns used in fingerprint comparisons and classifications of each fingerprint type, including Henry, National Crime Information Center, Integrated Automated Fingerprint Identification System pattern classification codes.

FIS 302. Crime Scene Investigation 1. 3 Hr. An introductory course providing basic competencies required for crime scene examiners. The course will focus on developing a consistent approach to the processing of a crime scene with a major focus on recovery/processing evidence.

FIS 304. Latent Fingerprint. 3 Hr. PR: FIS 301. A course designed to teach identification techniques used in fingerprint development for processing crime scenes and evidence for latent prints, focusing on latent print development and preservation, including crime scene processing and blood prints.

FIS 314. Introduction to Microscopy. 3 Hr. PR: CHEM 116 and PHYS 102 or PHYS 112. Laboratory-based introduction to theory and practice of light microscopy, polarizing light microscopy, imaging, particle manipulation, comparison microscopy, and simple microscopy. Open to non-FIDP majors and pre-admits on space available basis. (3 hr. lab.)

FIS 335. Forensic Photography. 3 Hr. Students focus on the fundamentals of photography, how to handle a camera, and expose film correctly. Include unique forensic environments encountered in forensic work includes fingerprints, crime scenes, and disaster scenes.

FIS 386. Forensic Identification Internship. 6-9 Hr. PR: FIS 201 and FIS 301 and FIS 302 and FIS 304 and must preregister and have consent of department fieldwork coordinator. A full-time supervised field experience providing a setting for students to increase their professional effectiveness as a forensic identification examiner while dealing with relevant issues and concerns while functioning within an ethical framework.

FIS 401. Professional Forensic Communication. 3 Hr. PR: ENGL 103 or (ENGL 101 and ENGL 102) and FIS 201. Familiarizes students with forensic literature, literature searching techniques, bibliographic software; and provides students with the writing and presentation skills essential to forensic professionals.

FIS 402. Crime Scene Investigation 2. 3 Hr. PR: FIS 302. An extension of FIS 302. This course will outline procedures for collection of biological and trace evidence using scientific and practical methods of securing, collecting, analyzing this evidence, in accordance with known standards.

FIS 404. Law and Evidence. 3 Hr. This course presents a comprehensive review of criminal law relating to evidence in court cases and the student’s ability to relate legal precedents to procedures in collecting, processing, and securing evidence used in criminal cases.
FIS 406. Court Testimony. 3 Hr. A skills intensive course that combines in-class instruction with practical experience in the area of court testimony, legal writing presentation, and creation and presentation of exhibits in an actual court setting.

FIS 409. Blood Stain Pattern Analysis. 3 Hr. Violent crimes frequently produce evidence such as bloodstains. Scientific analysis of blood patterns at crime scene investigations and their applications in solving crimes.

FIS 410. Forensic Capstone. 3 Hr. An inquiry based experience facilitating the transition from student to professional. Students will review and integrate all aspects of forensic science including professional ethics and will take written and proficiency tests modeled on professional certifications.

FIS 435. Advanced Forensic Photography. 3 Hr. A more in-depth photography course for students who wish to pursue forensic photography as a possible employment option upon graduation.

FIS 480. Forensic Quality Assurance. 2 Hr. Quality assurance in a laboratory setting to include quality control assurance, and management; and application of statistics. ASCLD-LAB and ISO accreditation and professional certification procedures.

FIS 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FIS 493A. Special Topics. I, II, S. Variable 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled topics.

FIS 493B. Special Topics. I, II, S. Variable 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled topics.

FIS 493C-Z. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FIS 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

FIS 498 A-Z. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Foreign Lit in Translation (FLIT)
FLIT 113. Introduction to French Literature. 3 Hr. Major writers and representative movements in French literature from its beginning to the present.

FLIT 114. Introduction to German Literature. 3 Hr. Survey of German literature with selected readings of prose, poetry, and drama from the Enlightenment to the present.

FLIT 115. Introduction to Spanish Literature. 3 Hr. Reading and discussion of representative Spanish novels, plays, and epic poetry from the Middle Ages to the twentieth century. Special emphasis on Don Quixote, its roots and its place in the development of Western culture.

FLIT 116. Introduction to Latin American Literature. 3 Hr. Reading and discussion of representative works of twentieth century Latin American writers.

FLIT 117. Introduction to Russian Literature. 3 Hr. Major writers and representative movements in Russian literature from its beginning to the present.

FLIT 118. Introduction to Italian Literature. 3 Hr. Italian literary masterpieces will be examined in historical perspective and in relation to the European mainstream.

FLIT 125. Spanish Civilization and Literature. 3 Hr. This course provides students with an understanding of and appreciation for Spanish literature as it relates to the social, historical and cultural developments within Spain from the sixteenth century to today.

FLIT 205. Greek Literature in Translation 1. 3 Hr.

FLIT 206. Greek Literature in Translation 2. 3 Hr.

FLIT 211. Italian Literature in Translation 1. 3 Hr. Selected Italian works from the twelfth century to the end of the eighteenth century. Readings and discussion in English.

FLIT 212. Italian Literature in Translation 2. 3 Hr. Selected Italian work from the nineteenth and the twentieth centuries. Readings and discussion in English.
FLIT 214. Italian-American Experience. 3 Hr. This course will investigate literary and historical perspectives on the experience of Italians in the United States and their contribution to U.S. culture. The approach will be multidisciplinary. This class will be taught in English.


FLIT 220. Chinese Civilization and Culture. 3 Hr. This is a survey course taught in English that introduces Chinese institutions, language, philosophy, religion, art, literature, family and marriage, and Chinese social etiquette.

FLIT 221. Chinese Literature in Translation 1. 3 Hr. Readings in the literature of China from its beginnings through the end of the imperial era in 1911; attention to major writers and genres; focus on literary history, readings and discussion in English.

FLIT 222. Japanese Literature in Translation. 3 Hr. Survey of selected works of Japanese literature from ancient period to the mid-nineteenth century and an introduction to a few works of the modern period.

FLIT 223. Chinese Literature in Translation 2. 3 Hr. Selected Chinese literary works since 1911; attention to major writers and genres; readings and discussion in English.

FLIT 225. Latin Literature in Translation 1. 3 Hr.

FLIT 226. Latin Literature in Translation 2. 3 Hr.

FLIT 231. German Literature in Translation 1. 3 Hr. Selected German works from 800 A.D. to the period of Naturalism. Readings and discussion in English.

FLIT 232. German Literature in Translation 2. 3 Hr. Selected German works from the period of Naturalism to the present. Readings and discussion in English.

FLIT 233. German Literature Since World War II. 3 Hr. Selected German literature from 1945 to present. Readings and discussion in English.

FLIT 241. Spanish Literature in Translation 1. 3 Hr. Selected Spanish works from the twelfth century to the end of the eighteenth century. Readings and discussion in English.

FLIT 242. Spanish Literature in Translation 2. 3 Hr. Selected Spanish works from the nineteenth and the twentieth centuries. Readings and discussion in English.

FLIT 243. Women Writers of Spain. 3 Hr. Major women writers of Spain from the earliest extant manuscripts to the present; focus on 20th century works. Spanish majors will read selections in the original.

FLIT 251. Spanish American Literature in Translation 1. 3 Hr. Selected Spanish American works from the sixteenth century to the end of the nineteenth century. Readings and discussion in English.

FLIT 252. Spanish American Literature in Translation 2. 3 Hr. Selected Spanish American works from the nineteenth and the twentieth centuries. Readings and discussion in English.

FLIT 261. French Literature in Translation 1. 3 Hr. Selected French works from the Middle Ages to the end of the eighteenth century. Readings and discussion in English.

FLIT 262. French Literature in Translation 2. 3 Hr. Selected French works from the beginning of the nineteenth century to the present. Readings and discussion in English.

FLIT 263. French Women Writers. 3 Hr. Selected works of French women writers. (3 hr. lec.)

FLIT 266. Francophone Literature in Translation. 3 Hr. Works by French-speaking authors from Africa and the Caribbean. French majors will read selections in the original.

FLIT 271. Brazilian Literature in Translation. 3 Hr. Survey of Brazilian literary masterworks in English translation concentrating heavily on prose forms (novel, novelette, short story, play) dating from the mid-nineteenth century.

FLIT 272. Russian Fairy Tales. 3 Hr. Introduces a wide selection of Russian fairy tales and examines the aesthetic, social, and psychological values that they reflect; general introduction to the study of folklore with a broad spectrum of approaches (psychoanalysis, structuralism, feminism.

FLIT 273. Russian Literature in Translation 1. 3 Hr. Major works of Russian authors from the beginning to 1880, including those of Pushkin, Lermontov, Gogol, Turgeniev, Dostoevsky, and Tolstoy. Russian major will read selections in the original.

FLIT 274. Russian Literature in Translation 2. 3 Hr. Continuation of FLIT 188. Major literature of Russia/Soviet Union from 1880 to the present. Russian majors will read selections in the original.
FLIT 275. SciFi: East/West. 3 Hr. Comparison of science fiction texts, and TV from Eastern and Central Europe and the US and UK, analyzing works that posit “fantastic” spatial, temporal, social, and biological explorations beyond those currently verified by science.

FLIT 276. Vampire: Blood and Revolution. 3 Hr. This course examines the phenomenon of vampirism in verbal and visual culture from different periods in various cultures from a variety of critical perspectives and contextualizes the works in the cultures that produced them.

FLIT 293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FLIT 321. Chinese Cinema. 3 Hr. A study of representative Chinese films from the early twentieth century to the present; films subtitled, readings and discussion in English.

FLIT 371. Holocaust: East Europe Film/Literature. 3 Hr. PR: (ENGL 101 and ENGL 102) or ENGL 103. Extending beyond familiar representations of the Holocaust in the context of several nations of Eastern Europe.

FLIT 372. Contemporary Polish Cinema. 3 Hr. This course studies contemporary Polish cinema from World War II to the present, examining films in both their aesthetic and socio-historical contexts as part of European and Polish national cinematic traditions.

FLIT 373. Polish Cinema-Kieslowski. 3 Hr. Studies the cinematic career of one of Poland’s most important directors of the past fifty years; designed to allow both cinema devotees and untrained filmgoers to appreciate Kieslowski’s oeuvre.

FLIT 433. Weimar Cinema. 3 Hr. A study of representative German films from the years 1919-1932. (May be crosslisted with GER 433.)

FLIT 434. Fascism and Film. 3 Hr. A study of representative German films from the years 1919-1945. (May be crosslisted with GER 434.)

FLIT 435. The New German Cinema. 3 Hr. A study of representative German films from 1962 to the present. (May be crosslisted with GER 435.)

FLIT 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

FLIT 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FLIT 493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FLIT 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

FLIT 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

FLIT 496. Senior Thesis. 1-3 Hr. PR: Consent.

FLIT 498 A-Z. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Forest Management (FMAN)
FMAN 212. Forest Ecology. 3 Hr. PR: FOR 205. Forest and environment factors; site and type characteristics.

FMAN 222. Forest Mensuration. 4 Hr. PR: MATH 155 and STAT 211. Estimating volume and growth of trees and forest stands with emphasis on the mathematical and statistical techniques involved. Laboratories include practical field experience.

FMAN 251. Forest Fire Protection. 2 Hr. Prevention, detection, and control of wildfires. Forest fuels, fire weather, and wildfire behavior. Use of fire for forest management purposes.

FMAN 311. Silvicultural Systems. 4 Hr. PR: FOR 205 and ((FMAN 212 and FMAN 222) or WMAN 313). The theory and practice of controlling forest stand establishment, composition, structure, and growth. Systems include: reproduction methods, release operations, and intermediate treatments. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

FMAN 315. Survey of Arboriculture. 1 Hr. PR: HORT 260 or FOR 205. A self-study seminar that surveys the principles and practices involved in the field of arboriculture with major emphasis on the urban landscape.
FMAN 316. Forest Genetics and Tree Improvement. 3 Hr. Forest genetic principles and their application to forest tree improvement, including crossing methods, selection systems and other techniques.

FMAN 322. Advanced Forest Measurements. 3 Hr. PR: FMAN 222 or equivalent. Measurement and computer simulation of forest growth; principles of growth and yield; statistical methods applied to forest measurement problems.

FMAN 330. Principles of Forestry Economics. 4 Hr. PR: (ECON 201 or ARE 150) and ECON 202. Production, distribution and use of forest goods and services. Emphasis on methods and problem solving techniques in the economic aspects of forestry.

FMAN 400. Forest Resources Management Field Practice. 6 Hr. PR: CE 200 and FMAN 322. (Course will be taught during five consecutive six-day weeks.) Application and study of forest management practices with emphasis on field problems, including a one-week trip to observe forestry outside the Appalachian hardwood region.

FMAN 413. Regional Silviculture. 2 Hr. PR: Forestry major or Consent, FMAN 212; PR or CONC: FMAN 311. Major forest types of the United States: their composition, management, problems, and silvicultural treatment.


FMAN 434. Forest Resources Management Planning. 3 Hr. PR: FMAN 322 and FMAN 400 and FMAN 311 and PR or CONC: (ENTO 470 or PPTH 470) and FMAN 330. Integrated planning of long-term management of forest resources. Development of a management plan for an actual forest tract. Emphasis on biological, social, economic and ethical considerations in decision-making.

FMAN 440. Forestry Consulting. 3 Hr. PR: FMAN 311 and FMAN 330 or Consent. The application of forest management principals and business concepts to the consulting forestry profession. Topics include: natural resource inventories, timberland appraisals, timber sale administration, and forest management planning.

FMAN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

FMAN 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FMAN 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FMAN 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

FMAN 496. Senior Thesis. 1-3 Hr. PR: Consent.

FMAN 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent study, reading or research.

Forestry (FOR)
FOR 101. Careers in Natural Resources Management. 1 Hr. (Required only for students who rank as Freshman in the Division of Forestry.) An introduction to professional activities in forest resources management, recreation and parks management, wildlife and fisheries management, and wood science and utilization. Survey of major issues in natural resources management and conservation.

FOR 140. West Virginia's Natural Resources. 3 Hr. Survey of policies and practices in development and use of soil, water, forest, wildlife, mineral, and human resources in West Virginia.

FOR 203. Careers in Natural Resources 2. 1 Hr. Planning a career in forestry and natural resources professions. Developing a career strategy, resume building, and conducting a successful job search.

FOR 205. Dendrology. 3 Hr. Classification and silvical characteristics of North American forest trees.

FOR 210. Forest Meterology. 3 Hr. PR: MATH 126 or MATH 128 or Consent. Introduction to meteorology and climatology with emphasis on forest/atmosphere interactions.

FOR 240. Introduction to Computing in Natural Resources. 3 Hr. Introduction to computer applications in natural resource management. Emphasis on MS Excel statistical analysis tools, MS Access, Visual Basic Programming, hand held PC's and application examples.

FOR 310. Elements of Silviculture. 4 Hr. PR: FOR 205 and WMAN 234. Basics of mensuration, site quality, tree and stand growth, forest structure, and development, intermediate treatments, natural disturbances and regeneration ecology, silviculture systems (2 hr. lec., 4 hr. lab.)

FOR 421. Renewable Resources Policy and Governance. 3 Hr. PR: Consent. Forest, wildlife, fisheries, and recreation resource policies of world, with an emphasis on the U.S.: important federal and state laws; governance of public and private lands and renewable natural resources. (Crosslisted with WMAN 421)

FOR 424. Vegetation of West Virginia. 3 Hr. PR: FOR 205. Basics of plant taxonomy and community ecology use of technical field keys, study of selected plant families, field trips to unusual and/or important plant communities and forest types in West Virginia (summer, off campus).

FOR 425. Global Forest Resources. 3 Hr. Significance of renewable natural resources on a global scale and the ecological, economic, and social contexts in which they are managed. Emphasis is on world forest resources, including timber, wildlife, and social uses.

FOR 426. Global Forest Resources Practicum. 3 Hr. PR: Consent. An intensive field practicum abroad provides students with experiential learning opportunities of global approaches to forest management, and imparts the historical context necessary for an appreciation of cultural diversity.

FOR 438. Human Dimensions Natural Resource Management. 3 Hr. This class is designed to provide junior and senior level forestry and natural resource management majors with a repertoire of social and communication knowledge and skills such as public facilitation, public participation, social impact assessment, conflict management, and collaborative planning techniques.

FOR 470 A-Z. Problems in Forestry, Wood Science, Wildlife, or Recreation. 1-4 Hr. PR: Forestry senior or consent.

FOR 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

FOR 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FOR 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

FOR 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FOR 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

FOR 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

FOR 496. Senior Thesis. 1-3 Hr. PR: Consent.

FOR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

French (FRCH)
FRCH 100. Intensive Elementary French. 6 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Equivalent of FRCH 101 and 102 combined into one course.

FRCH 101. Elementary French 1. 3 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context. (Course presumes no prior knowledge of the language.)

FRCH 102. Elementary French 2. 3 Hr. PR: FRCH 101 or a score of F2 on the placement test. Continuation of French 101.

FRCH 200. Intensive Intermediate French. 6 Hr. PR: FRCH 102 or FRCH 100 or score of F3 on the placement test. FRCH 203 and FRCH 204 combined into one course. Capstone course for FRCH 101 through FRCH 204. Sequence and foundation for advanced French study. Emphasis on written and oral communication within an authentic cultural context.

FRCH 203. Intermediate French 1. 3 Hr. PR: FRCH 102 or score of F3 on placement test.

FRCH 204. Intermediate French 2. 3 Hr. PR: FRCH 203 or score of F4 on placement test. This is the last course in the basic French curriculum sequence and serves as the foundation for advanced French study. Emphasis on written and oral communication within an authentic cultural context.
FRCH 274. Virtual Vendee. 3 Hr. PR: FRCH 203. Taught on-line in conjunction with WVU-Vendee. Can count as FRCH 204 or as elective for French major/minor. French culture through vodcasts, readings, and writings. Taught in French.

FRCH 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FRCH 301. Language Through Civilization. 3 Hr. PR: FRCH 204. Development of oral and written communicative skills in the context of the origins, development, and contributions of French and Francophone civilizations.

FRCH 302. Language Through Culture. 3 Hr. PR: FRCH 204. Development of oral and written communicative skills in the context of contemporary values, institutions, and contributions of the French and Francophone world.

FRCH 303. Structure and Communication. 3 Hr. PR: FRCH 204. Development of communicative competencies with emphasis on French language structures, speaking, and writing within an authentic cultural context.

FRCH 304. Advanced Readings. 3 Hr. PR: FRCH 204 Development of communicative competencies with emphasis on authentic texts and documents from the French-speaking world.

FRCH 331. Survey of Literature 1. 3 Hr. PR: Six hours of upper-division French. A cultural and historical survey from its beginnings to the end of the eighteenth century.

FRCH 332. Survey of Literature 2. 3 Hr. PR: Six hours of upper-division French. A cultural and historical survey from the beginning of the nineteenth century to the present.

FRCH 401. Oral Expression. 3 Hr. PR: Six hours of upper-division French. Intensive practice of oral skills with emphasis on discussion, debate, recitation, reading aloud, etc.

FRCH 402. Phonetics and Pronunciation. II. 3 Hr. PR: 12 Hr. of French or equiv.

FRCH 431. French Civilization. 3 Hr. PR: 6 hours of upper-division French. A survey of major themes, movements, ideas, and figures in the development of French civilization from prehistory to the twentieth century.

FRCH 432. Contemporary Culture. 3 Hr. PR: 12 Hours of French.

FRCH 450. French Cinema. 3 Hr. PR: 6 hr. of upper-division French. Film literacy, vocabulary, and technique in the context of French cinema. Emphasis may vary among origins, poetic realism, surrealism, film noir, nouvelle vague, current movements. May be repeated with permission. Taught in French.

FRCH 461. Commercial French 1. 3 Hr. PR: 6 hr. of upper-division French. Development of advanced speaking, reading and writing skills appropriate for business contexts within the French-speaking world.


FRCH 470. Culture En Direct. 3 Hr. PR: 6 hr. of upper-division French. Study of French civilization through vists of cultural monuments and sites, and interaction with native informants in France. Themes covered include national and historical identity of France. Course offered only through study abroad.

FRCH 471. Communication En Direct. 3 Hr. PR: 6 Hr. of upper- division French. Development of written and oral communication skills through a series of classroom activities and/or outside of class assignments. Course work involves interaction with native informants. Course offered only through study abroad.

FRCH 472. WVU-Vendee Pre-Departure. 1 Hr. PR: Consent. Preparation for WVU-Vendee program. Teaching of cultural and technological skills necessary to participate in the program. Taught in French. (Graded pass/fail.)

FRCH 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

FRCH 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

FRCH 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

FRCH 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

FRCH 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

FRCH 495. Independent Study. 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.
FRCH 496. Senior Thesis. 1-3 Hr. PR: Consent.

FRCH 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Genetics (GEN)

GEN 101. Beginner’s Guide to Genetics. 3 Hr. General introduction to concepts in genetics for nonmajors, examining the role of molecules, genes and chromosomes on inheritance, aging, disease, and gender. Case studies show application to agriculture, ecological/environmental issues, medicine, and forensics.

GEN 120. Genetics and Society. 3 Hr. Origin of life, selection, mutation, eugenics, genetic engineering, genetics and evolution, genetics and medicine, genetics and politics, decision making, social, and ethical issues in human genetics. For students interested in heredity and heritage.

GEN 371. Principles of Genetics. 4 Hr. PR: 8 hr. biological science. The fundamentals of inheritance.

GEN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

GEN 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

GEN 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

GEN 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

GEN 496. Senior Thesis. 1-3 Hr. PR: Consent.

GEN 497. Research. 1-6 Hr. Independent research projects.

GEN 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Geography (GEOG)

GEOG 102. World Regions. 3 Hr. Comparison and relationships of world regions. Geographical perspectives of contemporary global problems. Developing regions contrasted with modernized regions and the consequences of their interactions.

GEOG 106. Physical Geography Laboratory. 1 Hr. PR or CONC: GEOG 107.

GEOG 107. Physical Geography. 3 Hr. Introduction to global environmental systems operating on the Earth's surface, emphasizing weather and climate, soils, natural vegetation, and geomorphology, and examination of human interaction with these natural processes.

GEOG 108. Human Geography. 3 Hr. Introduction to geographical dimension in human behavior and the human-altered landscape including social, demographic, economic, and political attributes of societies.

GEOG 110. Environmental Geoscience. 3 Hr. Physical aspects of the earth with emphasis on natural resources, environmental degradation and hazards. Registration in GEOG 111 meets requirements for a 4 hr. credit in laboratory science. Also listed as GEOL 110. Students may not receive credit for GEOG 110 and GEOL 101.

GEOG 111. Environmental Geoscience Laboratory. 1 Hr. PR or CONC: GEOG 110. Also listed as GEOL 110. Students may not receive credit for GEOG 111 and GEOL 102.

GEOG 150. Digital Earth. 3 Hr. Recent advances in technology and data availability have increased our knowledge about the world. This class surveys key concepts of geospatial technologies (GIS, remote sensing, spatial analysis) in the context of social and environmental change.

GEOG 199. Orientation to Geography. 1 Hr. For majors, pre-majors, and potential majors; discussion of the discipline, curriculum requirements, areas of specialization, internships and career opportunities. (1 hr. lec.) (Pass/fail only.)

GEOG 201. Map and Image Interpretation. 3 Hr. PR: (GEOG 101 and GEOG 102) or (GEOG 110 and GEOG 111) or (GEOG 110 and GEOG 111). Analysis of physical and cultural landscapes using maps and remote sensing images. (1 hr. lec. 4 hr. lab.)

GEOG 205. Natural Resources. 3 Hr. Introduces the concept of natural resources and surveys such topics as land, soil, rangeland, forests, water, atmosphere, minerals, and energy. Emphasis is on the United States within the context of the global environment.

GEOG 207. Climate and Environment. 3 Hr. Examination of atmospheric processes and the impact of human activity on climate.
GEOG 209. Economic Geography. 3 Hr. PR: GEOG 108. Examination of the world economy particularly the spatial patterns of agriculture, manufacturing and services.

GEOG 210. Urban Geography. 3 Hr. PR: GEOG 101 or GEOG 102 or GEOG 108. Introduction to the geography of the city incorporating consideration of urban systems and city-region linkages, patterns and processes of urban land use, the social geography of the city, and contemporary urban problems.

GEOG 215. Population Geography. 3 Hr. PR: GEOG 107. Study of the geographic distribution of population and population characteristics including density, age, fertility, mortality, and settlement patterns. Problems of migration and population/resource issues are also covered, with an emphasis on developing countries.

GEOG 240. United States and Canada. 3 Hr. Regional study of the United States and Canada emphasizing such geographic features as climate, natural vegetation, topography, natural resources, population distribution and trends, agriculture, manufacturing, transportation systems, and regional culture.

GEOG 241. Geography of Europe. 3 Hr. PR: GEOG 108. Study of contemporary human and physical geography of Europe. Insight to political, economic and social dimensions of transition in this region.

GEOG 243. Geography of Africa. 3 Hr. Systematic and regional characteristics and geographic problems of political, social, and economic development.

GEOG 244. Geography of the Middle East. 3 Hr. This course is designed to provide students with a detailed understanding and ability to analyze the geography of the Middle East (including North Africa). Special topics on current geographical issues will also be covered.

GEOG 249. Geography of West Virginia and Appalachia. 3 Hr. PR: GEOG 108 or consent. Geographic analysis of the changing socio-economic activities and physical environment in West Virginia and Appalachia. Emphasis on the historical development of the state and region and contemporary spatial and social inequalities.

GEOG 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

GEOG 300. Geographical Data Analysis. 3 Hr. Quantitative techniques for collection, classification, and spatial analysis of geographical data with emphasis on map analysis and application of spatial statistics.

GEOG 302. Political Geography. 3 Hr. Examines the interrelationship between politics and the environment, human territoriality, the political organization of space, geopolitical aspects of the nation-state and international problems.

GEOG 305. Historical Geography of the United States Environment. 3 Hr. Surveys natural resource exploitation and environmental alteration in the United States from 1600 to the present with consideration of changing natural resources, conservation, and environmental preceptions and policies.

GEOG 307. Biogeography: Theory and Method. 3 Hr. PR: GEOG 107. An Introduction to the field of biogeography including the study of the distribution and diversity of life, how species migrate, the importance of natural and human disturbances in ecosystems.

GEOG 309. Industrial Geography. 3 Hr. PR: GEOG 209 or Consent. Introduction to theories and concepts of industrial geography; emphasis on the interdependence of the world economy and spatial patterns of industrial restructuring; case studies from various industrial sectors and regions.

GEOG 310. Global Issues. 3 Hr. PR: GEOG 102 or GEOG 108. Themes of spatial equity and justice in an increasingly interdependent world system. Contemporary issues concerning location, place, movement, and region.

GEOG 321. Geomorphology. 3 Hr. PR: GEOL 101 and GEOL 102. An examination of earth-surface processes and landforms, with emphasis on environmental geomorphology, streams, floods, glaciers, and landslides. (Required field trip at student's expense; also listed as GEOL 321.)

GEOG 350. Introduction to Geographic Information Science. 4 Hr. PR: GEOG 150. Geographic information science (GIS) in principle and practice. Spatial data handling in a computer environment; data analysis, production, and information display for planning and decision making. (3 hr. lec., 1 hr. lab.)

GEOG 361. Cartography. 3 Hr. An introduction to mapping from concepts to production, including historical developments, coordinate systems, projections, generalization, symbolization, map design and computer-assisted mapping. (2 hr. lec., 1 hr. lab.)

GEOG 390. Geographical Perspectives on Energy. 3 Hr. PR: Consent. A survey of the distribution of finite, renewable, and continuous energy resources and an investigation of the geographical patterns of energy consumption and energy flows. The policy implications of an unequal distribution of energy are evaluated.

GEOG 407. Environmental Field Geography. 3 Hr. PR: GEOG 107 and GEOG 307. An introduction to field methods used in environmental and physical geography. Course uses a problem-based approach.
GEOG 411. Rural and Regional Development. 3 Hr. PR: GEOG 102 or GEOG 108. An investigation into rural and regional development in developed and underdeveloped regions. The relationship between development theory and policy is explored.

GEOG 412. Geography of Gender. 3 Hr. PR: GEOG 108 or Consent. An exploration of how gender affects spatial patterns and processes. Theoretical and empirical aspects of feminism are analyzed including women and employment, third world feminism, sexuality and space, and gender in academia.

GEOG 415. Environmental Systems in Geography. 3 Hr. PR: GEOG 107, equivalent or consent. A geographic analysis of the earth system emphasizing the interdependence and feedback mechanisms of the hydrologic cycle, ecosystems and climate.

GEOG 425. Urban and Regional Planning. 3 Hr. PR: GEOG 210 or POLS 220 or consent. Explores concepts, techniques, and processes of physical and socioeconomic planning and their application to urban and regional problems.

GEOG 443. African Environment and Development. 3 Hr. Detailed examination of the intersection of environmental and development studies in sub-Saharan Africa with critical assessments of current practice.

GEOG 452. Geographic Information Science: Applications. 3 Hr. PR: GEOG 350. GIS uses, needs, analysis, design, and implementation. Operational institutional and management topics of GIS for planning, locational decision making in business, government, and research contexts. (2 hr. lec., 1 hr. lab.) (Also listed as GEOL 452.)

GEOG 453. Geographic Information Science: Design and Implementation. 3 Hr. PR: GEOG 350 and consent. Geographic database design and implementation using contemporary GIS software.

GEOG 455. Introduction to Remote Sensing. 3 Hr. Theory, technology and applications of photo-interpretation and digital image analysis of aerial photography and multispectral images. (2 hr. lec., 1 hr. lab.) (Also listed as GEOL 455.)

GEOG 462. Digital Cartography. 3 Hr. PR: GEOG 361 or Consent. Computer-assisted mapping emphasizing the appropriate uses of software in thematic and topographic map design, annotation, symbolization, color, design, display and reproduction.

GEOG 466. Field Camp. 3-6 Hr. Observations, data gathering, and other field techniques for understanding physical environment, human geography, and culture; off-campus field experience. (3 hr. lec., 3 hr. field camp.)

GEOG 485. Methods of Geographic Research. 3 Hr. PR: Consent. Geographic analysis as problem-solving activity. Practical experience in field techniques, library research, hypothesis formation and testing, and report preparation and presentation. Students will acquire skills in literary and numerical approaches to geographic data analysis.

GEOG 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

GEOG 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

GEOG 492 A-Z. Directed Study. 1-3 Hr. Directed study, reading, and/or research.

GEOG 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

GEOG 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

GEOG 496. Senior Thesis. 1-3 Hr. PR: Consent.

GEOG 497. Research. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.)

GEOG 498. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study or research.

GEOG 499. Honors Thesis. 3-6 Hr. PR: Departmental consent. Thesis proposal, writing, and defense for students admitted to the Honors program.

Geology (GEOL)

GEOL 101. Planet Earth. 3 Hr. Composition and structure of the Earth and the physical processes that change Earth’s surface. GEOL 102 not required with GEOL 101. (Accompanied by registration in GEOL 102, class meets requirements for 4 hr. credit in a laboratory science in geology.) Students cannot receive credit for GEOL 101 and GEOL 110 or GEOG 110.
GEOL 102. Planet Earth Laboratory. 1 Hr. PR or CONC: GEOL 101. Laboratory study of the Earth using rocks, minerals and maps. 2 hr. lab. (Students cannot receive credit for GEOL 102 and GEOL 111 or GEOG 111.)

GEOL 103. Earth Through Time. 3 Hr. PR: GEOL 101 or GEOL 110 or GEOG 110. Evolution of the Earth and its inhabitants. (Accompanied by registration in GEOL 104, class meets requirements for 4 hr. credit in a laboratory science in geology.)

GEOL 104. Earth Through Time Laboratory. 1 Hr. PR or CONC: GEOL 103. Laboratory study of sedimentary rocks, fossils, and geologic maps and their use in interpreting Earth history. (2 hr. lab.)

GEOL 105. A Study of Dinosaurs. 3 Hr. A beginning course in the study of dinosaurs. Classification, biology and behavior will be studied.

GEOL 110. Environmental Geoscience. 3 Hr. Physical aspects of the Earth with emphasis on natural resources, environmental degradation and hazards. (Accompanied by GEOL 111 meets requirements for a 4 hr. credit in laboratory science.) (Also listed as GEOG 110; students may not receive credit for GEOL 110 and GEOG 110).

GEOL 111. Environmental Geoscience Laboratory. 1 Hr. PR or CONC: GEOL 110. (Also listed as GEOG 111; students may not receive credit for GEOG 111 and GEOL 102).

GEOL 200. Geology for Environmental Scientists. 4 Hr. PR: (GEOL 110 and GEOL 111) or (GEOG 110 and GEOG 111) or (GEOL 101 and GEOL 102 and GEOL 103 and GEOL 104). Fundamentals of mineralogy, sedimentation, stratigraphy, petrology, and structural geology needed by environmental scientists to understand earth materials. (Required field trips partial student expense.) (3 hr. lec., 1 hr. lab.)

GEOL 201. Geologic Interpretation. 3 Hr. PR: (GEOL 101 and GEOL 102) or (GEOL 110 and GEOL 111) or (GEOG 110) Interpretation of geology and earth history from topographic maps, geologic maps and remote sensing. (1 hr. lec., 4 hr. lab.) (Can only be used as a geology B.S. elective when taken before GEOL 341.)

GEOL 203. Physical Oceanography. 3 Hr. (Not open to upper division geology majors.) The geography and geology of ocean basins and margins, the chemical and physical properties of sea water, and the examination of the source and location of resources in the sea.

GEOL 230. Fossils and Evolution. 3 Hr. PR: GEOL 101 or BIOL 101. Evolutionary history of plants, marine invertebrates, fish, amphibians, reptiles, dinosaurs, birds, and mammals; emphasis on unique contribution of fossil record to evolutionary theory. (2 hr. lec., 1 hr. lab.) (Credit cannot be obtained for both GEOL 103 and GEOL 230.)

GEOL 284. Mineralogy. 3 Hr. PR: GEOL 101 and GEOL 102 and PR or CONC: CHEM 111 or CHEM 115. Elements of crystallography and the systematic study of minerals, identification of minerals in hand specimens according to physical properties. (Required weekend field trip covered by the lab fee.)

GEOL 285. Introductory Petrology. 3 Hr. PR: GEOL 284. Introduction to the study of igneous, sedimentary and metamorphic rocks, including mineralogy, processes of formation, tectonic setting, and description and identification of rocks in hand specimens. (Required field trip. Students will be required to pay a portion of the expenses.)

GEOL 311. Stratigraphy and Sedimentation. 3 Hr. PR: GEOL 103 and GEOL 104 and GEOL 285 and GEOL 321. Study of sediments and sedimentary rocks with an emphasis on the analysis of facies. (Required field trips at student's expense.)

GEOL 321. Geomorphology. 3 Hr. PR: (GEOL 101 and GEOL 102) or (GEOL 110 and GEOL 111) or (GEOG 110 and GEOG 111). An examination of earth-surface processes and landforms, with emphasis on environmental geomorphology, streams, floods, glaciers, and landslides. (Required field trip at student's expense; also listed as GEOG 321.)

GEOL 331. Paleontology. 3 Hr. PR: GEOL 103 and GEOL 104 and STAT 211. Uses of paleontologic data in geology; biostratigraphy, paleoecology, evolution, extinction, and biogeography; lab emphasis on identification and utilization of marine invertebrate fossils. (Required weekend field trip at student's expense.)

GEOL 341. Structural Geology. 4 Hr. PR: GEOL 103 and GEOL 104 and GEOL 284 and GEOL 285 and PHYS 101. Introduction to rock deformation processes and the interpretation of geologic structure, with applications to the structure and tectonic evolution of the Appalachian Mountains. (Several one-day field trips required.)

GEOL 342. Structural Geology for Engineers. 3 Hr. PR: GEOL 101 and GEOL 102 and PHYS 111. Introduction to rock deformation processes and the development and interpretation of geologic structures. (Several one-day field trips required.)

GEOL 351. Geomathematics. 3 Hr. PR: GEOL 101 and (MATH 150 or MATH 155). Mathematical methods and applications in geology, geochemistry, geophysics, and environmental science. Review of integral calculus, differential equations, and non-linear systems. Use of computers as geological problem-solving tools.

GEOL 365. Environmental Geology. 3 Hr. PR or CONC: GEOL 321. Principles, practice, and case histories in application of earth science to environmental problems. Includes: water quality; landslides; subsidence; waste disposal; legal aspects; and geological aspects of land-use planning. (Field trips and independent field project required.)
GEOL 400. Environmental Practicum. 4 Hr. PR: GEOL 200. Practical experience in collecting and evaluating data required to address the complex environmental issues facing environmental geoscientists. (Required field trip during spring Break.)

GEOL 401. Physical Geology for Teachers. 3 Hr. PR: High school teaching certificate and consent. (Credit cannot be obtained for both GEOL 401 and GEOL 101.) Composition and structure of earth and the geologic processes which shape its surface.

GEOL 404. Geology Field Camp. S. 6 Hr. PR: GEOL 285 and GEOL 341 and GEOL 311 and consent. Practical experience in detailed geological field procedures and mapping. (Living expense in addition to tuition must be paid at time of registration.)

GEOL 411. Carbonate Sedimentation of Florida. 2 Hr. PR: GEOL 101 and GEOL 102 and Consent. Field trip to the Florida Keys to study origin and development of coral reefs and related carbonate sediments. (Transportation, room and board, boat charter, and other misc. costs at student’s expense.)

GEOL 435. Introductory Paleobotany. 4 Hr. PR: GEOL 103. (Required Saturday field trips at student’s expense.) Resume of development of principal plant groups through the ages, present distribution, mode of occurrence and index species, methods of collection.

GEOL 452. Geographic Information Science: Applications. 3 Hr. PR: GEOG 350. Operational and management issues in planning management analysis, locational decision making, and design implementation of GIS. Lab project emphasizes student’s specialization. 2 hr. lec., 2 hr. lab. (Alternate years; also listed as GEOG 452.)

GEOL 454. Environmental and Exploration of Geophysics 1. 3 Hr. PR: PHYS 102 and (MATH 156 or GEOL 351). Basic theory, computer modeling, and use of gravitational, magnetic, resistivity, and electromagnetic methods in the evaluation of shallow targets of interest to environmental, hydrological, and hazardous waste site investigations.

GEOL 455. Introduction to Remote Sensing. 3 Hr. Theory, technology and applications of photo-interpretation and digital image analysis of aerial photography and multispectral images. (2 hr. lec., 1 hr. lab.) (Also listed as GEOG 455.)

GEOL 462. Introductory Hydrogeology. 3 Hr. PR: GEOL 101 and 102, or GEOL 110 and 111, or GEOG 110 and 111, and MATH 126 and 128, CHEM 110, 111, or 115. Basic principles of hydrogeology, emphasizing geologic occurrence of ground water, vadose (soil) water, wells, springs, ground water interaction with streams, and ground-water chemistry, pollution, and pollution restoration.

GEOL 463. Physical Hydrogeology. 3 Hr. PR: GEOL 101 and MATH 126. Principles of ground-water hydrology, emphasizing the physical occurrence and movement of ground water. Topics include aquifer properties, flow net analysis, and hydraulic aquifer testing.

GEOL 466. Cave and Karst Geology. 3 Hr. PR: GEOL 101 and 102, or GEOL 110 and 111, or GEOG 110 and 111, and CHEM 110,111 or 115. Study of the nature and origins of cave and karst landforms, terrains, geomorphology, hydrogeology, environmental hazards, and petroleum and mineral ore deposits. (Two required field trips.)

GEOL 469. Applied Hydrogeology Seminar. 1 Hr. A review of professional practices and opportunities in hydrogeology. Seminar talks by hydrogeological professionals from WVU, industry, and government agencies. Field trips to examine hydrogeological practices and techniques.

GEOL 470. Mineral Resources. 3 Hr. PR: GEOL 101 and GEOL 284. Description, mode of occurrence, and principles governing the formation of ore deposits.

GEOL 472. Petroleum Geology. 3 Hr. PR: GEOL 341 or GEOL 342. Origin, geologic distribution, methods of exploration and exploitation, uses and future reserves of petroleum and natural gas in the world.

GEOL 473. Petroleum Geology Laboratory. 1 Hr. PR: GEOL 341 or GEOL 342. Well sample description, correlation, and interpretation. Construction and interpretation of subsurface maps used in exploration for hydrocarbons.

GEOL 484. Minerals and the Environment. 3 Hr. PR: GEOL 284 or GEOL 200. Study of the importance of minerals in human health and the environment. Includes examples of environmental problems that are caused by minerals and solutions to environmental problems that involve minerals.

GEOL 488. Environmental Geochemistry. 3 Hr. PR: GEOL 351 and CHEM 116. Basic review of physical and aqueous chemistry, discussion of basic geochemical processes; calcium carbonate chemistry, diagenetic processes, weathering, the silicate and iron system.

GEOL 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

GEOL 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
GEOL 492. Directed Study. 1-6 Hr.

GEOL 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

GEOL 494. Seminar. 1-6 HR. Seminars arranged for advanced graduate students.

GEOL 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

GEOL 496. Senior Thesis. 1-3 Hr. PR: Consent.

GEOL 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**German (GER)**

GER 100. Intensive Elementary German. 6 Hr. The equivalent of GER 101 and GER 102 combined into one course.

GER 101. Elementary German 1. 3 Hr. PR: Score of G1 on placement test or no prior study of the language or departmental consent. Introduction to the sound of language or departmental consent. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within authentic cultural context. (Course presumes no prior knowledge of the language.)

GER 102. Elementary German 2. 3 Hr. PR: GER 101. Continuation of GER 101. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context.

GER 200. Intensive Intermediate German. 6 Hr. PR: GER 102 or 100 or consent. The equivalent of GER 203 and GER 204 combined into one course.

GER 203. Intermediate German 1. 3 Hr. PR: GER 102 or GER 100.

GER 204. Intermediate German 2. 3 Hr. PR: GER 203, or consent. Continuation of GER 203.

GER 222. German Pronunciation. 3 Hr. PR or CONC: GER 203. Designed to strengthen pronunciation through listening and speaking exercises focusing on intonation and diction. Students will improve their ability to hear differences in sounds, understand sound formation, and reproduce sounds in their own speech.

GER 246. Introduction to German Film. 3 Hr. PR or CONC: GER 203. Historical overview of German cinema. Through viewing films (in German) and reading supplementary theoretical texts, students will learn about the history of film-making in Germany during the twentieth and twenty-first centuries.

GER 271. The German Experience 1. 3 Hr. Beginning to intermediate culture course that practices speaking and writing skills while documenting the study abroad experience and increases students’ understanding of the target culture.

GER 272. German Grammar 1. 3 Hr. Review of basic elements of German grammar while studying abroad.

GER 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

GER 301. Advanced German Conversation 1. 3 Hr. PR: GER 204. Content-based conversation course with grammar review.

GER 302. Advanced German Conversation 2. 3 Hr. PR: GER 301. Content-based conversation course with grammar review.

GER 303. Advanced German Composition 1. 3 Hr. PR: GER 302. Content-based composition course with grammar review.

GER 304. Advanced German Composition 2. 3 Hr. PR: GER 303. Content-based composition course with grammar review.

GER 331. Survey of German Literature 1. 3 Hr. PR: GER 204. Readings of representative selections from major periods through Romanticism.

GER 332. Survey of German Literature 2. 3 Hr. PR: GER 204. Readings of representative selections from major periods since Romanticism.

GER 341. German Cultural History. 3 Hr. PR: GER 204. A study of cultural, political, social and economic developments in the German-speaking countries.
GER 361. Commercial German 1. 3 Hr. PR: GER 204 or consent. Practical speaking, writing, and reading experience in German as it relates to business, commerce, and industry.

GER 362. Commercial German 2. 3 Hr. PR: GER 361 or consent. Continuation of GER 361. Preparation for Diplom Wirtschaftsdeutsch.

GER 433. Weimar Cinema. 3 Hr. A study of representative German films from the years 1919-1932. (May be crosslisted with FLIT 433.)

GER 434. Fascism and Film. 3 Hr. A study of representative German films from the years 1919-1945. (May be crosslisted with FLIT 434.)

GER 435. The New German Cinema. 3 Hr. A study of representative German films from 1962 to the present. (May be crosslisted with FLIT 435.)

GER 441. German Culture Since 1945. 3 Hr. PR: Consent. An exploration of postwar German culture with a focus on the contemporary situation since unification.

GER 471. The German Experience 2. 3 Hr. PR: GER 204 or consent. Advanced culture course that practices speaking and writing skills while documenting the study abroad experience and increases students’ understanding of the target culture.

GER 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

GER 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

GER 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

GER 493 A-Z. Special Topics 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

GER 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

GER 495. Independent Study. 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.

Ger 496. Senior Thesis. 1-3 Hr. PR: Consent.

GER 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Gerontology (GERO)**

GERO 212. Introduction to Gerontology. 3 Hr. Survey of biological, psychological and sociological issues and problems associated with human aging. Selected social policies impacting quality of life for the elderly are presented.

GERO 293 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

GERO 310. The Aging Women. 3 Hr. Does gender make a difference in the aging process? This course examines the female experience of growing older. Lecture, discussion, review of literature, with focus on selected works of literature and the creative arts.

GERO 312. Issues in Gerontology. 3 Hr. This course introduces students to a broad spectrum of topics and issues related to aging by focusing on current issues and controversies associated with a rapidly aging world and the implications that follow.

GERO 410. Rural Gerontology. 3 Hr. Overview of health, social, and policy issues that impact the quality of life of older adults living in rural environments, contrasted with those in urban areas. (Equivalent to GERO 681.)

GERO 412. Public Policy of Aging. 3 Hr. Policy analysis of major public programs for senior citizens - Older American Act, Medicare-Medicaid and Social Security. Discussion of future of these programs and societal response. Emphasis on senior programs in West Virginia. (Equivalent to GERO 512.)

GERO 418. Aging, Women and Culture. 3 Hr. This course will use a multidisciplinary approach to examine the impact of gender, race/ethnicity, and culture on aging, the aging population and individual experiences of aging.
GERO 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

GERO 493 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

GERO 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

History (HIST)

HIST 101. Western Civilization: Antiquity to 1600. 3 Hr. (HIST 101 does not have to precede HIST 102.) A survey of the major developments in Western civilization beginning with the ancient Mediterranean world and concluding with Reformation Europe.

HIST 102. Western Civilization: 1600 to Present. 3 Hr. (HIST 102 may precede HIST 101.) A survey of major developments in Western civilization from 1600 to the present with attention to Europe’s emerging industrial society and changing role in world affairs.

HIST 104. Latin America: Past and Present. 3 Hr. Introduction to Latin American history, stressing the relationship between the past and present. Special emphasis is given to economic problems, political development, and social change in modern Latin America.

HIST 105. The Middle East. 3 Hr. History of the Middle East from the rise of Islam (610 C.E.) to Twentieth Century. Special attention given to religion, gender issues, political developments, economic relations, with the West, cultural patterns and changes in the modern era.

HIST 106. East Asia: An Introduction. 3 Hr. Focuses on modern China, Japan, and Korea. Consideration of important problems facing each nation today together with the cultural and historical developments which help explain contemporary affairs in East Asia.

HIST 108. North America: Past and Present. 3 Hr. Introduction to the history of Canada, Mexico, and the United States, emphasizing selected social, economic, and political developments and how they have influenced the present.

HIST 152. Growth of the American Nation to 1865. 3 Hr. (HIST 152 does not have to precede HIST 153.) Examines the basic political, economic, and social forces in formation and development of the United States before 1865. Emphasis on national development from independence through the Civil War.

HIST 153. Making of Modern America: 1865 to the Present. 3 Hr. (HIST 153 may precede HIST 152.) Continues the examination of basic political, economic, and social forces in the development of the United States since the Civil War.

HIST 179. World History to 1500. 3 Hr. Comparative history of Africa, Asia, and Europe from earliest times until 1500. Political, economic, social, and religious developments with emphasis on patterns of authority, the individual, nature, and society.

HIST 180. World History Since 1500. 3 Hr. Comparative history of Africa, Asia, and Europe 1500 to the present. Political, economic, and social developments with emphasis on patterns of authority, the individual, nature, society, and the impact of the West.

HIST 199. Orientation to History. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

HIST 201. History of Ancient Times: Stone Age to the Fall of Rome. 3 Hr. Ancient civilizations of the Near East and the Mediterranean.

HIST 202. King Tut’s Egypt. I, II. 3 Hr. Surveys ancient Egyptian history from late pre-dynastic era (4500 BCE) through New Kingdom (1090 BCE). Examines culture, society, religion, art, architecture, and archaeology of ancient Egypt before, during, and after the time of King Tutankhamon.

HIST 203. Introduction to Medieval Europe. 3 Hr. Treats the emergence of the distinctive culture of Western Europe from the Fall of Rome to the Renaissance, considering the transformation and interaction of politics, economics, society, religion, and ideas.

HIST 204. Renaissance and Reformation. 3 Hr. Medieval antecedents; humanism and the new learning; renaissance art; Machiavellian politics; demographic and social trends; Luther and Calvin, Radical reformers, Council of Trent; popular culture; wars of religion.

HIST 205. Absolutism and Enlightenment. 3 Hr. Europe from 1600-1800. End of religious wars; emergence of absolutism; nobility and court life; mercantilism; expansion; theological and philosophical crisis; empiricism and scientific revolution; philosophes and Enlightenment; French Revolution.
HIST 206. Social History of Europe. 3 Hr. Examines the lives of ordinary people in Europe from the end of the Middle Ages to the present.

HIST 207. Revolutionary Europe. 3 Hr. Traces the development of European history from the reign of Louis XV to the end of the Franco-Prussian War. Political and social history emphasized.

HIST 209. Twentieth Century Europe. 3 Hr. Traces the major political, economic, and social developments of Europe from World War I to the present.

HIST 210. Modern Military History. 3 Hr. Military history from the American Revolution to the present, stressing the evolution of warfare with particular attention to strategy, tactics, weaponry and the consequences of war.

HIST 217. History of Russia to 1917. 3 Hr. Medieval Russia and the development of autocracy; imperial expansion and serfdom; response to the West from Peter I to Alexander II; Great reforms, economic transformations, revolutionary movement; complex of crises after 1900.

HIST 218. History of Russia: 1900-Present. 3 Hr. Revolution and reform to 1914; World War, 1917 revolutions; NEP and Stalinism to 1939; World War II and postwar Stalinism; reform under Khrushchev and Brezhnev; Gorbachev and dissolution of USSR; post-Soviet trauma.

HIST 220. The Holocaust. 3 Hr. The origins and development of Nazi genocide against European Jews, focusing on the experience of the victims, the motives of the killers, and the inaction of bystanders.

HIST 221. History of Modern Germany. 3 Hr. German history from Congress of Vienna to the end of World War II. Student gains special knowledge of more specialized topics by selecting literature and writing essays on these topics.

HIST 225. Modern South Asia. 3 Hr. History of India, Pakistan, and Bangladesh from the Medieval period to the present; traditional background, Muslim conquests, British Raj, nationalist and independence movements, partitions, independent states, and current issues.

HIST 241. Latin America: Culture, Conquest, Colonization. 3 Hr. History of the formative period of Latin America, emphasizing the social and economic interaction between Indians, Europeans, and blacks from the conquest to the wars for independence in the early nineteenth century.

HIST 242. Latin America: Reform and Revolution. 3 Hr. History of modern Latin America, concentrating on the durability of nineteenth-century social, economic, and political institutions, and the twentieth-century reformist and revolutionary attempts to change those institutions.

HIST 250. West Virginia. 3 Hr. Historical foundations and development of West Virginia, with particular emphasis upon the growth of the government, the economy, and the traditions of the state.

HIST 255. History of American Colonial Society: 1607-1763. 3 Hr. The planting and maturation of the English colonies of North America. Relationships between Europeans and Indians, constitutional development, religious ferment, and the colonial economy are studied.

HIST 256. History of the American Revolution: 1763-1790. 3 Hr. The immediate origins and long-range consequences of the movement for independence from Great Britain; includes the 1775-1790 controversy over the charter of new state and federal governments.

HIST 257. Antebellum America: 1781-1861. 3 Hr. (Completion of HIST 152 is advised.) American history from the Revolution to the Civil War is examined in detail, with particular attention to the key personalities of the era, the development of political parties, the movement westward, the beginnings of industrialization, and the sectional struggles that culminated in war.

HIST 259. The United States: 1865-1918. 3 Hr. Development of the United States during the most intensive phase of American industrialization; special emphasis on ideas of selected Americans on how to cope with the increase in poverty and social malaise which accompanied economic development; attention is also given to the roots of American imperialism.

HIST 261. Recent America: The United States since 1918. 3 Hr. (Primarily for non-history majors.) The 1920s, the New Deal, World War II, and a survey of developments since World War II.

HIST 264. American Indian History. 3 Hr. Surveys the history of Native peoples of what is now the United States, from pre-contact to the present. Ethnohistorical approach emphasizes cultural development as well as interactions with European and American peoples and policies.

HIST 271. Science/Religion and Myth. 3 Hr. Surveys human understandings of nature from prehistoric astronomies and Babylonian myths through ancient and medieval thought to the new sciences of Copernicus, Galileo, and Newton.
HIST 272. Science Since 1700. 3 Hr. Historical survey of major trends and critical events in science since the Scientific Revolution, including developments in the physical and biological sciences. Examines both the content and context of science.

HIST 275. The Coal Industry in America. 3 Hr. The historical development of the coal industry: the technology of extraction, the political and economic context, the United Mine Workers of America, and the particular social problems of the industry will be emphasized.

HIST 277. Revolutions in Science and Technology. 3 Hr. Examines particular periods of intensified change in science and technology, to develop general understanding of scientific and technical change. Episodes may include the Scientific, Industrial, Darwinian, or other revolutions.

HIST 281. The Agrarian Transformation. II. 3 Hr. Surveys the modernization of world agriculture from 17th century Europe to the Green Revolution, and its economic, social, and political consequences. (Alternate years.)

HIST 284. History of Environmental Sciences. II. 3 Hr. Physical environment of the Earth, from the Greek central Earth to plate tectonics. Historical perspectives on geology, geography, oceanography, and other Earth Sciences. (Alternate years.)

HIST 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

HIST 304. History of Sacred Places. 3 Hr. Begins by analyzing the meaning of sacred and then proceeds to a comparative historical, religious, and political discussion of selected sacred places.

HIST 316. World War 1 in Europe. 3 Hr. Impact of World War I in the trenches, on the home front, in the empires; the Peace Settlement and the legacy of Bolshevism, Fascism, cultural pessimism, and financial ruin.


HIST 331. History of Italy: 1800-2000. 3 Hr. Napoleonic occupation, regional states, Risorgimento, liberal democracy, emigration, industrialization, World War I, Mussolini and Fascism, postwar reconstruction, cinema, partyocracy, images of Italy, 1900s reforms.

HIST 346. Kinship in Premodern Europe. 3 Hr. Traces key shifts in the theory and practice of European family structure, gender roles, marriage, demography, inheritance, household labor, property holding, and child-rearing from 500 BC to 1700 AD.

HIST 400. Greece and Rome. 3 Hr. Covers the Minoan and Mycenean civilizations, Archaic and Classical Greece, Alexander the Great and the Hellenistic Age, the Roman Republic, the Etruscan and Carthaginian states, and the rise of the Roman Empire.

HIST 401. Social and Economic History of the Middle Ages: 300-1000. 3 Hr. (HIST 203 is recommended as preparation.) The social-economic crisis of the late Roman and German institutions, the Merovingian and Carolingian economies, Pierenne Thesis, and transition to feudal society.

HIST 404. Ancient and Medieval Science. 3 Hr. Investigations of the natural world in classical antiquity and medieval Europe.

HIST 407. The Rise of Modern Science. 3 Hr. The emergence of the scientific world view from the Renaissance through the Enlightenment.

HIST 408. Science in Modern Europe. 3 Hr. Crystallization and generalization of scientific world view in Europe after the Scientific Revolution. Emphasizes the mutual interaction of science, society, and culture.

HIST 409. Brazil: Colony to World Power. 3 Hr. Examines the transition of Brazil from a colony to a world power, with special emphasis on recent economic developments, regional diversity, political patterns, foreign affairs, and race relations.

HIST 410. Modern Spain. 3 Hr. Survey of the Muslim, Hapsburg, and Bourbon periods followed by an examination of modern political and social forces, the Civil War, and the rule of Franco.

HIST 411. Industrial Revolution: 1600-1900. 3 Hr. Focuses on technical, economic, and social changes surrounding the Industrial Revolution in England and the United States. Examines also the expanding effects of the process of industrialization in continental Europe.

HIST 412. Introduction to Public History. 3 Hr. Introduction to a wide range of career possibilities for historians in areas such as archives, historical societies, editing projects, museums, business, libraries, and historic preservation. Lectures, guest speakers, field trips, individual projects.
HIST 413. France from the Renaissance to Napoleon. 3 Hr. French history from the end of the Hundred Years War to Napoleon's defeat at Waterloo. Focus on the construction of the modern French state, the Enlightenment, the French Revolution, and Napoleon.

HIST 414. France since 1815. 3 Hr. French history from the Restoration of the Bourbon monarchy to the present. Will emphasize the development of a modern industrial society, the revolutions of the 19th century, the impact of the World Wars, and France's role in the new Europe.


HIST 416. The French Wars of Religion 3 Hr. Detailed analysis of the tangled roots of this conflict (1562-1629), the salient events of the period, and their long-term impact. Popular culture, military developments, theology, and court politics.

HIST 417. World War II in Europe. 3 Hr. PR: 6 hrs. History or consent. Impact of World War II on political culture and moral fabric; emphasis on themes of invasion, occupation, collaboration, resistance, survival, and retribution. (Alternate years.)

HIST 418. Eastern Europe since 1945. 3 Hr. The social, economic, intellectual, cultural, and political history of Eastern Europe since the Second World War. Special emphasis on the causes of the East European revolutions of 1989 and the problems of post-communist transition. (Offered every third semester.)

HIST 419. Revolutionary Russia: 1900-1939. 3 Hr. Crisis of late Imperial Russia, Silver Age, World War, 1917 revolutions; Civil War, renewed empire, crisis of 1921; NEP, policy debates, succession; Stalinism to 1939; World War II, post war Stalinism; initial repudiation of Stalin.

HIST 420. U.S.S.R. and After: 1953 to Present. 3 Hr. Crisis of late Stalinism; Krushchev, destalinization, reforms; Brezhnev, stabilization, militarization, corruption, stagnation; Gorbachev, perestroikia, glasnost', disintegration; Yeltsin, shock therapy, criminalization, decline.

HIST 421. Hitler and the Third Reich. 3 Hr. PR: Junior, senior, or graduate standing. Myths and realities of Hitler's public and personal life; emphasis on rise to power, party, ideology, and propaganda techniques; position and policies as Fuehrer.

HIST 422. Twentieth-Century Germany from Weimar to Bonn. 3 Hr. The Weimar Republic, the Third Reich, and the two German states created after World War II.

HIST 424. 15th and 16th Century England. II. 3 Hr. England from Richard II to Elizabeth I, covering developments in politics, religion and society, ranging from the War of the Roses and the plague to Protestantism and Shakespeare. (Alternate years.)

HIST 425. History of Modern China. 3 Hr. Introduction to modern China (since 1839) with attention to China’s Confucian heritage; the Chinese effort to modernize in the face of Western diplomatic and economic pressure; specific attention to China’s nationalist and communist revolutionary traditions.

HIST 426. History of Modern Japan. 3 Hr. Modern Japan (since 1868) with attention to development of Japanese institutions and ideas in earlier periods, especially the Tokugawa Era (1600-1868); examines the rapid pace of economic change in the nineteenth and twentieth centuries along with the important social, political, and diplomatic implications of this change.

HIST 427. East Africa to 1895. 3 Hr. East Africa from earliest times to the beginning of European control. Population movement and interaction, development of varying types of policy, revolutionary change, and the European scramble for East Africa form the major focus.

HIST 428. East Africa since 1895. 3 Hr. History of colonial rule and movement to independence in East Africa. Political, economic, and social changes will be examined with particular emphasis on the rise and triumph of African nationalism.

HIST 429. History of Africa: Pre-Colonial. 3 Hr. History of Africa from earliest times to the middle of the nineteenth century. Particular emphasis on population and interaction, state formation, and the development of trade in sub-Saharan Africa as well as the impact of such external influences as Christianity and Islam.

HIST 430. History of Africa: European Dominance to Independence. 3 Hr. History of Africa from the middle of the nineteenth century to the 1960s. Political and economic trends will form major focus.

HIST 431. Seventeenth Century Britain: 1603-1715. 3 Hr. The more significant political, social, economic, religious, and intellectual developments of Britain during a century of revolution and of the men and women who interacted with those movements.

HIST 432. Eighteenth Century Britain: 1715-1832. 3 Hr. The “Age of Aristocracy,” the political, social, religious, economic, and intellectual impact of the Industrial, Agricultural, American, and French revolutions.
HIST 433. West Africa to 1885. I. 3 Hr. West Africa from the earliest times to the imposition of colonial rule. Examines social, economic, political developments and interactions, and European scramble for West Africa. (Alternate years.)

HIST 434. West Africa from 1885. II. 3 Hr. Abolition of the transatlantic slave trade, imposition of colonial rule, colonial economic, social and administrative systems, the rise and triumph of African nationalism, West Africa since independence.

HIST 441. 17th Century Colonial America. I. 3 Hr. The establishment of England’s American colonies and their development during a century of political, social, religious, and economic change and the interaction between events in Old and New Worlds. (Alternate years.)

HIST 442. 18th Century America. II. 3 Hr. The social, political, and economic maturation of England’s American colonies, the move toward independence, and the establishment of government at state and federal levels. (Alternate years.)

HIST 445. History of American Women. 3 Hr. Examination of the history of American women from 1607 to the present, with emphasis on working conditions, women’s rights, development of feminism, women’s role in wartime, and women in the family.

HIST 448. Sexuality in American Culture. 3 Hr. Explores changes in sexuality in the United States from the seventeenth century to the present, examining social and cultural struggles and debates over the meaning of sexuality and sexual orientation in America.

HIST 449. Women’s Movements Since 1960. 3 Hr. Comparison of U.S. “Second wave” and “Third Wave” feminisms; validity of the concepts of “Waves” of feminism; and impact of race, class, sexual orientation on perspectives on women’s status.


HIST 452. African-American History Since 1900. 3 Hr. Reconstruction, the age of reaction and racism, black migration, black nationalism, blacks in the world wars, and desegregation.

HIST 453. Civil War and Reconstruction. 3 Hr. Causes as well as constitutional and diplomatic aspects of the Civil War; the role of American black in slavery, in war, and in freedom; and the economic and political aspects of Congressional Reconstruction.

HIST 456. The Gilded Age in U.S. History. 3 Hr. Examines responses of the American people and institutions to opportunities and problems of the late nineteenth century. Emphasis on rise of big business; labor organization; immigration; regular, reform, and radical politics; disappearance of the frontier; farm crisis; and origins of imperialism.

HIST 457. The United States From McKinley to the New Deal, 1896 to 1933. 3 Hr. American national history from William McKinley to Franklin D. Roosevelt. Particular attention is given to great changes in American life after 1896; national political, economic, social, and cultural development; the Progressive Era in American politics; and alterations in American foreign relations resulting from the Spanish-American War and World War I.

HIST 459. United States History: New Deal to Great Society. 3 Hr. Covers New Deal; World War II; Cold War, with emphasis on American social, political, technological, and cultural developments; United States domestic problems and foreign relations from 1945 to 1968.

HIST 460. World War II in America. 3 Hr. Examines the American experience in World War II; with an emphasis on the economic, social, and political impact of war on American society.

HIST 463. American Diplomacy to 1941. 3 Hr. PR: None. HIST 152 and 153 recommended. American foreign policy and diplomacy from the adoption of the Constitution to the beginning of World War II.

HIST 464. American Diplomacy since 1941. 3 Hr. (HIST 152 and 153 recommended.) America’s foreign policy and growing involvement in international relations including the U.S. role in World War II, the Korean War, and Vietnam.

HIST 465. The Vietnam War. II. 3 Hr. United States participation in the 1946-1975 fighting in Indochina. United States involvement in the political and military conflict, and the impact of the war on the United States. (Alternate years.)

HIST 466. American Economic History to 1865. 3 Hr. Origins and development of American business, agricultural, and labor institutions, problems, and policies, from 1600 to 1865; influence of economic factors upon American history during this period.

HIST 467. American Economic History Since 1865. 3 Hr. Scope similar to HIST 466.

HIST 468. The Old South. 3 Hr. (For advanced undergraduate and graduate students.) History of the South exploring peculiar differences that led to an attempt to establish a separate nation. The geographical limitation permits a detailed study of economic and social forces within the context of the larger national history.
HIST 469. The New South. 3 Hr. Integration of the South into the nation after the Civil War. Emphasis on southern attitudes toward industrialization, commercial agriculture, organized labor, and African-Americans. Special attention to the southern literary renaissance and conservative and progressive politics of the southern people.

HIST 473. Appalachian Regional History. 3 Hr. Historical survey of Central Appalachia's three phases of development: traditional society of the nineteenth century, the transformation of a mountain society by industrialization at the turn of the twentieth century, and contemporary Appalachia.

HIST 474. The City in American History. 3 Hr. A survey of urban history in the United States, including the colonial period, with emphasis on the nineteenth and twentieth centuries, focusing on physical development of cities (planning, transportation, architecture, suburbanization) and social history.

HIST 475. Hollywood and History. 3 Hr. Examines twentieth century American culture, politics, and society through film. It explores the relationship between film and history, using films as primary sources for understanding the past.

HIST 477. Working Class America. 3 Hr. This course is designed to introduce students to issues surrounding the American working class. It will explore changes in the modes of production, the impact of labor migrations, the emergence of working-class organizations, and the political and social ideologies of working people. Particular attention will be given to the impact of racial, ethnic and gender-based conflict on the emergence of working-class movements. Students will be encouraged to interpret historical material in the context of current workplace relations.

HIST 480. History of the Alps. 3 Hr. Examines the peoples, lands, culture, and politics of the Alpine arc (France, Switzerland, Italy, Austria, Germany, and Slovenia) in comparative perspective. Mountain democracy, commerce, banditry, transportation, tourism, mining.

HIST 481. The Mediterranean: 1200-1800. 3 Hr. Interactions between societies surrounding the Mediterranean (Christians, Muslims, and Jews from Europe, the Ottoman Empire, Egypt, the Maghrib) form the late Abbasids to Napoleon. Trade, warfare, family life, religion.

HIST 484. Historical Research-Capstone. 3 Hr. PR: History major or consent. Capstone course which introduces historical research techniques. Completion and presentation of major research paper required.

HIST 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

HIST 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

HIST 492. Directed Study. I, II, S. 1-3 hr. Directed study, reading, and/or research.

HIST 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

HIST 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

HIST 495. Independent Study. I, II, S. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.

HIST 496. Senior Thesis. 1-3 Hr. PR: Consent.

HIST 497. Research. 1-15 hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or dissertation. (Grading may be S/U.)

HIS 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

HIST 499 A-Z. Global Service Learning 3 Hr. PR: Consent.

Human Nutrition and Foods (HN&F)

HN&F 126. Society and Food. 3 Hr. Exploration on a global basis of interactions of man and environment as reflected in food production systems. Relation of food supply and use to development or maintenance of social and political institutions.

HN&F 171. Introduction to Human Nutrition. 3 Hr. Nutrient structure, metabolism, integrated function and their importance to human well-being during all stages of the life cycle. Current concerns and those of special interest to college students in meeting nutrient needs.


HN&F 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

HN&F 348. Science of Food Preparation. 2 Hr. PR: BIOL 102 and BIOL 104 and PR or CONC: FDST 200 and CHEM 116. To explore functional properties of ingredients and applied scientific theories to food preparation.

HN&F 350. Cross-Cultural Dietary Patterns. 4 Hr. PR: HNF 171 and HNF 348. Contemporary United States models for menu planning, meal service, and mealtime etiquette; factors affecting evolution of American regional/ethnic dietary patterns; international dietary patterns; integration of current nutritional recommendations into ethnic dietary practices. (3 hr. lec., 1 1/2 hr. lab.)

HN&F 353. Food Service Systems Management. 4 Hr. PR: Dietetics major and MATH 126 or HNF 350 and PR or Conc.: ENV M 241. Introduction to food service systems and systems management. Field experience in institutional and commercial food services.


HN&F 361. Nutrition Laboratory Experimentation. 2 Hr. Coreq.: HNF 460 or consent. Nutrient analysis and introduction to nutrition experimentation; nutritional assessment.

HN&F 372. Community Nutrition. 3 Hr. PR: HNF 171. Beginning planning for community nutrition to individuals and families at various stages of the life cycle. Roles of concerned agencies and professional groups. Clinical experience in community facilities.

HN&F 374. Nutrition in Disease. 4 Hr. PR: HNF 171; physiology or consent. Nutritional care aspects of patients. Modification of diet to meet human nutrition needs in various medical conditions.

HN&F 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

HN&F 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

HN&F 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

HN&F 494 A-Z. Seminar. 1-3 Hr. PR: Senior standing and consent. Presentation and discussion of topics of mutual concern to students and faculty.

HN&F 496. Senior Thesis. 1-3 Hr. PR: Consent.

HN&F 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Honors (HONR)

HONR 199. Orientation to Honors. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

HONR 205. English Ritual Drama and Dance. 3 Hr. Morris dance and Mummers plays are an important part of the culture and heritage of working-class England. This class looks at its origins, and their impact on society and politics. Participation in dance required.

HONR 210. City-As-Text-Morgantown. 3 Hr. National Collegiate Honors Council's framework City-As-Text uses Morgantown as the basis for an interactive course which uses primary documents, and physical structures to investigate the historical, political, cultural, and social aspects of place.

HONR 215. Confronting Pseudoscience. 3 Hr. Using the tools of evidential reasoning and critical thinking this course examines the difference between a true scientific endeavor and pseudoscientific belief systems.

HONR 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

HONR 298. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 298. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study or research.

HONR 298B. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 298C. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 298D. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 298E. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 298F. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 298G. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 298H. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 298I. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

HONR 491. Professional Field Experience. 1-9 Hr. PR: Consent. (May be repeated up to a maximum of 9 hours.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

HONR 491A. Professional Field Experience: 1-9 Hr. PR: Consent (May be repeated up to a maximum of 9 hours.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

HONR 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

HONR 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

HONR 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

HONR 496. Senior Thesis. 1-3 Hr. PR: Consent.


HONR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

HONR 498C. I,II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498D. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498E. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498F. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498G. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498H. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498I. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.
HONR 498J. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498K. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498L. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

HONR 498M. Honors. I, II, S. 1-3Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

Horticulture (HORT)
HORT 182. Turf Grass Management. 3 Hr. PR: PLSC 206. Establishment, maintenance, and adaptation of grasses for lawns, golf courses, parks, athletic playing fields, and roadsides.

HORT 184. Trees and Shrubs. Identification, description, adaptability, culture, and evolution of selected woody plant materials with emphasis on their use as landscape materials.

HORT 185. Introduction to Landscape Design. 2 Hr. PR: HORT 184 or consent. A general overview of the field applications in landscape architecture with emphasis on outdoor plants and their use in design. (Offered spring of even years).

HORT 186. Plant Propagation. 3 Hr. PR: PLSC 206 or consent. Study of practices of plant propagation and factors involved in reproduction in plants. (Offered spring of odd years.)

HORT 187. Introduction to Greenhouse/Nursery Management. 4 Hr. PR: Two semesters of inorganic chemistry and HORT 200 or consent. Greenhouse and nursery as a controlled plant environment. How to regulate factors influencing plant growth and development within specialized environments of greenhouses and Pot ‘n Poot nurseries.

HORT 189. Introduction to Small Fruit Culture. 2 Hr. PR: PLSC 206 and HORT 220 or consent. Physiological, taxonomic, cultural, and ecological principles involved in the production, marketing, and handling of small fruits and small fruit products such as wine.

HORT 220. General Horticulture. 3 Hr. PR: BIOL 101 and BIOL 103, or consent. Principles underlying present-day horticulture practice with special emphasis on how basic discoveries in plant science have been applied in horticulture.

HORT 226. Flower Judging. 1 Hr. One laboratory period per week. Identification and judging of flowers with emphasis on the aesthetic values which underlie desirability in a variety.

HORT 227. Vegetable Identification and Judging. 1 Hr. Identification and judging the common vegetables and the test associated with olericulture in West Virginia. Emphasis is placed on the cultural practices associated with top quality vegetables.

HORT 251. Floral Design. 3 Hr. Basic course in flower arrangement to cover occasions for the home and retail flower shop.

HORT 260. Woody Plant Materials. 3 Hr. PR: BIOL 101 and BIOL 103 or equiv. Common ornamental woody plants, their identification, cultural needs, and evaluation of use; some outdoor study and a one-day nursery trip. (2-3 hr. lab.)

HORT 262. Herbaceous Plant Materials. 3 Hr. Identification, description, adaptability, and evaluation of selected herbaceous annuals and perennials with emphasis on their use as design elements.

HORT 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

HORT 310. Vines to Wines. 2 Hr. Introduction and overview of the principles underlying present-day grape and wine production with special emphasis on origins, botany, appreciation, historical and cultural significance.

HORT 320. Cut Flower Production. 3 Hr. Introduction to basic cut flower production principles and practice.

HORT 360. Landscape Management. 3 Hr. PR: (HORT 220, HORT 260 and HORT 262) or consent. Introduction to basic landscape management principles and practices including landscape design, installation and maintenance.

HORT 420. Plant Propagation. 3 Hr. PR: PLSC 206 or consent. Study of practices of plant propagation and factors involved in reproduction in plants.

HORT 441. Garden Center Management. 3 Hr. PR: PLSC 206 and HORT 220, or consent. Principles of the operation and management of nursery, garden center, and landscape installation businesses with an emphasis on current issues.
HORT 442. Small Fruits. 3 Hr. PR: PLSC 206, HORT 220, or Consent. (One tww-day field trip required.) Taxonomic, physiological, and ecological principles involved in production and handling of small-fruits. (2 hr. lec., 1 hr. scheduled lab.)

HORT 443. Vegetable Crops. 3 Hr. PR: PLSC 206 or consent. (One three-day field trip required.) Botanical and ecological characteristics influencing the production of vegetable crops. (2 hr. lec., 1 hr. lab.)

HORT 444. Handling and Storage of Horticultural Crops. 3 Hr. PR: PLSC 206 and CHEM 116. Characteristics of perishable crops. Methods and materials used to maintain quality. (2 hr. lec., 1 hr. lab.)

HORT 445. Greenhouse Management. 3 Hr. PR: Two semesters of inorganic chemistry and HORT 220 or consent. Greenhouse as a controlled plant environment. How to regulate factors influencing plant growth and development within specialized environments of greenhouses.

HORT 446. Tree Fruits. 3 Hr. PR: PLSC 206 or consent. Principles and practices involved in production of tree fruits. (2 hr. lec., 1 hr. scheduled lab.)

HORT 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

HORT 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

HORT 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

HORT 493A. Special Topics. 1-6 Hr. PR: Consent Investigation of topics not covered in regularly scheduled courses.

HORT 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

HORT 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

HORT 496. Senior Thesis. 1-3 Hr. PR: Consent.

HORT 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Human Resource Management (HRMG)
HRMG 440. Training and Development. 3 Hr. PR: MANG 330. This course provides a theoretical and practical understanding of the field of training and development and offers some practical approaches to conducting training programs.

HRMG 450. Staffing and Selection. 3 Hr. PR: MANG 330. This course focuses on the management of employee staffing and selection and includes such topics as government regulations affecting selection processes, reliability and validity of selection measures, and the measurement of actual job performance.

HRMG 460. Compensation and Benefits. 3 Hr. PR: MANG 330. Designing and implementing total compensation systems in both private and public sectors. The emerging elements of total compensation systems are included providing insights into problems and opportunities for personnel.

HRMG 470. Conflict Management. 3 Hr. This course focuses on the management of conflict in an organizational setting, the topics covered include foundations of individual behavior, styles for managing conflict, negotiations, mediation, and arbitration.

HRMG 480. Collective Barg/Labor Relations. 3 Hr. Examination of the theory and practice of collective bargaining. Topics include economics and historical environment, labor law, unionization, contract negotiation, contract content patterns, conflict resolution, grievance handling, and an introduction to arbitration.

Humanities (HUM)
HUM 101. Introduction to Western Civilization 1. I, S. 3 Hr. Presents the high points of Greco-Roman and Medieval European civilizations: their art, architecture, philosophy, religion, literature and music.

HUM 102. Introduction to Western Civilization 2. II, S. 3 Hr. Presents the art, architecture, philosophy, religion, literature and music of the following periods in Western civilization: the Renaissance, the Age of Classicism and the revolutionary nineteenth and twentieth centuries.

HUM 103. Honors Seminar in Humanities 1. 3 Hr. Honors courses for selected students mirroring HUM 101. Affords participants a wider opportunity for discussion than in HUM 101 and for reading the classic statements on the nature of civilization.
HUM 104. Honors Seminar in Humanities. 2. 3 Hr. Honors courses for selected students mirroring HUM 102. Affords participants a wider opportunity for discussion than in HUM 102 and for reading the classic statements on the nature of civilization.

HUM 105. Cultures of Japan. 3 Hr. Introduction to the intellectual, artistic, and literary cultures and civilizations of Japan within the context of the historical society.

HUM 106. Promethean Myth, Modern Arts. 3 Hr. Introduces theme of “Promethean” individuality at the limits of humanistic pursuit, surveys archetypal characters as they have developed to the present, considering how skepticism had inspired art in diverse forms.

HUM 107. The Humanities of Egypt. 3 Hr. This course will focus on the cultural history of Egypt from ancient until modern times.

HUM 108. The Italian Renaissance. 3 Hr. Introduction to artistic and cultural developments during the Renaissance. In addition, the class will appreciate cross-cultural influences and examine the impact that the Renaissance had on Nineteenth-Century writers.

HUM 110. Classic Hero in Western Civilization. 3 Hr. Courage and the classic forms of the hero in the twentieth century. Historical study of art, literature, philosophy, and religious thought from the Greek classics to contemporary novels and films.

HUM 111. Absurd Hero in Western Civilization. II. 3 Hr. Courage and the figure of the “absurd hero” in the twentieth century. Historical study of literature, art, religion and philosophy from the New Testament to contemporary novels and films.

HUM 120. Humanities of China. 3 Hr. Introduction to the nature and role of philosophy, literature, and art in classical and contemporary China.

HUM 211. Elementary Greek 1. 3 Hr. PR: Permit required. Available only as a tutorial. At least two previous semesters of a foreign language, Latin if possible, is preferred. The study of classical Greek and, by special arrangement, New Testament Greek. (Does not satisfy the Arts and Sciences foreign language requirement.)

HUM 212. Elementary Greek 2. 3 Hr. PR: HUM 211, permit required. Available only as a tutorial. At least two previous semesters of a foreign language, Latin if possible, is preferred. The study of classical Greek and, by special arrangement, New Testament Greek. (Does not satisfy the Arts and Sciences foreign language requirement.)

HUM 213. Intermediate Greek 1. 3 Hr. PR: HUM 212, permit required. Available only as a tutorial. At least two previous semesters of a foreign language, Latin if possible, is preferred. The study of classical Greek and, by special arrangement, New Testament Greek. (Does not satisfy the Arts and Sciences foreign language requirement.)

HUM 214. Intermediate Greek 2. 3 Hr. PR: HUM 213, permit required. Available only as a tutorial. At least two previous semesters of a foreign language, Latin if possible, is preferred. The study of classical Greek and, by special arrangement, New Testament Greek. (Does not satisfy the Arts and Sciences foreign language requirement.)

HUM 293 A-Z. Special Topics. 3 Hr. Investigation of topics not covered in regularly scheduled courses.

HUM 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

HUM 492. Directed Study. I, II, S. 1-3 Hr. Directed study, reading and/or research.

HUM 493 A-Z. Special Topics. 3 Hr. Investigation of topics not covered in regularly scheduled courses.

HUM 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

HUM 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Interior Design (ID)
ID 100. Interior Design Peer Mentoring. 1 Hr. PR: ID Major. New students in interior design participate with upper division mentors in a variety of activities designed to acquaint the students with peers and faculty and to enhance their understanding of the field of interior design.

ID 110. Introduction to Interior Design. 3 Hr. Introduction to design philosophy, elements and principles, universal and sustainable design, and aesthetic and functional evaluation in the context of interior environments using design as a methodology and problem-solving process.

ID 125. Design Foundations. 3 Hr. PR or CONC: ID 110. Application of the theoretical elements and principles of design to two and three dimensional compositions.

ID 155. Interior Design Graphics 1. 3 Hr. Studio experience reading and drafting architectural plans, elevations, sections, details, and paralines.
ID 200. Interior Materials and Structures. 3 Hr. PR: ID 110 and ID major. Interior design materials including types, qualities, and uses, and calculations of quantities; basic architectural elements related to interior design.

ID 225. Space Planning. 3 Hr. PR: ID 110. Studio experience using two- and three-dimensional techniques to increase understanding of spatial relationships; emphasis on ergonomics, anthropometry, and proxemics.

ID 230. History of Interiors and Furniture 1. 3 Hr. The course examines the history of western European design from antiquity through the neoclassical periods as situated within the larger content of the contemporary globe.

ID 235. Interior Design Graphics 2. 3 Hr. PR: ID 155. Studio course in spatial graphics; experience in constructing and using perspective grids; perspective sketching and basic color rendering.

ID 240. Codes and Interior Construction. 2 Hr. This course addresses construction issues, building codes, and life safety codes as they relate to both the commercial and residential built interior environment.

ID 260. History of Interiors and Furniture 2. 3 Hr. PR: ID 230. Interiors, furniture, and decorative arts of Europe and America in the nineteenth and twentieth centuries.

ID 270. Interior Lighting Design. 3 Hr. PR: ID 200. General concepts of light quality, quantity, distribution, and color rendering for residential and contract spaces; practical applications using lighting calculations and graphic illustrations for lighting design.

ID 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ID 325. Computer-Aided Drafting and Design. 2 Hr. PR: ID 376. Lecture/studio using computer-aided drafting and design for interior design; emphasis on CADD as a drafting tool.

ID 330. Design for Quality of Living. 3 Hr. Introduces the concept and methodology of design thinking and the theoretical base of "quality of living" through design programming to enhance quality of living.

ID 355. Contract Interior Design 1. 3 Hr. PR: ID 375 and ID 376. Studio experience in contract interior design problems; emphasis on design of offices as work experience.

ID 375. Residential Interior Design. 3 Hr. PR: ID 270 and ID 260 and TXCL 240. Studio experience in residential interior design problems; emphasis on design process, problem solving, functional and aesthetic considerations, critiquing and graphic presentations.

ID 376. Interior Design Graphics 3. 2 Hr. PR: ID 155. Studio course to strengthen drafting, detailing, and presentation skills; production of typical design construction drawings.

ID 400. Interior Design Internship. 3-6 Hr. PR: ID 375 and written consent. Supervised, direct experience with a practicing designer or other closely allied professional in a career environment.

ID 420. Interior Design Professional Practices. 3 Hr. PR: ID 375. Relationships between marketing/management functions and the design process; problem-solving approach to completion of a design installation.

ID 450. Interior Design Seminar. 1 Hr. PR: ID 420. Professionals in interior design discuss professional organizations, ethics, entry-level positions, and business practices.

ID 455. Contract Interior Design 2. 3 Hr. PR: ID 355. Studio experience in solving design problems related to public spaces, hotels, restaurants, department stores, specialized retail outlets, or health care facilities.

ID 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ID 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ID 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ID 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ID 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

ID 496. Senior Thesis. 1-3 Hr. PR: Consent.

ID 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.
Instructional Design and Technology (IDT)

IDT 430. Women in International Development. 3 Hr. To examine the cultural diversities in the definition of women’s roles and status, to investigate women’s access to education, health, income, credit and technology, and to study women’s health, income, credit and technology, and to study women’s contributions in third world development.

IDT 493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

Industrial Engineering (IENG)
IENG 200. Fundamentals of Industrial Engineering. 1 Hr. PR: Sophomore standing. An introduction to the basic principles of industrial engineering.

IENG 213. Engineering Statistics. 3 Hr. PR: MATH 156. The use of basic statistical analysis in engineering decision making, including, common statistical distributions encountered in engineering, test of hypotheses, confidence intervals, and introduction to simple linear regression.


IENG 293. Special Topics. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

IENG 302. Manufacturing Processes. 2 Hr. PR: IENG 343 or IENG 304. Lectures and demonstrations relating to materials, properties, parameters, design, equipment, economics and computer control of processing systems emphasizing casting, machining, joining, and forming operations.

IENG 303. Manufacturing Processes Laboratory. 1 Hr. Coreq: IENG 302. Laboratory experiments and demonstrations of the basic manufacturing operations of casting, machining and joining. Process parameter measurement, inspection techniques and CNC programming are performed and laboratory report writing is emphasized.

IENG 304. Materials and Costing. 3 Hr. PR: IENG 377 and PR or CONC: MAE 243. Lectures and demonstrations concerning material properties, mechanical properties of materials, and costing systems for evaluating material costs and manufacturing costs.

IENG 314. Advanced Analysis of Engineering Data. 3 Hr. PR: IENG 213. Introduction to linear statistical models. Design and analysis of simple experimental configurations occurring frequently in engineering studies. Similarities and differences between regression and experiment design models emphasized in a vector-matrix setting.

IENG 316. Industrial Quality Control. 3 Hr. PR: IENG 213. Principles and methods for controlling the quality of manufactured products, with emphasis on both economic and statistical aspects of product acceptance and process control.

IENG 331. Computer Applications in Industrial Engineering. 3 Hr. PR: ENGR 102. Introduction to computer applications in manufacturing. Emphasis on system design and analysis and the role of computers in productivity improvement.

IENG 343. Production Planning and Control. 3 Hr. PR: IENG 220 and PR or CONC: IENG 314. Principles and problems in forecasting, aggregate planning, material management, scheduling, routing, and line balancing.

IENG 350. Introduction to Operations Research. 3 Hr. PR: IENG 213. An introduction to the basic principles and techniques of operations research. Topics include linear programming, integer programming, transportation and assignment problems, project scheduling, queuing theory, and computer applications.

IENG 360. Human Factors Engineering. 3 Hr. PR: IENG 213. Includes the study of ambient environment, human capabilities and equipment design. Systems design for the human-machine environment interfaces will be studied with emphasis on health, safety, and productivity.

IENG 377. Engineering Economy. 3 Hr. Basic concepts of financial analysis, investment planning and cost controls as they apply to management technology investment in manufacturing; financial planning and budgeting as applied to an engineering function.

IENG 405. Design for Manufacturability. 3 Hr. PR: IENG 302 and IENG 303. Aspects of design, manufacturing and materials; emphasis on design for manufacturability and assembly, including material selection and manufacturing processes on product cost.

IENG 415. Statistical Decision Making. 3 Hr. PR or CONC: IENG 213. Basic concepts of probability theory. Discrete and continuous distributions, joint and derived distributions, with application to industrial and research problems. Introduction to generating functions and Markov chains.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>IENG 417</td>
<td>Total Quality Management. 3 Hr. PR: IENG 213. Fundamentals and philosophy of total quality management in industry and government. Includes implementation of quality function deployment and the tools of off-line quality assurance procedures.</td>
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<td>IENG 422</td>
<td>Job Evaluation and Wage Incentives. 3 Hr. PR: IENG 220 or Consent. Principles used in evaluating jobs, rates of pay, characteristics and objectives of wage incentive plans, incentive formula and curves.</td>
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<td>IENG 423</td>
<td>Designing Decision Support System. 3 Hr. PR: IENG 331. Basic concepts of software design of decision support systems that can be used by non-technical personnel in management positions.</td>
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<tr>
<td>IENG 431</td>
<td>Expert Systems in Industrial and Management Systems Engineering. 3 Hr. PR: IENG 331. Expert systems design and development for manufacturing service applications; knowledge acquisition, representation, search techniques, inference engines, data base interfaces, algorithmic interfaces.</td>
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<td>IENG 443</td>
<td>Facility Planning and Design. 3 Hr. PR: IENG 343 and IENG 350. Problems of facility and equipment location. Long-range planning of industrial facilities. Block and detailed layout of manufacturing plants and general offices. Space utilization and allied topics in facility design.</td>
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<td>IENG 446</td>
<td>Plant Layout/Material Handling 3 Hr. PR: IENG 220 and IENG 350. Facility design and economic selection of material handling equipment in a production/service facility. Emphasizes optimization of materials and information flow.</td>
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<td>IENG 449</td>
<td>Design of Material Handling Systems. 3 Hr. PR: IENG 220 or consent. Application of industrial engineering theory and practice to selection of material systems and equipment including efficient handling of materials from first movement of raw materials to final movement of finished product. Present quantitative design techniques.</td>
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<td>IENG 455</td>
<td>Simulation by Digital Methods. 3 Hr. PR: IENG 213 and IENG 331 or consent. Introduction to Monte Carlo simulation methods and their application to decision problems. Student identifies constraints on problems, collects data for modeling and develops computer programs to simulate and analyze practical situations. Interpretation of results emphasized.</td>
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<td>IENG 461</td>
<td>System Safety Engineering. 3 Hr. PR: Consent. The concepts of hazard recognition, evaluation analysis and the application of engineering design principles to the control of industrial hazards.</td>
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<tr>
<td>IENG 471</td>
<td>Design of Productive Systems 1. 3 Hr. PR: Senior standing; 21 hours of required IENG courses in industrial engineering. The integration of industrial engineering principles in the design of productive systems. Emphasis will be on analysis of different systems for productivity management.</td>
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<tr>
<td>IENG 472</td>
<td>Design of Productive Systems 2. 3 Hr. PR: IENG 471 and senior standing in industrial engineering. Continuation of IENG 471.</td>
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<td>IENG 473</td>
<td>Team Facilitation. 3 Hr. This course prepares students to facilitate continuous improvement teams. Students learn basics of team operations, facilitation tools and facilitation practices.</td>
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<td>IENG 474</td>
<td>Technology Entrepreneurship. 3 Hr. Basic concepts and practices necessary to convert a technology idea into an entrepreneurial business.</td>
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<td>IENG 491</td>
<td>Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.</td>
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<td>IENG 493 A-Z</td>
<td>Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.</td>
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<td>IENG 494 A-Z</td>
<td>Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.</td>
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<td>IENG 495</td>
<td>Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.</td>
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<td>IENG 496</td>
<td>Senior Thesis. 1-3 Hr. PR: Consent.</td>
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<td>IENG 498</td>
<td>Honors. 1-3 Hr. PR: Consent. Students in Honors Program and consent by the honors director. Independent reading, study or research.</td>
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**Intensive English Program (IEP)**

IEP 000. Intensive English Program. 9-12 Hr. Study in the Intensive English Program, with a focus on improving English language skills. Course does not count toward any degree program.
Industrial Hygiene and Safety (IH&S)
IH&S 320. Foundations of Environmental Health Practice. I, II, S. 4 hr. PR: Consent. Designed to enable the environmentalist to recognize and identify environmental stresses and the effect of these stresses on man. Topics include occupational health, physical stress, safety, and basic and broad principles of toxicology.


IH&S 325. Industrial Hygiene Sampling and Analysis. II. 4 hr. PR: IMSE 361 and consent. Calibration and use of sampling and analytical equipment used by industrial hygienists to evaluate the work environment. Advantages and disadvantages of different equipment under various conditions. Biological monitoring as an evaluation tool.

IH&S 326. Safety and Health Measurement and Instrumentation. S. 3 hr. PR: Consent. Practical experience in setting up industrial hygiene field studies, air sampling, and analysis. Practical experience with safety equipment and instrumentation used in the field and in research. Field trips and case studies exposing students to a variety of industrial processes.

IH&S 327. I. H. Noise Assessment. S. 3 Hr. PR: IMSE 361. Industrial Hygiene aspects of assessing and controlling noise-induced hearing loss. Practical experience with noise dosimeters, sound-level meters and instrumentation used to access human noise exposure is provided by field trips and case studies.

IH&S 328. Noise and Ventilation Control Technology. S. 3 hr. PR: IMSE 361 or consent. The course will demonstrate techniques for the recognition, evaluation, and control of noise and ventilation problems. Students will use monitoring equipment to evaluate situations and perform several design projects.

IH&S 380. Internship. I, II, S. 3-6 hr. (May be repeated.) PR: Consent of committee chairperson and department chairperson. Professional internship providing on-the-job training under supervision of a previously approved environmentalist in settings appropriate to professional objectives.

IH&S 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent.supervised practice in college teaching of occupational hygiene and safety. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading may be S/U.)


IH&S 492. Directed Study. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

IH&S 493. Special Topics. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.


IH&S 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

IH&S 496. Graduate Seminar. I, II, S. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.


IH&S 498. Thesis or Dissertation. I, II, S. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student’s reports, thesis, or dissertations. (Grading may be S/U.)

IH&S 499. Graduate Colloquium. I, II, S. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University’s facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department’s graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by h/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master’s programs.)

Industrial and Labor Relations (ILR)
ILR 360. Survey of the Employment Relationship. 3 Hr. PR: Consent. Overview of employee and labor relations; management techniques, teams, labor-management relations, employment law, benefits, compensation, education and training programs, and current issues.

ILR 494. Seminar. 1-3 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.
International Business (INBS)
IBUS 480. Global Strategic Issues. 3 Hr. PR or CONC: BCOR 370. This course focuses on developing skills to communicate effectively in the cross-cultural context of the current international business environment. The focus is on interpersonal, team and organizational-level communication in diverse cultural situations.

INBS 480. Global Strategic Issues. 3 Hr. PR or CONC: BCOR 460. An integrated, multifunctional approach focuses on how globalization affects strategy, organization and control of a firm. Students are introduced to global strategic management and organization issues in the context of current theory, research and practice.

Interdisciplinary Studies (INDS)
INDS 115. Creativity in the Modern Arts. 3 Hr. An examination of the role creativity plays in generating art. This team-taught course uses materials from music, theatre, and the visual arts to illustrate principles and to analyze Modernism and its place in American History.

International Studies (INTS)
INTS 199. Orientation to International Studies. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

INTS 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 488. Capstone International Studies. 3 Hr. Capstone experience required for all majors. Options include study abroad, internships, simulations, and senior research projects.

INTS 488A. Capstone International Studies. 3 Hr. Capstone experience required for all majors. Options include study abroad, internships, simulations, and senior research projects.

INTS 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493A. Special Topics. 1-6 Hr. PR: Consent Investigation of topics not covered in regularly scheduled courses.

INTS 493B. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493C: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493D: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493E: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493F: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493G: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493H: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493I: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493J: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493K: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

INTS 493L: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Italian (ITAL)
ITAL 101. Elementary Italian 1. 3 Hr.
ITAL 203. Intermediate Italian 1. 3 Hr. PR: ITAL 102.
ITAL 204. Intermediate Italian 2. 3 Hr. PR: ITAL 203. Continuation of ITAL 203.
ITAL 293. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
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ITAL 293K Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 293M Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 293N Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 293O Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 293P Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 293Q Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 303 Composition and Conversation. 3 Hr. PR: ITAL 204.
ITAL 304 Advanced Conversation. 3 Hr. PR: ITAL 204.
ITAL 371 L'Italia Dal Vivo. 3 Hr. PR: ITAL 204 or consent. This course allows students to improve their ability to communicate effectively in Italian with native speakers, orally and in writing, through a full-immersion experience in Italy. Can count for the Italian studies minor.
ITAL 490 Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.
ITAL 491 Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
ITAL 493 A-Z Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493A Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493B Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493C Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493D Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493E Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493F Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493G Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493H Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493I Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493J Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
ITAL 493K Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered by regularly scheduled courses.
ITAL 496 Senior Thesis. 1-3 Hr. PR: Consent.
ITAL 498 Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.
**Japanese (JAPN)**

JAPN 101. Elementary Japanese 1. 3 Hr.


JAPN 204. Intermediate Japanese 2. 3 Hr. PR: JAPN 203.

JAPN 293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

JAPN 301. Advanced Japanese 1. 3 Hr. PR: JAPN 204.

JAPN 302. Advanced Japanese 2. 3 Hr. PR: JAPN 301.


JAPN 304. Advanced Japanese 4. 3 Hr. PR: JAPN 303.

JAPN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

JAPN 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

JAPN 493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**Journalism (JRL)**

JRL 101. Introduction to Mass Communication. 3 Hr. (Recommended for all University students.) Mass communicator’s role in developing political, social, and economic fabrics of a democratic society. Organization and function of newspapers, magazines, broadcast stations, and other principal media, including the role of advertising and public relations.

JRL 115. Journalism Orientation. 1 Hr. PR: School of Journalism direct admissions status. Support first-year students to make successful transition from high school to college; introduce students to careers, majors in journalism develop a better understanding of the learning process; and acquire basic academic and personal "survival skills."

JRL 210. Visual Journalism and New Media. 3 Hr. PR: JRL 101 or Consent. Theory and principles of visual communication and image culture. Visual literacy, critical thinking, and ethics by visual journalists in digital media. Software applications for photography, graphic design, video, and web publishing.

JRL 215. Media Writing. 3 Hr. PR: MDS 103 and ENGL 101 and ENGL 102 and JRL 101 with a grade of ‘C’ or better, passage of Journalism Qualifying Exam. Introduction to the fundamental writing and fact-gathering skills of journalism and public relations for the print and electronic media. Students must purchase a Macintosh double-density or high-density disk for class. (Lab fee will be assessed for this course.)

JRL 220. Introduction to Photojournalism. 3 Hr. Basic techniques of journalistic photography, digital imaging and editing. Students must have access to a film or digital camera. A lab fee will be assessed to non-majors.

JRL 250. Publications Problems. 1-3 Hr. PR: Admission to School of Journalism. Exploration of planning, designing, and printing problems, and dealing with print professionals. (Lab fees will be assessed for this course.)

JRL 279. Documentary Film in America. 3 Hr. This course, through viewings, readings, lectures and speakers will survey the history of documentary film in America and the ever-growing diversity of documentaries, influenced by the political, economic and social forces of their day.

JRL 293 A-Z. Advanced Journalism Problems. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

JRL 318. Reporting for Print Media. 3 Hr PR: JRL 215 (C or better). Essentials of developing and covering a news beat. Students generate stories, cultivate sources, and discover their community. News and feature stories include police, courts, budgets, meetings, and speeches. A departmental honors section , available to students possessing superior writing skills, requires the instructor’s course approval signature. (Lab fees will be assessed for this course.)
JRL 319. Copy Editing and Make-up. 3 Hr. PR: JRL 318. Students develop the skills necessary for the modern newspaper copy desk, including copy editing, working with wire service copy, headline writing, page layout and desktop production. (Lab fees will be assessed for this course.)

JRL 320. Advanced Photojournalism. 3 Hr. PR: JRL 220 or consent. Introduction to advanced techniques and concepts in visual journalism for print and electronic media. Color, lighting, studio and digital camera techniques.

JRL 431. Multimedia Reporting. 3 Hr. PR: JRL 220 or consent. Reporting/productin for online media. Ethics and role of visual journalist. Software basics and use of audio, video and still photography in online reporting.

JRL 440. Visual Storytelling for the Media. 3 Hr. PR: JRL 220 or consent. Development of advanced practical and analytical skills in digital photojournalism, photo editing and cross-media design. Analysis of images, visual narratives, new media storytelling, digital imaging, media asset management, and ethical and social issues.

JRL 441. Internship. 3 Hr. PR: Journalism majors only and foundation courses in one of the sequences. Full-time employment for a minimum of 10 weeks under a signed contract detailing the terms of the experience. (Graded pass/fail.)

JRL 442. Practicum. 1-2 Hr. Journalism majors only. PR: Foundation courses in one of the sequences. Student must have a signed contract detailing terms of the learning experience. 8-20 hours per week for a minimum of 10 weeks, while taking other courses. (Graded on a Pass/Fail basis.)

JRL 489. Media Issues and Ethics. 3 Hr. PR: JRL 215. In-depth study of contemporary media issues such as right of access to media and morality and ethics in news and advertising; new FTC and FCC regulations; media responsibility to society; social responsibility of media professionals.

JRL 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Graded on a pass/fail basis.)

JRL 491. Practicum. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned; supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Graded on a pass/fail basis.)

JRL 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

JRL 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

JRL 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

JRL 496. Senior Thesis. 1-3 Hr. PR: Consent.

JRL 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

Language Teaching Methods (LANG)
LANG 293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LANG 322. Second Language Acquisition. 3 Hr. PR: LING 101 or LING 311 or equivalent. Study of Linguistic concepts, development patterns, and contributing factors relevant to second language acquisition.

LANG 421. The Teaching of Foreign Languages. 3 Hr. PR: Consent. Required of all students who are prospective foreign language teachers on the secondary level.

LANG 422. Second Language Reading. 3 Hr. PR: LING 101 or LING 311 or equivalent. Study of the second language reading process, relevant research findings, curricular issues, and classroom instructional practices.

LANG 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

LANG 490F. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of languages. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain experience. (Grading may be S/U.)

LANG 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
LANG 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

LANG 493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LANG 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

LANG 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

LANG 496. Senior Thesis. 1-3 Hr. PR: Consent.

LANG 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

Landscape Architecture (LARC)

LARC 105. Introduction to Landscape Architecture. I, II. 3 Hr. A general overview of the field of landscape architecture, environmental design and planning.

LARC 120. Landscape Architectural Drawing. I. 3 Hr. PR: For landscape architecture majors only. Introduction to elements of visual techniques in drafting, basic design, and environmental systems. (Two 3-hr. studios.)

LARC 121. Landscape Architectural Graphics. II. 3 Hr. Introduction to design and graphic methodology with applications to current standards. Development of principles of communication in two- and three-dimensional visual thinking applicable to environmental design professions. (Two 3-hr. studios.)

LARC 212. History of Landscape Architecture. I, II. 3 Hr. A broad survey of the history of the designed human environment with emphasis on the development of landscape architecture. (Does not fulfill Cluster A for landscape architecture students.)

LARC 223. Computer Graphics in Landscape Architecture. I, II. 3 Hr. PR: LARC 121. Application of basic computer graphics to include drafting, rendering, and visualization software used in developing landscape architectural plans and environment analysis. (Two 3-hr. studios.)

LARC 229. Landscape Architecture. I. 3 Hr. PR: For non-Landscape architecture majors only. An appreciation of the basic principles of planting design and information pertaining to the use of ornamental plants around the home. (2 hr. lec., one 2-hr. studio.)

LARC 231. Landscape Architectural Construction Materials and Methods. II. 3 Hr. PR: LARC 250. A study of materials used in landscape architectural construction with emphasis on methods of construction and the preparation of construction drawings for design implementation. (2 hr. lec., one 2-hr. studio.)

LARC 250. Theory of Landscape Architectural Design. I. 3 Hr. PR: LARC 121 or equiv. Application of elements and principles of art and design to landscape architecture. (1 hr. lec., two 2-hr. studios.)

LARC 251. Landscape Architectural Design II. 3 Hr. PR: LARC 250 or equiv. Investigation and application of various factors which play a role in the design of natural and man-made environment. (1 hr. lec., two 2-hr. studios.)

LARC 260. Ornamental Woody Plants and Groundcovers. I. 3 Hr. PR: BIOL 101 and 103, or equiv. Design uses, ornamental qualities, cultural requirements and identification of woody plants and groundcovers in West Virginia. Field course. (One day field trip required at student’s expense). (Two 3-hr. studios.)

LARC 261. Planting Design. II. 3 Hr. PR: LARC 250 and LARC 260. Study of planting design theory and practice, including uses of plants in site and environmental design, planting design techniques and preparation of planting plans, construction details, and technical specifications. (1 hr. lec., Two 2 hr. studios.)

LARC 271. Portfolio Design. 1 Hr. PR: LARC 121, 250, 260. Introduction to graphic design and presentation forms and their application for the preparation of the second year portfolio. (One 2-hr. studio).

LARC 330. Landscape Architectural Construction 1. I. 4 Hr. PR: (CE 200 or equiv.) and (MATH 126 and MATH 128) or (MATH 129 or equiv.). The study of the technical principles of grading design, their application to site planning, and preparation of land form grading plans. (1 hr. lec., Two 3 hr. studios.)

LARC 331. Landscape Architectural Construction 2. II. 4 Hr. PR: LARC 330. Study and preparation of roadway plans (road alignment), surface and sub-surface drainage plans, advanced grading plans, and cost estimates. (2 hr. lec., two 2-hr. studios.)

LARC 350. Landscape Architectural Design 2. I. 4 Hr. PR: LARC 223 and LARC 251 and LARC 261. Study of medium scale site design with emphasis on site analysis, design methodology and presentation. (1 hr. lec., two 3 hr. studios.)
LARC 351. Landscape Architectural Design 3. II. 4 Hr. PR: LARC 330, 350, and 360. Site-design problems dealing with complex environmental systems emphasizing rural and urban design. Projects are integrated with landscape architectural construction. (1 hr. lec., two 3-hr. studios.)

LARC 360. Natural Systems Design. I. 4 Hr. PR: LARC 251 and LARC 261; Conc.: LARC 350. Study of native and naturalized plants of this region and their ecological tolerances, importance to site analysis, and use in planting design. (1 hr. lec., two 3-hr. studios.) (Two-day field trip required at student's expense.)

LARC 361. Interior Plantscaping. II. 2 Hr. PR: BIOL 101 and BIOL 3, or PLSC 52. The study of plants appropriate to interior plantscaping and their special needs and uses in design situations. (One day field trip required at student's expense.) (1 hr. lec., one 3-hr. studio.)

LARC 423. Advanced CAD. 2 Hr. PR: LARC 223 or equivalent. Study and application of advanced computer techniques including Land Development Desktop and AutoCAD. (Two 2-hr. studios.)

LARC 448. Design Analysis. II. 2 Hr. PR: Consent. Analysis of planning and design projects to offer solutions to a given problem. (Offered in spring of even years.)

LARC 450. Advanced Landscape Architectural Design 1. I. 5 Hr. PR: LARC 331 and LARC 351 and LARC 360. Comprehensive design problems integrating all aspects of site design, planting design and construction. Includes advanced projects for urban and rural sites. (2 hr. lec., two 3-hr. studios.)

LARC 451. Advanced Landscape Architectural Design 2. 5 Hr. PR: LARC 450. A comprehensive problem in landscape architecture in which the student demonstrates proficiency acquired from their program of study. (2 hr. lec., two 3-hr. studios.)

LARC 452. Contemporary Issues in Landscape Architecture. II. 2 Hr. PR: LARC 250; Conc.: LARC 251. A series of seminar discussions exploring current and future trends in the practice of landscape architectural design, planning, and management. (2 hr. lec.)

LARC 465. Regional Design. II. 3 Hr. PR: Consent. Consideration of regional landscapes in order to effectively relate design to the ecology and development of a region. (Offered in spring of even years.)

LARC 466. Introduction to Urban Design Issues. 3 Hr. PR: Consent. Community analysis methods, city and small town planning and management of community growth. The course focus is on understanding community and urban design issues and growth management. (Offered in fall of odd years.)

LARC 484. Professional Practice. I. 3 Hr. PR: Consent. Procedures in preparation of contract documents, fees, estimates, operation of an office, and relationship to clients and contractors. (3 hr. lec.)

LARC 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

LARC 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


LARC 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

LARC 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

LARC 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Leadership Studies (LDR)

LDR 201. Principles of Leadership. 3 Hr. This course serves as an introduction to leadership theory and practice. The course will examine various aspects of the literature on leadership; provide practice for developing leadership skills; and offer personal experiences for self-reflection.

LDR 301. Problems in Leadership. 3 Hr. PR: LDR 201. Students will survey a series of case studies, both historical and imagined, in which leadership either succeeds or fails.

LDR 382. Readings in Leadership. 1-3 Hr. PR: LDR 201. This course allows students to read several books on the subject of leadership and to continue developing their knowledge and understanding of the subject.

LDR 401. Leadership in Action. 3 Hr. PR: LDR 201 and LDR 301. This course serves to demonstrate that students have learned how strong, innovative leadership leads to organizational change. Students will tailor this capstone-level/service-learning course to suit their own majors and interests.
LDR 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493A: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493B: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493C: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493D: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493E: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493F: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493G: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493H: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493I: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 493J: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LDR 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

LDR 498. Honors. 103 Hr. PR: Students in the Honors Program and consent by the honors director. Independent reading, study or research.

Legal Studies (LEGS)

LEGS 397. Research. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to a thesis, problem report, research paper or equivalent scholarly project, or dissertation. (Grading may be S/U.)

Linguistics (LING)

LING 101. Introduction to Language. 3 Hr. General introduction to the nature of human language—its sounds, structure, mechanisms, and forms (oral/sign); its evolution and variation, how it is learned and stored, and how it differs from animal communications systems.

LING 103. Introduction to Language Comparison. 3 Hr. (No previous language experience required.) Comparison of various Indo-European languages.

LING 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LING 311. Introduction to Structural Linguistics. 3 Hr. PR: FRCH 203 or GER 203 or JAPN 203 or RUSS 203 or SPAN 203 or equivalent. Required for foreign language majors. A detailed examination of language structure (phonology, morphology, syntax, and semantics) and its relation to language use (sociolinguistics.)

LING 401. Structure of Spanish. 3 Hr. PR: 18 hr. of Spanish and LING 311 or consent. Description of the phonological or grammatical systems of Spanish, with emphasis on contrastive analysis (Spanish/English) and applied linguistics.

LING 402. Structure of Modern French. 3 Hr. PR: 18 hr. of French and LING 311 or consent. Study of phonology, morphology, and syntax of modern French together with a contrastive analysis of French and English.

LING 403. Structure of German. 3 Hr. PR: 18 hr. of German and LING 311 or consent. Phonological, morphological and syntactical structure of contemporary German language.

LING 404. Structure of Russian. 3 Hr. PR: 18 Hr. of Russian and LING 311 or consent. Phonological, morphological, and syntactical structure of contemporary Russian.

LING 411. Phonology. 3 Hr. PR: LING 101 or LING 311. Description of sounds and sound systems in language. Articulatory phonetics. Structuralist and generative approaches to phonemics.

LING 412. Syntax. 3 Hr. PR: LING 311 or consent. Emphasis on generative syntax in English, German, Romance, and Slavic languages.

LING 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

LING 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

LING 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.
LING 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LING 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LING 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

LING 496. Senior Thesis. 1-3 Hr. PR: Consent.

LING 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Library Science (LS)

LS 100. Using Books and Libraries. I, II. 1 Hr. Provides a working knowledge of library facilities, particularly of the University Library. Includes how and when to use basic reference sources and search strategy for term-paper preparation. Useful to any student in the University.


LS 406. Young Adult Literature. I, II. 3 Hr. Survey of adolescent literature and other library materials (print and non-print for junior and senior high school students.) *Presently required for School Library Media Certification in West Virginia.

LS 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

LS 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

LS 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

LS 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.


LS 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Mechanical and Aerospace Engr (MAE)

MAE 211. Mechatronics. 3 Hr. PR: Sophomore standing in engineering. Selection of mechanical and electronic components and integration of these components into complex systems. Hands-on laboratory and design experiments with components and measurement equipment used in the design of mechatronic products. (2 hr. lec., 3 hr. lab.)

MAE 215. Introduction to Aerospace Engineering. 3 Hr. PR: MATH 155 and ENGR 102. Fundamental physical quantities of a flowing gas, standard atmosphere, basic aerodynamic equations, airfoil nomenclature, lift, drag, and aircraft performance. Digital computer usage applied to aerodynamic and performance problems and aircraft design. (3 hr. lec.)

MAE 241. Statics. 3 Hr. PR: Grade of C or better in PHYS 111. Engineering applications of force equilibrium. Vector operations, couples and moments, resultants, centers of gravity and pressure, static friction, free-body diagrams, trusses and frames.

MAE 242. Dynamics. 3 Hr. PR: MATH 156 with grade of C or better and MAE 241. Newtonian dynamics of particals and rigid bodies. Engineering applications of equations of motion, work and energy, conservative forces, impulse and momentum, impulsive forces, acceleration in several coordinate systems, relative motion, instantaneous centers, and plane motion. (3 hr. lec.)

MAE 243. Mechanics of Materials. 3 Hr. PR: MATH 156 with a grade of C or better and MAE 241. Stress deformation, and failure of solid bodies under the action of forces. Internal force resultants, stress, strain, Mohr’s circle, and mechanical properties of materials, generalized Hooke’s law. Axial bending and buckling loads, and combinations. (3 hr. lec.)
MAE 244. Dynamics and Strength Laboratory. 1 Hr. PR or CONC: MAE 242 and MAE 243. Experiments in dynamic and strength of materials. Mechanical properties and stress-strain curves of materials for tension, compression, shear, and torsion. Hardness, fatigue, and fracture of metals. Vibration.

MAE 293. Special Topics. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MAE 299A. Special Problems. 1-6 Hr. PR: Consent.

MAE 299B. Special Problems. 1-6 Hr. PR: Consent.

MAE 299C. Special Problems. 1-6 Hr. PR: Consent.

MAE 312. Introduction to Mechanical Design. 3 Hr. Introduction to the process of designing mechanical objects and machines composed of multiple objects. Basics of engineering graphics, and creation of computer-based models of machine components and assemblies.

MAE 316. Analysis of Engineering Systems. 3 Hr. PR: MATH 261 with a grade of C or better and ENGR 102 and MAE 242. Analytical, numerical, and computational techniques to analyze and solve engineering problems. Mathematical modeling, solution strategies, and analysis of results. Statistical techniques including probability distribution functions, regression analysis, and curve fitting.

MAE 320. Thermodynamics. 3 Hr. PR: PHYS 111 and MATH 156. Principles of thermodynamics; properties of ideal gases and vapors; first and second laws of thermodynamics; basic gas and vapor cycles; basic refrigeration. (3 hr. lec.)

MAE 321. Applied Thermodynamics. 3 Hr. PR: MAE 320. Applications to mechanical systems of fundamentals from thermodynamics; availability analysis; applied gas and vapor power cycles; applied refrigeration and psychrometry; mixtures of real gases and vapors; combustion; choked flow nozzles. (3 hr. lec.)

MAE 322. Thermal and Fluids Laboratory. 1 Hr. PR: MAE 320. Experiments demonstrating fundamental concepts of thermal-fluid systems; hydrostatics, dynamic pressure forces, dimensional analysis, pipe pressure losses, drag on external bodies, flow measurements devices, engine performance, fan and turbine performance, saturated vapor curve determination. (3 hr. lab.)

MAE 331. Fluid Mechanics. 3 Hr. PR: MATH 251 with grade of C or better and MAE 241. Fluid statics, laminar and turbulent flow of compressible and incompressible fluids, flow measurements, open channel flow, and kinetics of fluids. (3 hr. lec.)


MAE 342. Dynamics of Machines. 3 Hr. PR: MAE 242 and PR or CONC: MATH 261. Analysis of motion and forces in linkages, cams, and gears. Fundamentals of free and forced, undamped and damped vibration of mechanical systems.


MAE 370. Aviation Ground School. 3 Hr. Nomenclature of aircraft, aerodynamics, civil air regulations, navigation, meteorology, aircraft, and aircraft engines. May serve as preparation for private pilot written examinations. (2 hr. lec., 2 hr. lab.) (Not approved as a technical elective.)

MAE 411. Advanced Mechatronics. 3 Hr. PR: MATH 261 with a grade of C or better and MAE 211 and EE 221 and EE 222. Instrumentation and measurements emphasizing systems that combine electronics and mechanical components with modern controls and microprocessors. First and second order behavior, transducers and intermediate devices, measurement of rapidly changing engineering parameters, microcontrollers and actuators. (2 hr. lec., 3 hr. lab.)

MAE 415. Balloon Satellite Project 1. 1 Hr. Student teams propose, design, construct, and test experimental packages, launched as payloads via a weather balloon that is tracked and recovered. Data acquired by the experimental payloads is analyzed.
MAE 417. Balloon Satellite Project 2. 2 Hr. PR: MAE 415. Student teams propose, design, construct, and test complex experimental packages, launched as payloads via a weather balloon that is tracked and recovered. Data acquired by the experimental payloads is analyzed.

MAE 421. Problems in Thermodynamics. 3 Hr. PR: MAE 321 or Consent. Thermodynamic systems with special emphasis on actual processes; problems designed to strengthen the background of the student in the application of the fundamental thermodynamic concepts. (3 hr. lec.)

MAE 423. Heat Transfer. 3 Hr. PR: MATH 261 with grade of C or better and MAE 320. Steady state and transient conduction. Thermal radiation. Boundary layer equations for forced and free convection. (3 hr. lec.)

MAE 424. Applications in Heat Transfer. 3 Hr. PR: MAE 423. Application of basic heat transfer theory and digital computation techniques to problems involving heat exchangers, power plants, electronic cooling, manufacturing processes, and environmental problems. (3 hr. lec.)

MAE 425. Internal Combustion Engines. 3 Hr. PR: MAE 320. Thermodynamics of the internal combustion engine; Otto cycle; Diesel cycle, gas turbine cycle, two- and four-cycle engines, fuels, carburetion and fuel injection; combustion; engine performance, supercharging. (3 hr. lec.)


MAE 427. Heating, Ventilating, and Air Conditioning. 3 Hr. PR: MAE 320 or consent. Methods and systems of heating, ventilating, and air conditioning of various types of buildings, types of controls and their application. (3 hr. lec.)

MAE 430. Microgravity Research 1. 3 Hr. Student team conceives and proposes a unique research experiment, to be flown on NASA microgravity research aircraft. Team also begins design, construction, and testing of apparatus.

MAE 431. Microgravity Research 2. 3 Hr. PR: MAE 430. Student team completes design, construction, and testing of research experiment; that is then flown on NASA microgravity research aircraft. Data required from experiment is analyzed and reported.

MAE 432. Engineering Acoustics. 3 Hr. PR: MATH 261 or consent. Theory of sound propagation and transmission. Important industrial noise sources and sound measurement equipment. Selection of appropriate noise criteria and control methods. Noise abatement technology. Laboratory studies and case histories. (3 hr. lec.)

MAE 433. Computational Fluid Dynamics. 3 Hr. PR: MAE 316 and (MAE 331 or MAE 335) with a grade of C or better in each, or consent. Introduction to modern computational fluid dynamics. Development and implementation of finite-difference schemes for numerical flow solution. Grid generation. Explicit, implicit, and iterative techniques. Emphasis on applications. Validation and verification of solution. (3 hr. lec.)

MAE 434. Experimental Aerodynamics. 2 Hr. PR: MAE 336 and ENGL 102. Aerodynamic testing and instrumentation. Supersonic and low-speed wind tunnel testing including shock waves, aerodynamic forces, pressure distribution on an airfoil and boundary layers. Application of schlieren optics, thermal anemometry and laser doppler velocimetry. (1 hr. lec., 3 hr. lab.)

MAE 435. Experimental Fluid Dynamics 2. 3 Hr. PR: MAE 434. Continuation of MAE 434 with increased emphasis on dynamic measurements. Shock tube/tunnel and subsonic and supersonic measurements. Experiments include optical techniques, heat transfer to models, and viscous flow measurements. Error analysis of test data. (2 hr. lec., 3 hr. lab.)

MAE 436. Applied Aerodynamics. 3 Hr. PR: MAE 335. Chordwise and spanwise airload distribution for plain wings, wings with aerodynamic and geometric twist, wings with deflected flaps, and wings with ailerons deflected. Section induced drag characteristics. (3 hr. lec.)

MAE 437. V/STOL Aerodynamics. 3 Hr. PR: MAE 336. Fundamental aerodynamics of V/STOL aircraft. Topics include propeller and rotor theory, helicopter performance, jet flaps, ducted fans, and propeller-wing combinations. (3 hr. lec.)

MAE 438. Introduction to Gas Dynamics. 3 Hr. PR: MAE 331 or Consent. Fundamentals of gas dynamics, one-dimensional gas dynamics and wave motion, measurement, effect of viscosity and conductivity, and concepts of gas kinetics. (3 hr. lec.)

MAE 439. Hypersonic Gas Dynamics. II. 3 Hr. PR: MAE 336 or Consent. Hypersonic shock and expansion wave relations; hypersonic inviscid flowfields: approximate and numerical methods, blast wave theory; hypersonic boundary layers and aerodynamic heating. (3 hr. lec.)

MAE 446. Mechanics of Composite Materials. 3 Hr. PR: MATH 251 and MAE 243. Fundamental methods for structural analysis of fiber reinforced composites. Particularities of composite applications in design and manufacturing of structural components: performance tailoring, failure criteria, environmental effects, joining and processing. (3 hr. lec.)
MAE 447. Aeroelasticity. 3 Hr. PR: MAE 345. Vibrating systems of single degree and multiple degrees of freedom, flutter theory and modes of vibration, torsional divergence and control reversal. (3 hr. lec.)

MAE 452. Kinematics. 3 Hr. PR: MAE 342 and MATH 261 or consent. Geometry of constrained motion, kinematics synthesis and design, special linkage. Coupler curves, inflection circle, Euler-Savary equation, cubic of stationary curvature and finite displacement techniques. (3 hr. lec.)

MAE 454. Machine Design and Manufacturing. 3 Hr. PR: MATH 261 with a grade of C or better and MAE 342 and MAE 343. Mechanical design of mechanical elements such as shaft systems, bearings, gears, screws, and fastners, clutches and brakes, and flexible drive elements. Design for manufacturability considerations.

MAE 456. CAD and Finite Element Analysis. 3 Hr. PR: MATH 261 with a grade of C or better and MAE 343 and (MAE 342 or MAE 345). Computer-aided design fundamentals, finite element concepts and solution techniques. Exposure to CAD and finite element packages. Design case studies.


MAE 461. Applied Feedback Control. 3 Hr. PR: MAE 460 or consent. Application of automatic control theory. Transfer functions and block diagrams for linear physical systems. Proportional, integral, and derivative controllers. Transient and frequency response using Laplace transformation. (3 hr. lec.)

MAE 462. Design of Robotic Systems. 3 Hr. PR: Consent. Mechanical automation design associated with robotic systems, including economic justification and ethics. Geometric choices and controller specifications for programmable manipulators. Workstation strategies such as CNC and CIM for computer-based flexible manufacturing. (3 hr. lec.)

MAE 465. Flight Mechanics 2. 3 Hr. PR: MAE 365. Fundamental concepts of feedback control system analysis and design. Automatic flight controls, and human pilot plus airframe considered as a closed loop system. Stability augmentation. (3 hr. lec.)

MAE 466. Flight Testing. 3 Hr. PR: MAE 365. Applied flight test techniques and instrumentation, calibration methods, determination of static performance characteristics, and introduction to stability and control testing based on flight test of Cessna Super Sky-wagon airplane. Flight test data analysis and report preparation. (1 hr. lec., 6 hr. lab.)

MAE 467. Flight Simulation. 3 Hr. PR: MAE 365. Fundamental concepts of flight simulation are introduced through interaction with tools of different complexity from simplified linear and non-linear models to a six degrees-of-freedom motion based flight simulator.

MAE 469. Microcomputer Applications in Mechanical Engineering. 3 Hr. PR: MAE 363. Fundamentals of programming and interfacing a microprocessor. Hands-on, hardware oriented. Assembly language and BASIC programming. RAM, EPROM, analog to digital and digital to analog converters, stepper motors, encoders, AC devices. Interfacing project required. (3 hr. lec.)

MAE 470. UAV Design/Build/Fly Competition 1. 1 Hr. PR: Consent. Hands-on applications of concepts learned in other courses to meet specified flight performance and competition criteria. Advanced aerodynamic and material concepts are utilized by an integrated sophomore-junior-senior team.

MAE 471. Principles of Engineering Design. 3 Hr. PR: Penultimate semester. Topics include design problems in mechanical engineering dealing with analytical and experimental methodologies in fluid, thermal, and structural areas, decision-making techniques, optimization, computer-aided design and economic consideration. (6 hr. lab.)

MAE 472. Engineering Systems Design. 3 Hr. PR: MAE 471. Identification and solution of challenging engineering problems through rational analysis and creative synthesis. Planning, designing, and reporting on complex systems on individual and group basis. (6 hr. lab.)

MAE 473. Bioengineering. 3 Hr. PR: MAE 243 or Consent. Introduction to human anatomy and physiology using an engineering systems approach. Gives the engineering student a basic understanding of the human system so that the student may include it as an integral part of the design. (3 hr. lec.)

MAE 474. UAV/Design/Build/Fly Comp. 2. PR: MAE 470. Hands-on applications of concepts learned in other courses to meet specified flight performance and competition criteria. Advanced aerodynamic and material concepts are utilized by an integrated sophomore-junior-senior team.

MAE 475. Flight Vehicle Design. 3 Hr. PR: ENGL 102 and MAE 215 and MAE 365 or consent. Preliminary design of flight vehicles; with regard for performance and stability requirements, considering aerodynamics, weight and balance, structural arrangement, configuration, cost safety, guidance, and propulsion effects. (1 hr. lec., 6 hr. lab.)

MAE 476. Space Flight and Systems. 3 Hr. PR: MAE 316. Introduction to fundamental concepts of space flight and vehicles, emphasizing performance aspects and basic analytical expressions. Common analysis methods and design criteria for launch vehicles, orbital mechanics, atmospheric re-entry, stabilization, thermal, power, and attitude control.
MAE 477. Space Systems Design. II. 3 Hr. PR: MAE 475 or MAE 471. Conceptual and/or preliminary design of space vehicles and/or systems including structures, CAD, orbital mechanics, propulsion, thermal control, life support, power systems, communications, system integration and cost analysis. (1 hr. lec., 6 hr. lab.)


MAE 479. Space Mechanics. 3 Hr. PR: MATH 261 and MAE 242. Flight in and beyond earth's atmosphere by space vehicles. Laws of Kepler and Orbital theory. Energy requirements for satellite and interplanetary travel. Exit from entry into an atmosphere. (3 hr. lec.)

MAE 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

MAE 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


MAE 494. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

MAE 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

MAE 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


MAE 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Management (MANG)

MANG 310. Management of Small Business. 3 Hr. PR: BCOR 370. Focusing on the management of small business, the course is designed both for those seeking employment in small business, and for those entering large organizations which deal with small firms as suppliers, customers, and competitors.

MANG 330. HR Management Fundamentals. 3 Hr. PR: BCOR 370. Fundamental principles and practices related to the procurement, development, maintenance, and utilization of human resources. Focus on areas such as human resource planning, selection training, performance appraisals, compensation, safety and health and labor relations.

MANG 352. Business Applications Programming. 3 Hr. PR: BCOR 330. Provides an understanding of fundamental programming required to develop end-user business applications in an object-oriented, event-driven environment. These skills will be utilized in the Systems Design and Development course.

MANG 353. Advanced Information Technology. 3 Hr. PR: BCOR 330 and MANG 420. Presents the student with a fundamental knowledge of hardware and software technologies, including emerging technologies, focusing on the functionality and management of the technology in a business organization.

MANG 355. Data Communications. 3 Hr. PR: BCOR 330. Provides an overview of the TCP/IP model and related technologies of the data communications corporate infrastructure as well as a survey of the essential tools and strategies for the effective management of business networks.

MANG 356. Network Security. 3 Hr. This course focuses on the managerial and technical aspects of information security in networks. The course covers security issues in information systems, information assurance management and policy, network security planning, technologies, implementation, and security strategy.

MANG 357. Information Ethics. 3 Hr. This course introduces the student to the field of information ethics, including such topics as privacy, accessibility, censorship, intellectual property, accuracy, virtual reality and artificial intelligence.

MANG 360. International Business. 3 Hr. PR: COR 370. The course explores the cultural, economic, and political environments of business. Other topics include globalization, import and export, foreign direct investment, foreign currency exchange, regional economic cooperation, and the multinational enterprise.
MANG 420. Business Information Systems. 3 Hr. PR: BCOR 330 and BCOR 370. Use of EDP for decision making with emphasis on application in the functions of finance, marketing, personnel, accounting, and operations management.

MANG 422. The Individual and the Organization. 3 Hr. PR: BCOR 370. Examination of how the individual, the group, and the organization interact to influence the behavior of the business organization and that of its human resources.

MANG 424. Organizational Theory and Analysis. 3 Hr. PR: BCOR 370. Influences of structure on the behavior and dynamics of the business organization, including emphasis on becoming an effective manager.

MANG 428. Management Science 1. 3 Hr. PR: BCOR 370. Study and application of quantitative methods to business problems in which deterministic conditions prevail.

MANG 429. Management Science 2. 3 Hr. PR: MANG 428. Study and application of quantitative methods to business problems in which probabilistic conditions prevail.

MANG 434. Business Research Methods. 3 Hr. PR: MANG 330 or consent. Research methods and measurement in human resources management; philosophy of science, ethics in research, research design, and analytical methods.

MANG 438. Entrepreneurship. 3 Hr. PR: BCOR 370. The role of the entrepreneur in business and society; includes an analysis of the individual entrepreneur, and investigates the nature and problems of establishing a new business enterprise.

MANG 440. Practicum in Small Business. 3 Hr. PR: BCOR 370. A practical training ground in the identification and solution of small business problems. Through interaction with the business community, students are exposed to the opportunities and difficulties of small business entrepreneurship.

MANG 450. Systems Analysis. 3 Hr. PR: BCOR 330. Emphasizes the systems approach, concentrating on the first half of the systems development cycle: feasibility studies, cost/benefit analysis, organizational analysis, assessment of information needs, and project planning. Effective teamwork and communications are stressed.

MANG 452. Systems Design and Development. 3 Hr. PR: MANG 351 and MANG 352 and MANG 450. Follows the Systems Analysis course with the second half of the systems development cycle; user interface design, data design, process design, system specifications, use of software development tools, documentation, testing, conversion, and maintenance.

MANG 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

MATH 90. Developmental Arithmetic. 3 Hr. A course designed to strengthen the student's skills in arithmetic. The course is usually taken by students who wish to take MATH 121 or MATH 183 but have not passed the WVU Arithmetic Skills Test.

MATH 121. Introductory Concepts of Mathematics, I, II. 3 Hr. (Designed for non-science majors who do not need the techniques of mathematics for other coursework in their programs.) Topics in modern mathematics.
MATH 126. College Algebra. I, II, S. 3 Hr. PR: Two units of algebra, one unit of geometry, and satisfactory performance on departmental placement examination or successful completion of the pre-college algebra workshop or its equivalent. (This course is not open to students who have credit for MATH 129 or its equivalent.) Review of the real number system and algebraic expressions, equations, inequalities, graphing, functions, polynomials. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

MATH 126A. College Algebra 5-Day. 3 Hr. PR: Two units of algebra, one unit of geometry, and satisfactory performance on departmental placement examination or successful completion of the pre-college algebra workshop or its equivalent. (This course is not open to students who have credit for MATH 129 or its equivalent) Review of the real number system and algebraic expressions, equations, inequalities, graphing, functions, polynomials. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

MATH 126B. College Algebra 4-Day. 3 Hr. PR: Two units of algebra, one unit of geometry, and satisfactory performance on departmental placement examination or successful completion of the pre-college algebra workshop or its equivalent. (This course is not open to students who have credit for MATH 129 or its equivalent.) Review of the real number system and algebraic expressions, equations, inequalities, graphing, functions, polynomials. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

MATH 126C. College Algebra 3-Day. 3 Hr. PR: Two units of algebra, one unit of geometry, and satisfactory performance on departmental placement examination or successful completion of the pre-college algebra workshop or its equivalent. (This course is not open to students who have credit for MATH 129 or its equivalent.) Review of the real number system and algebraic expressions, equations, inequalities, graphing, functions, polynomials. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

MATH 128. Plane Trigonometry. I, II. 3 Hr. PR: Two units of algebra, one unit of geometry and satisfactory performance on departmental placement examination or successful completion of the pre-college algebra workshop or its equivalent, or concurrently enrolled in MATH 126 (This course is not open to students who have credit for MATH 129 or its equivalent.) Trigonometric functions, identities, vectors, logarithms, complex numbers, and trigonometric equations. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

MATH 129. Pre-Calculus Mathematics. I, II. 4 Hr. PR: Two units algebra and one unit geometry, and satisfactory performance on departmental placement test. Not open to students who have credit for the equivalent of either MATH 126 or 128.) A treatment of algebra, analytic geometry, and trigonometry. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

MATH 150. Introduction to Calculus. I, II. 3 Hr. PR: MATH 126 or MATH 129 or MATH 124 or consent. For students in other disciplines needing calculus for applications. Limits of sequences and functions, continuity, derivatives, and integrals of polynomials, rational functions, and exponential and logarithmic functions, partial derivatives, maxima and minima. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

MATH 152. Calculus 1a with Precalculus. 4 Hr. Introduction to limits, continuity, derivatives, and applications of derivative.

MATH 153. Calculus 1b with Precalculus. 4 Hr. PR: MATH 152. Introduction to applications of derivatives, antiderivatives and definite integrals.

MATH 154. Calculus 1c with Precalculus. S. 4 Hr. PR: MATH 153. Introduction to applications of derivatives, antiderivatives and definite integrals.

MATH 155. Calculus 1, I, II, S. 4 Hr. PR: Two units algebra, one unit geometry, 1/2 unit trigonometry, and satisfactory performance on departmental placement test or (MATH 126 and Math 128) or MATH 129. Introduction to limits, continuity, derivatives, antiderivatives, definite integrals, and applications of the derivative.


MATH 170. Discrete Mathematics. 3 Hr. PR: CS 111 or MATH 155. Traditional mathematics such as functions, relations, set theory, and graph theory; applications to computer science; switching circuits, Boolean algebra, and Karnaugh maps. Equiv. to CS 220. (Not offered on a regular basis.)

MATH 180. Symbolic Logic 2. I, II. 3 Hr. PR: PHIL 260. Continuation of PHIL 260, covering relational logic and identity. Additional topics may include alternative methods and systems of logic such as proof trees, axiom systems, alternative operators, modal and many-valued logics, and set theory. (Not offered on a regular basis.)

MATH 183. Introduction to Mathematics for Elementary Teachers 1. 3 Hr. PR: Students must score 40 or more on the WVU Arithmetic Skills Test or MATH 90. (For elementary education majors only.) Structure of the number systems, techniques of arithmetic computation derived from the properties of the real number system.

MATH 184. Introduction to Mathematics for Elementary Teachers 2. 3 Hr. PR: MATH 183. (For elementary education majors only.) Techniques of arithmetic computation derived from the properties of the real number system, logic, and informal geometry.

MATH 218. History of Mathematics. I. 3 Hr. PR: MATH 155. Development of mathematics through calculus, with emphasis on mathematical theories and techniques of each period and their historical evolution. (Not offered on a regular basis.)
MATH 222. Numerical and Symbolic Methods in MATH/STAT. I. 3 Hr. PR: MATH 156. Data manipulation, data visualization in two and three dimensions including animation, scientific programming using a high level language, symbolic manipulators and other packages. Applications to problems in mathematics and statistics. (Equiv. to STAT 222.)

MATH 231. Algebra and Geometry for Elementary Teachers. I, II 3 Hr. PR: MATH 126. (For elementary education majors only.) Algebra, real numbers, and geometry applied to graphing, problem solving, probability and statistics, calculations, and the computer.

MATH 238. Modern Geometry for Teachers. I. 3 Hr. PR: MATH 156 or consent. (For prospective high school mathematics teachers.) Foundations of geometry. Special topics from Euclidean, projective, and non-Euclidean geometries.

MATH 251. Multivariable Calculus. I, II, S. 4 Hr. PR: MATH 156. Introduction to solid analytic geometry, vector algebra, matrix algebra, calculus of several variables.


MATH 280. Mathematical Logic 1. I. 3 Hr. PR: PHIL 260 or consent. The axiomatic method, “naive,” and axiomatic set theory, Russell’s Paradox, infinity and uncountability, the “reduction” of mathematics to set theory, introduction to the consistency and completeness of logic, and Gödel’s proof of the incompleteness of arithmetic. (Equiv. to PHIL 360.) (Not offered on a regular basis.)

MATH 283. Introduction to the Concepts of Mathematics. I, II. 3 Hr. PR: MATH 156 or consent. Elementary logic, basic theory, relations and functions, equivalence relations and decomposition of sets, order relations, cardinality. Emphasis on learning to prove theorems.

MATH 293. Special Topics. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MATH 293A. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

MATH 331. Introduction to Mathematics for the Elementary Teacher 1. I, II. 3 Hr. PR: MATH 126. (Not open to students who have credit for MATH 231.) (For in-service elementary mathematics teachers.) Systems of numeration; sets, relations, binary operations, the algebraic structure of various number systems; the notions of length, area, and volume; coordinate geometry.

MATH 332. Introduction to Mathematics for the Elementary Teacher 2. I, II. 3 Hr. PR: MATH 126. (Not open to students who have credit for MATH 231.) (For in-service elementary mathematics teachers.) Systems of numeration; sets, relations, binary operations, the algebraic structure of various number systems; the notions of length, area, and volume; coordinate geometry.

MATH 341. Introduction to Algebraic Structures. II. 3 Hr. PR: MATH 283 or consent. A study of groups, rings, and fields together with their substructures, quotients and products, morphisms; the fundamental homomorphism theorems.

MATH 343. Introduction to Linear Algebra. I. 3 Hr. PR: MATH 156. Introduction to vector spaces as an algebraic system. Emphasis on axiomatic development and linear transformation. Examples from geometry and calculus.


MATH 373. Introduction to Cryptography. 3 Hr. PR: MATH 155. Introduces students to the art of confidential communication the mathematical background and the practical skills in making and breaking secret codes.


MATH 378. Discrete Mathematics. II. 3 Hr. PR: MATH 283. Permutations, combinations, binomial theorem, inclusion-exclusion formula, recurrence relations, generating functions, elementary graph theory (connectivity, paths, circuits, trees, vertex and edge coloring, graph algorithms) matching theory, and discrete optimization. (Equiv. to CS 426.)

MATH 381. Topology. II, S. 3 Hr. PR: MATH 283 or consent. Introduction to metric and topological spaces. Topics include: continuity, convergence, separation, compactness, and connectedness.
MATH 420. Numerical Analysis 1. I, II. 3 Hr. PR: MATH 251 and (either a programming language or MATH 222.) Computer arithmetic, roots of equations, interpolation, Gaussian elimination, numerical integration and differentiation. Numerical solution of initial value problems for ordinary differential equations. Least square approximations. (Equiv. to CS 460.)

MATH 421. Numerical Analysis 2. II. 3 Hr. PR: (MATH 420 or CS 460) and (MATH 441 or MATH 343). Solutions of linear systems by direct and iterative methods. Calculation of eigenvalues, eigenvectors, and inverses of matrices. Applications to ordinary and partial differential equations.

MATH 441. Applied Linear Algebra. I, II, S. 3 Hr. PR: MATH 251. Matrix algebra with emphasis on algorithmic techniques and applications to physical models. Topics include solution of large systems of equations, orthogonal projections and least squares, and eigenvalue problems.


MATH 455. Advanced Real Calculus. S. 3 Hr. PR: MATH 261. Limits, series, metric spaces, uniformity, integrals.

MATH 456. Complex Variables. II. 3 Hr. PR: MATH 261. Complex numbers, functions of a complex variable; analytic functions; the logarithm and related functions; power series; Laurent series and residues; conformal mapping and applications.

MATH 464. Deterministic Math Modeling. 3 Hr. PR: MATH 222 and MATH 261 and MATH 420; or consent. An introduction to mathematical modeling of deterministic systems. Topics include growth and decay models, equilibrium models, optimal control and utility, and model validation. Applications from chemistry, physics, biology, economics, and the environment will be considered.


MATH 469. Seminar in Applied Mathematics. I, II. 1-12 Hr. PR: Consent. Selected topics in applied mathematics.

MATH 480. Mathematical Logic 2. 3 Hr. PR: MATH 280 or PHIL 360.

MATH 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

MATH 491. Professional Field Experience. I, II, S. 1-18 Hr PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


MATH 494. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

MATH 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

MATH 495A. Independent Study. 1-6. Faculty supervised study of topics not available through regular course offerings.

MATH 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

MATH 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

McNair Research Internship (MCNR)

MCNR 470. McNair Research Internship. 1 Hr. PR: Current WVU McNair scholars. This course familiarizes scholars with the process of preparing a research project and applying for graduate school.

MCNR 471. McNair Research Internship 2. 1 Hr. PR: MCNR 470 and current WVU McNair scholars. This course familiarizes scholars with the process of completing a research paper. Students will make an oral presentation of completed research at the end of the semester.
Multidisciplinary Studies (MDS)
MDS 123. Introduction to GLBT Studies. 3 Hr. An introduction to gay, lesbian, bisexual, and transgender studies that combines the disciplines of anthropology, biology, history, literature, philosophy, psychology, and sociology.

MDS 128. Introduction to Technology and Society I. 3 Hr. (May be credited to University LSP Cluster A or C). A team taught introduction to technology (its nature and goals) and society (its nature and goals) in the victoria era.

MDS 129. Introduction to Technology and Society 2. I, II. 3 Hr. PR: MDS 128. (May be credited to University LSP Cluster B.) Continuation of MDS 128.

MDS 130. Life Choices. 3 Hr. Students will examine lifestyle choices typically dictated by customs that are usually made unconsciously without research. Areas covered are attitude, relationship, physical lifestyle, health and spiritual choices. The class consists of lectures and requires participation.

MDS 199. Orientation to MDS. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

MDS 220. Introductory African and African-American Studies. 3 Hr. An interdisciplinary introduction to the histories, economics, cultural and artistic heritages; political and social formations of Africans and African-Americans; focusing on the relationships between the two experiences.


MDS 301. Creativity, Discovery, Innovation. 3 Hr. Creativity as process; critical thinking and problem solving as enhancements of creative imagination; relationships of creativity to society and technology.

MDS 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

MDS 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

MDS 492. Directed Study. I, II, S. 1-3 Hr. Directed study, reading, and or research.


MDS 494. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

MDS 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

MDS 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


MDS 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Microbiology and Immunology (MICB)
MICB 26. Microbiology II. (For students in nursing and dental hygiene programs.); All students must have consent of instructor. I. 3 Hr. PR: CHEM 11, and CHEM 12 or equiv.

MICB 190. Teaching Practicum. 1-3 Hr.

MICB 191. Special Topics. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

MICB 194. Professional Field Experience. 1-18 Hr.

MICB 195. Seminar. 1-3 Hr.

MICB 196. Thesis. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student’s reports, thesis, or dissertations. (Grading may be S/U.)

MICB 197. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

MICB 200. Medical Microbiology. 3 Hr. PR: CHEM 111 and CHEM 112.
MICB 220. Pathogenic Microbiology. (For pharmacy students.) 4 Hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.

MICB 223. Microbiology. (For medical technology students; other students with consent.) II. 5 Hr. PR or Conc.: Biochemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.

MICB 224. Parasitology. (For medical technology students; other students with consent.) II. 4 Hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology and laboratory diagnosis.


MICB 302. Microbiology. (For dental students only.) I. 5 Hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.

MICB 310. Structure and Activities of Microorganisms. II. 2-7 Hr. PR or Conc.; Biochemistry, consent. Molecular biology of E. coli and other selected organisms.

MICB 311. Prin Infection and Resist. 1-5 Hr.

MICB 317 A-Z. Special Problems in Microbiology. I, II, S. 1-7 Hr. Graduate Immunology and Virology. I. 3 hr. PR: Consent. Parasitology laboratory. II. 1 Hr. PR: Consent. B. Graduate Pathogenic Microbiology. II. 3 Hr. PR: Consent. C. Special Problems in Post Graduate Dental Microbiology. II. 4 Hr. PR: Consent.

MICB 317A . Special Problems in Microbiology. I, II, S. 1-6 Hr. PR: Consent. Parasitology laboratory. II. 1 Hr. PR: Consent.

MICB 323. Medical Parasitology. 5 Hr. (For medical technology students; other students with consent.) Biochemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.

MICB 325. Medical Mycology. 4 Hr.

MICB 327. Parasitology. 2 Hr. (For medical technology students; other students with consent.) Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.


MICB 399. Special Topics in Microbiology, Cell Biology. II. 3 Hr. PR: Biochemistry; 1 yr. undergraduate biology; consent. Lectures in selected areas of cell biology.

MICB 490. Teaching Practicum. I, II. 1-3 Hr. PR: Consent. Supervised practice in college teaching of microbiology. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on Assistantships to gain teaching experience. Grading will be S/U.

MICB 491 A-Z. Advanced Topics. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

MICB 492. Directed Study. I, II, S. 1-6 hr. Directed study, readings, and/or research.

MICB 493 A-Z. Special Topics. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

MICB 494 A-Z. Seminar. 1-6 Hr. PR: Consent. Seminars arranged for advanced graduate students.

MICB 495. Graduate Seminar. I, II, S. 1 hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

MICB 496. Independent Study. I, II. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

MICB 497. Research. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.)

MICB 498. Thesis. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student’s reports, thesis, or dissertations. Grading may be S/U.
MICB 499. Graduate Colloquium. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University’s facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department’s Graduate Colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. Grading is S/U; colloquium credit may not be counted against credit requirements for master’s programs.

Military Science (MILS)

MILS 101. Military Science. 2 Hr. The organization and development of the U.S. Army and ROTC from its inception to the present. The structure and role of the U.S. defense establishment with emphasis on the broad range of America civil-military relations.

MILS 201. Military Science. 2 Hr. Introduction to basic leadership and management with emphasis on the fundamental concepts and skills required of today’s citizen-soldier.

MILS 202. Military Science. 2 Hr. Continued instruction in basic fundamentals of leadership and management, with emphasis on the military application of these fundamentals. Introduction to small unit tactics and organization.

MILS 301. Military Science. 3 Hr. PR: Basic course or equiv. (Equivalent credit may be granted by the WVU Director of Admissions and Records and the professor of Military Science on the basis of prior military services, or ROTC training other than courses in Military Science taken at WVU.) Examines the requirements for military training and the psychological and technical aspects of effective instruction. Additionally, the military career system and the occupational specialties options available are reviewed.

MILS 401. Military Science. 3 Hr. PR: MILS 301 and MILS 302 or Consent. Stresses the responsibilities of an officer and affords leadership experience as a cadet leader. Military staff procedures, military law, and military organizations, which prepare the student for future services, are studied.

MILS 402. Military Science. 3 Hr. PR: MILS 401 or Consent. Advanced leadership techniques, unit operations, and personnel management problems are discussed in seminars. The military role in United States foreign policy and world affairs is examined.


MILS 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

MILS 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Mining Engineering (MINE)

MINE 201. Mine Surveying. I. 3 Hr. CONC: MINE 261. Principles of surveying; field experience in underground and surface surveying with map work and calculations.

MINE 205. Underground Mining Systems. II. 3 Hr. PR: GEOL 101. Underground mining methods and equipment for bedded deposits and ore bodies; description and selection of mining methods, equipment requirements and selection, equipment design, and operational analysis.

MINE 206. Surface Mining Systems. II. 4 Hr. PR: GEOL 101. Surface mining methods, surface mining equipment, explosives and blasting design fundamentals, and slope stability.

MINE 261. Engineering CAD. 2 Hr. PR: ENGR 102 and CONC: MINE 201. Engineering CAD concepts and techniques; implementing applications of engineering computer aided design for engineering graphics and plant design; introduction of geometry and calculation of engineering works.


MINE 304. Mining Methods for Vein Deposits. I. 3 Hr. PR: ENGR 102 and GEOL 342 and MATH 156. Methods and systems of mining other than flat seams. Emphasis on selection of methods in relation to cohesive strength of ore bodies and their enclosing wall rocks. Mining of anthracite included.

MINE 305. Coal Mining. I. 3 Hr. PR: Junior standing or Consent. (Not open to mining engineering students.) Introduction to elements of coal mining.

MINE 306. Mining Exploration and Valuation. 3 Hr. PR: STAT 211. Mineral exploration and reserve estimation, statistical quality control, risk management, and engineering economy concepts applied to mineral deposits, including deprecitation and depletion.

MINE 324. Special Subjects for Mining Engineering. I, II. 1-6 Hr. PR: Senior or Graduate standing or Consent. Special problems in mining engineering, including choices among operations research, mine systems analysis, coal and mineral preparation, and coal science and technology.
MINE 327. Coal Preparation. 4 Hr. PR: MATH 156 and CHEM 116. Coal formation, petrography and characteristics; principles of coal benefication, washability analysis and cooking; colloid characteristics and flotation; unit operations of concentration, flotation, agglomeration, dewatering and tailings disposals.

MINE 331. Mine Ventilation. II. 3 Hr. PR: MINE 205. Engineering principles, purposes, methods, and equipment applied to the underground environmental control including ventilation, illumination, and dust and noise control.

MINE 342. Mine Health and Safety. II. 3 Hr. PR: MINE 205 and MINE 206. The nature of the federal and state laws pertaining to coal mine health and safety; emphasis will be placed on achieving compliance through effective mine planning, design, and mine health and safety management.

MINE 343. Industrial Safety Engineering. I. 3 Hr. PR: Junior standing or Consent. Problems of industrial safety and accident prevention, laws pertaining to industrial safety and health, compensation plans and laws, and industrial property protection.


MINE 382. Mine Power Systems. 3 Hr. PR: PHYS 112 and MINE 205 and MINE 206 or consent. Comprehensive study of mine electrical power systems from theory to practice, covering the vital aspects that go into planning and designing a mine power system.

MINE 407. Longwall Mining. II. 3 Hr. PR: MINE 205. Elements of longwall mining including panel layout and design considerations, strata mechanics, powered supports, coal cutting by shearer or plow, conveyor transportation, and face move.


MINE 427. Coal Preparation. 4 Hr. PR: CHEM 115 and MATH 251 and MINE 261. Coal formation and characteristics; principles of coal benefication, washability analysis; colloid characteristics and flotation, unit operations for concentration, flotation, dewatering, material handelings, and mass balances.


MINE 471. Mine and Safety Management. II. 3 Hr. PR: MINE 205 and MINE 206. Economic, governmental, social, regulatory cost, labor, environmental, and safety aspects of mining as related to the management of a mining enterprise.

MINE 480. Multidisciplinary Team Project. 1 Hr. Mining engineering designs often need to consider constraints from other engineering/non-engineering fields. This course provides a multidisciplinary team working environment for mining students to work with a selected non-mining major on a design project.

MINE 481. Mine Plant Design. II. 3 Hr. PR: Senior standing. Layout, analysis and detailing of the major mine installations, and support facilities. Locations include: the surface plant, shaft and slope stations, section centers. Systems dealt with are bulk handling, power, ventilation, supplies, water, and personnel.

MINE 482. Mine Design. II. 4 Hr. PR: Senior standing, final semester. Comprehensive design problem involving underground mining developments, surface plant or both, as selected by the student in consultation with instructor. Preparation of a complete report on the problem required, including drawings, specifications, and cost analysis.

MINE 483. Mine Design-Exploration Mapping. 2 Hr. PR: MINE 261 and PR or CONC: MINE 306 and Senior Standing. Student and instructor select a mineral or coal deposit for the capstone mine design project. Geologic, demographic, quality, and market data are integrated with computer mapping software into a map set and Exploration Report.

MINE 484. Mine Design-Report. 4 Hr. PR/CONC: MINE 411 and PR: MINE 483 and Senior Standing. Capstone mine design project report and presentation based on the mineral or coal reserve characterized in MINE 483. Includes an integrated mine plan, schedule, equipment selection, processing plant, mine services, product description and engineering economics.

MINE 485. Mine Systems Design. I. 3 Hr. PR: MINE 205 and MINE 206 or Consent. Each student selects and designs a mine subsystem under specified conditions, including extraction, transportation, ventilation, roof control, exploration, plant design, surface facilities, etc. (2 hr. lec., 1 hr. lab.)
MINE 486. Fire Control Engineering. II. 3-4 Hr. PR: Senior standing. Aspects involved in the control from fire, explosion, and other related hazards. Protective considerations and building design and construction. Fire and explosive protection organization including fire detection and control. 3 Hr. lec. and/or 3 Hr. lab.

MINE 205 and MINE 206 or Consent. Each student selects and designs a mine subsystem under specified conditions, including extraction, transportation, ventilation, roof control, exploration, plant design, surface facilities, etc. (2 hr. lec., 1 hr. lab.)

MINE 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

MINE 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

MINE 493 A-Z. Special Topics. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

MINE 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

MINE 496. Senior Thesis. 1-3 Hr. PR: Consent.

MINE 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Marketing (MKTG)

MKTG 325. Marketing Research. 3 Hr. PR: BCOR 350. Scientific approach to the solution of marketing problems with emphasis on research methods and techniques.

MKTG 315. Consumer Behavior. 3 Hr. PR: MKTG 310. The consumer decision process in a marketing framework. Emphasis on psychological and sociological concepts which influence the decision process.

MKTG 320. Personal Selling. 3 Hr. PR: BCOR 350. Deals with interpersonal communication, influencing, and persuasion processes designed to satisfy customer and company needs; stresses the structure of sound sales presentations through lectures, persuasive presentations, and appraisal and correction of common selling errors.

MKTG 330. Distribution Channels. 3 Hr. PR: BCOR 350. Management of channel systems with emphasis on retail distribution, channel choice, strategies, control, and optimization within the context of role, power, conflict, and communications.

MKTG 340. Promotion Management. 3 Hr. PR: BCOR 350. An analysis of the promotional mix options; advertising; personal selling; and sales promotion, and the integration of these options into the marketing mix.

MKTG 350. Product and Price Policies. 3 Hr. PR: BCOR 350. Deals with the company’s product offering as economic and marketing variables influencing product’s price; stress on determination of product and price objectives, planning, implementation, and evaluation of results.

MKTG 380. Integrated Promotions. 3 Hr. PR: BCOR 350. Marketing promotions can dramatically influence the relative success of firms and their brands. As such, we seek to understand the processes and approaches that organizations use in developing and sustaining effective promotional strategies.

MKTG 410. Retail Management. 3 Hr. PR: BCOR 350. The organization and operating environment of retail firms. Special emphasis placed on consumer market segmentation and the marketing variables of merchandise mix, effective pricing, store location, and communication with suppliers and consumers.

MKTG 420. Sales Management. 3 Hr. PR: BCOR 350. Concentrates on the managerial responsibilities of sales managers for directing, motivating, and controlling a sales force plus the techniques of selling, including objections and closing.

MKTG 430. Business Logistics Management. 3 Hr. PR: MKTG 330. Examination of transportation, warehousing, materials handling, containerization, inventory control, purchasing, and warehouse location. Significant use made of problem solving with analytical tools.

MKTG 440. Export Management. 3 Hr. Student teams work directly with participating companies to develop export business plans for specific products and specific countries.

MKTG 460. Business to Business Marketing. 3 Hr. PR: BCOR 350. A study of marketing to three classes of customers: the commercial market, the institutional market, and government agencies.

MKTG 465. Focal Points in Marketing. 1-3 Hr. PR: BCOR 350. In-depth study of specialized marketing subjects, e.g., franchising, tourism, packaging, or product development. (Each subject is self-contained, spans one-third of a semester, and is valued at 1 credit hour.)
MKTG 470. Marketing Management. 3 Hr. PR: BCOR 350 and MKTG 310 and MKTG 315, and 6 hours of marketing or Consent. Simulation, through live and written case study, should sharpen skills as the student makes analytical evaluations of marketing problems.

MKTG 480. Services Marketing. 3 Hr. PR: BCOR 350 plus 4 MKTG courses. Services marketing gives students an appreciation of the challenges of marketing and a managing services and strategies for addressing these challenges. The course features a combination of lectures, in class exercises and projects (including class presentations).

MKTG 485. Global Marketing. 3 Hr. PR: BCOR 350 plus six additional hours in marketing. Evaluation and analysis of marketing strategies in a global environment; examination of the relationships between international buyer behavior and the elements of the marketing mix.

MKTG 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

MKTG 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

MKTG 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MKTG 494 A-Z. Seminar. 1-6 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

MKTG 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

MKTG 496. Senior Thesis. 1-3 Hr. PR: Consent.

MKTG 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Machinist Technology (MT)
MT 105. Industrial Safety and Environmental Protection. 2 Hr. The course is designed to develop safe workplace practices to ensure individual protection, the protection of others, and the environment. The application of the requirements and guidelines in accordance with the Occupational Safety and Health Act (OSHA) or Environmental Protection Agency (EPA) will be demonstrated throughout the course.

MT 121. Introduction to Machinery. 4 Hr. This course is a hands on lab to acquaint the students with the machinery and the industrial environment. This is the application of skills and knowledge of the measurement course and the tools that the machinist will be expected to apply to his/her daily task.

MT 136. Mathematics for Machine Technology 1. 3 Hr. The course covers arithmetic and algebraic concepts such as fractions, decimals, metric system, formulas, ratio and proportion; principles and propositions of geometry pertaining to lines, circles, triangles, and polygons.

MT 137. Mathematics for Machine Technology 2. 3 Hr. Continuation of MT 136.

MT 200. Blueprint Reading. 3 Hr. Designed to develop the knowledge, abilities, and skills to use standard and GDT orthographic blueprints as required in a machine shop.

MT 205. Measurement in Machining. 3 Hr. Designed to develop the knowledge, abilities, and skill to use measurement instruments necessary to the machine tool industry.

MT 216. Metalworking Theory and Application 1. 4 Hr. This course is designed to produce an entry-level machinist with skills to be productive. Course includes awareness of safety, concern for fellow workers, and the ability and willingness to work with fellow team members. In addition to classroom time, students spend a minimum of 120 hours in machine technology lab for skill development.

MT 217. Metalworking Theory and Application 2. 4 Hr. Continuation of MT 216.

MT 218. Metalworking Theory and Application 3. 4 Hr. Continuation of MT 217.


MT 220. Introduction to Computer Aided Design. 4 Hr. Introduction to computer aided drafting. Topics include construction and editing tools; templates and plotting; editing with GRIPS; solid modeling, assembly, and editing; blueprint reading; SI metric system; welding drawing; and ge

MT 224. Technical Specialization 1. 3 Hr. This course is the application of turning, milling, and drilling with emphasis on specific types of machining.
MT 225. Technical Specialization 2. 3 Hr. Continuation of MT 224.

MT 234. NIMS Credentialing 1. 3 Hr. This course is designed to provide students with the necessary knowledge and skills required to achieve credentialing through the National Institute for Metalworking Skills (NIMS).

MT 235. NIMS Credentialing 2. 3 Hr. Continuation of MT 234.

MT 289. Manufacturing Technology Internship. 6 Hr. Students receive work assignments in approved business and industry settings as the final phase in developing their skills.

**Medical Technology (MTEC)**

MTEC 100. Medical Technology. 1 Hr. Introduction to the profession of medical technology and the clinical laboratory specialties. (Pass/Fail grading only.)

MTEC 101. Medical Technology 2. II. 1 Hr. Continuation of MTEC 100.

MTEC 200. Medical Technology Terminology. 1 Hr. General medical and basic medical technology terminology.

MTEC 201. Basic Medical Technology. 1 Hr. Basic medical technology laboratory techniques and professional issues related to medical technology. (Course will be graded Pass/Fail only.)

MTEC 302. Laboratory Math, Quality Control, Computers. 2 Hr. Lectures and practice sessions in laboratory mathematics, techniques, and calculations in quality control, quality assurance. Computer acquisition and evaluation.

MTEC 310. Clinical Laboratory Mycology. 1 Hr. How to isolate and identify the more commonly encountered pathogenic fungi as well as those fungi frequently seen as laboratory contaminants. The course will include basic taxonomy, isolation procedures, and identifying characteristics.

MTEC 329. Clinical Chemistry 1. 1 Hr. Lectures in clinical chemistry analysis, clinical significance, and implications of diagnosis.

MTEC 381. Research and Educational Methodology. 2 Hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.

MTEC 391. Research, Educational Methodology. 2 Hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.

MTEC 400. Orientation. No credit. (For senior students). Principles and practices of medical technology in relation to the hospital and clinics. (Pass-Fail grading only).

MTEC 401. Phlebotomy. 1 Hr. PR: Enrollment in Medical Technology Program, MTEC 300 and MTEC 301. Clinical laboratory practice, including venipuncture, finger sticks, and heel sticks; isolation, universal precaution and other safety techniques are included.

MTEC 402. Rural Health Practicum. 1 Hr. PR: Senior Year MT Program. Enrichment rotations in rural settings in West Virginia. Grading will be Pass/Fail.

MTEC 403. Community Service Practicum. 1 Hr. PR: Senior year MT Program. Students will spend time performing community service projects. Grading will be Pass/Fail.

MTEC 404. Forensic Quality Assurance. 1 Hr. PR: Student currently enrolled in FIDP. Quality assurance in a laboratory setting to include quality control, quality assurance, and management techniques necessary to have an accredited laboratory.

MTEC 420. Immunohematology and Blood Banking. 3 Hr. Lectures on immunohematology and blood banking theory and practice.

MTEC 421. Immunohematology and Blood Banking Laboratory. Arranged. 3 Hr. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.

MTEC 430. Clinical Chemistry 2. 3 Hr. PR: MTEC 329. Continuation of MTEC 329, includes laboratory practice in methods of measurement.

MTEC 431. Clinical Chemistry Laboratory. 3 Hr. PR: MTEC 329 and MTEC 420. Application of clinical chemistry principles to laboratory medicine, to include routine and specialized procedures, specimen and result evaluation, and problem-solving.

MTEC 440. Clinical Hematology. 3 Hr. Lectures in hematologic theory and practice, including coagulation and body fluids laboratory.
MTEC 441. Clinical Hematology Laboratory. 3 Hr. PR: MTEC 440. Application of hematological principles to laboratory medicine, including coagulation, urinalysis, and body fluids. Emphasis on routine and specialized procedures, evaluation, and problem solving.

MTEC 450. Clinical Microbiology. 3 Hr. Presentation and discussion of methodologies employed in the processing of clinical microbiology specimens, isolation, and identification of clinically significant microorganisms, and determination of antimicrobial susceptibilities with laboratory.

MTEC 451. Clinical Microbiology Laboratory. 3 Hr. PR: MTEC 450. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms, processing of specimens and antibiograms.

MTEC 460. Clinical Laboratory Instrumentation. 2 Hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.

MTEC 465. Clinical Laboratory Management. 2 Hr. Laboratory organization and principles of laboratory management.

MTEC 466. Laboratory Management Practicum: 1 Hr. PR: MTEC 465. Problem based learning and clinical laboratory management rotation. Application of management learned in MTEC 465. (Course will be graded Pass/Fail.)

MTEC 470. Clinical Microscopy. 1 Hr. PR: Senior standing in Medical Technology or consent. The analysis of body fluids (urine, fluids, etc.) for abnormalities.

MTEC 472. Urinalysis and Body Fluids Lab. 1 Hr. CoReq: MTEC 470 or consent. Clinical laboratory principles and procedures used in analysis of urine and body fluids.

MTEC 475. Medical Relevance. 2 Hr. Case studies of pathologic entities encountered in the clinical laboratory and a review of clinical laboratory science. Students will complete and give an oral presentation of the Capstone experience and pass a comprehensive examination.

MTEC 480. Clinical Immunology. 2 Hr. Open only to MTEC Students. Lectures in principles of immunological and serological procedures, immunological diseases, and significance of laboratory methods for diagnosis.

MTEC 481. Clinical Immunology Laboratory. 1 Hr. PR: Senior year MT Program. Clinical laboratory practice in immunological procedures. Emphasis on basic serological techniques, protein analysis, molecular methods, and tissue typing.

MTEC 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

MTEC 491. Professional Field Experience. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

MTEC 493. Special Topics. 1-6 Hr.

MTEC 493A. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MTEC 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

MTEC 495. Independent Study. 1-6 Hr.

MTEC 496. Senior Thesis. 1-3 Hr. PR: Consent.

MTEC 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Music (MUSC)
MUSC 100. Band: Wind Symphony. I, II. 0-2 Hr. (May be repeated for credit.)

MUSC 100A. Band: Concert Band. I, II. 0-2 Hr. (May be repeated for credit.)

MUSC 100B. Band: Varsity Band. I, II. 0-2 Hr. (May be repeated for credit.)

MUSC 100C. Band: Symphonic Band. I, II. 0-2 Hr. (May be repeated for credit.)

MUSC 100D. Band: Marching Band. I, II. 0-2 Hr. (May be repeated for credit.)

MUSC 101. Glee Club. 1 Hr.

MUSC 102. University Choral Union. I, II. 0-1 Hr. (May be repeated for credit.)
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Weight</th>
<th>Prerequisites</th>
<th>Notes</th>
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<tbody>
<tr>
<td>MUSC 103</td>
<td>Orchestra. I, II. 0-2 Hr. (May be repeated for credit.)</td>
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<td>University-Community Symphony Orchestra, Opera Orchestra, Musical Theatre Orchestra.</td>
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<tr>
<td>MUSC 104</td>
<td>Introduction to Opera Theatre. I, II. 0-4 Hr. (May be repeated for credit; max. 16 Hr.) PR: Consent. Practical work in all aspects of lyric theatre production. Development of lyric theatre stage technique through movement studies, performance in major and minor roles and operatic scenes, and advanced production techniques.</td>
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<td>MUSC 105</td>
<td>University Choir. I, II. 0-2 Hr. (May be repeated for credit.)</td>
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<td>MUSC 105A</td>
<td>University Choir: Concert. I, II. 0-2 Hr. (May be repeated for credit.)</td>
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<td>MUSC 106</td>
<td>Applied Music: Bassoon. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 107</td>
<td>Applied Music: Cello. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 108</td>
<td>Applied Music: Clarinet. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<tr>
<td>MUSC 109</td>
<td>Applied Music: Euphonium. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<tr>
<td>MUSC 110</td>
<td>Applied Music: Flute. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement is required.</td>
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<td>MUSC 111</td>
<td>Applied Music: Guitar. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<tr>
<td>MUSC 112</td>
<td>Applied Music: Jazz. I, II. 1-4 Hr. (May be repeated for credit.) Admitted by audition. Weekly lesson and attendance at the Jazz Seminar addressing issues related to jazz performance, technology, pedagogy, and business aspects of music.</td>
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<td>MUSC 113</td>
<td>Applied Music: Harpsichord. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 114</td>
<td>Applied Music: Horn. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 115</td>
<td>Applied Music: Oboe. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 116</td>
<td>Applied Music: Percussion. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 117</td>
<td>Applied Music: Percussion Drum Set. I, II. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 118</td>
<td>Applied Music: Piano. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 119</td>
<td>Applied Music: Pipe Organ. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 120</td>
<td>Applied Music: Saxophone. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 121</td>
<td>Applied Music: String Bass. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 122</td>
<td>Applied Music: Trombone. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 123</td>
<td>Applied Music: Trumpet. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 124</td>
<td>Applied Music: Tuba. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 125</td>
<td>Applied Music: Viola. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 126</td>
<td>Applied Music: Violin. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 127</td>
<td>Applied Music: Voice. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.</td>
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<td>MUSC 130</td>
<td>Piano Class Level 0. I, II. 1 Hr.</td>
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<td>MUSC 131</td>
<td>Piano Class Level 1/2. I, II. 1 Hr. Audition for placement is required.</td>
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<tr>
<td>MUSC 132</td>
<td>Piano Class Level 1. I, II. 1 Hr. Audition for placement is required.</td>
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<tr>
<td>MUSC 134</td>
<td>Piano Class Level 1 1/2. I, II 1 Hr. Audition for placement is required.</td>
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<tr>
<td>MUSC 134</td>
<td>Piano Class Level 2-2 1/2. I, II. 1-2 Hr. (May be repeated for credit.) Audition for placement is required.</td>
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<tr>
<td>MUSC 135</td>
<td>Piano Class Advanced. I, II. 1-2 Hr. (May be repeated for credit.) Audition for placement is required.</td>
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<tr>
<td>MUSC 136</td>
<td>Guitar Class 1. I, II. 1 Hr. (May be repeated for credit.)</td>
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<td>PR: MUSC 136 or permission.</td>
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<tr>
<td>MUSC 137</td>
<td>Guitar Class 2. I, II. 1 Hr. (May be repeated for credit.)</td>
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</table>
MUSC 138. Voice Class 1. I, II. 1-2 Hr. (May be repeated for credit).
MUSC 139. Voice Class 2. I, II. 1-2 Hr. (May be repeated for credit.) PR: MUSC 139 or permission.
MUSC 140. Chamber Music: Brass. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 141. Chamber Music: Guitar. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 142. Chamber Music: Piano-4 Hand. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 143. Chamber Music: Strings. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 144. Chamber Music: Woodwind. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 145. Chamber Music: Vocal. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 146. Chamber Music: Mixed Ensemble. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 147. Chamber Music: Mountaineer Singers. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 148. Chamber Music: New Music. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149A. Chamber Music: Brass Choir. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149B. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149C. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149D. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149E. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149F. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149G. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149H. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149I. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149J. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149K. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149L. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149M. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149N. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149O. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149P. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149Q. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149R. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149S. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149T. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149U. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149V. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149W. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149X. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149Y. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
MUSC 149Z. Collegium Musicum. I, II. 1-2 Hr. (May be repeated for credit.) PR: Consent. Study of outstanding musical works not in the standard repertory. Performance of vocal and instrumental music, investigation of performance practices, preparation of editions, and direction of rehearsals under supervision.

MUSC 150. Chamber Music: Freshman Percussion. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 151. Chamber Music: Percussion 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 152. Chamber Music: Percussion 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 153. Chamber Music: Percussion 3. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 154. Chamber Music: Gamelan. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 155. Chamber Music: Steel Band 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 156. Chamber Music: Steel Band 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 157. Chamber Music: Steel Band 3. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 158. Chamber Music: Ethnic. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 159. Chamber Music: Percussion Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 160. Introduction to Music Composition. 2 Hr. PR: Consent. (Open to music composition majors only.) Development of creativity in musical composition. May be repeated for credit. 2 Hr. lec.

MUSC 161. Aural Theory 1. I. 2 Hr. The four aural theory courses (MUSC 161, 163, 261, and 263) form a unit of instruction devoted to the development of aural skills such as sight-singing, melodic and harmonic dictation, identification of chords, chord progressions, modulations, and non-harmonic tones.

MUSC 162. Written Theory 1. I. 2 Hr. Elementary theory (scales, keys, intervals, triads, and dominant seventh chords) and introduction to diatonic harmony (part-writing and analysis.)


MUSC 164. Written Theory 2. II. 2 Hr. PR: MUSC 162. Continuation of MUSC 162. Diatonic harmony including part-writing, harmonization of melodies, and harmonic analysis with triads, seventh chords, secondary dominants, and modulation. Analysis of binary and ternary forms.

MUSC 165. Fundamentals of Music. I, II. 3 Hr. (Not open to music majors.) Introductory course designed to develop music reading skills through a systematic presentation of music notation and elementary compositional projects.

MUSC 166. 20th Century American Pop Music. 3 Hr. Introduction to history and development of American popular music.

MUSC 169. Diction for Singers: French. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in various languages. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169A. Diction for Singers: English. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in various languages. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169B. Diction for Singers: Italian. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in various languages. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169C. Diction for Singers: German. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in various languages. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169D. Diction for Singers: French. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English; Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169E. Diction for Singers: Italian. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169F. Diction for Singers: French. I, II. 2 Hr. (May be repeated for credit, max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.
MUSC 169G. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169H. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169I. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169J. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169K. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max. 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169L. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169M. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169N. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169O. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169P. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169Q. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169R. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169S. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169T. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169U. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169V. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169W. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169X. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.
MUSC 169Y. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 169Z. Diction for Singers. I, II. 2 Hr. (May be repeated for credit; max 8 Hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of languages that will aid in comprehension of song, oratorio, and operatic texts considered.

MUSC 170. Introduction to Music. I, II. 3 Hr. (Not open to music majors.) Introductory course designed to develop an appreciation and understanding of the significance of music as a fine art, and to help the student develop intelligent listening habits.

MUSC 171. Music in Appalachia. I. (Alternate Years.) 3 Hr. (Not open to music majors.) Survey of traditional instrumental and vocal music of southern Appalachia. History, style characteristics, and performance techniques involving live and recorded examples emphasizing those found in West Virginia.

MUSC 172. Music in Western Culture. I. 3 Hr. PR: MUSC 170 or consent. (Not open to music majors.) A survey of western music from early Christian times to the twentieth century with special emphasis upon cultural and social relationships.

MUSC 173. Music of the Modern Age. II. 3 Hr. PR: MUSC 170 or consent. (Not open to music majors.) A survey of western music of the twentieth century from Debussy to recent years, emphasizing stylistic, historical, and cultural facets.

MUSC 174. Great Composers. I. 3 Hr. PR: MUSC 170 or consent. (Not open to music majors.) A study of major works by a chosen composer or group of composers.

MUSC 175. Introduction to History of Jazz. II. 3 Hr. PR: MUSC 170 or consent. An introduction to jazz, its characteristics, important performers, and their music, including an historical survey with attention to the changing style of the music.

MUSC 176. Folk Music of the United States. I. 3 Hr. Introduction to the folk music of various American cultural groups in historical context. Comparative analysis of representative tunes and texts.

MUSC 177. Introduction to Music Listening. II. 1 Hr. (For music majors only.) Guided listening to representative compositions of various traditions of Western Music. Development of ability to describe elements of compositions and style using a standard musical vocabulary.

MUSC 179. Music in World Cultures. 3-Hr. Examination of music from various cultures (e.g. Native America, South India, Japan, Africa) within their cultural contexts. (not open to music majors.)

MUSC 180. Introduction to Music Education. II. 1 Hr. Introduction to purposes of school music education, students as learners, content and structure of school music programs, and music teacher knowledge and skills.


MUSC 182. Music in the Elementary School. I, II. 3 Hr. (Not open to music majors.) Development of fundamental music skills and pedagogical strategies for integrating music into the elementary classroom.

MUSC 183. Chamber Music: Jazz Big Band 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183A. Chamber Music: Jazz Big Band 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183B. Chamber Music: Jazz Small Group 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183C. Chamber Music: Jazz Small Group 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183D. Chamber Music: Jazz Small Group 3. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183E. Chamber Music: Jazz and Ethnic. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183F. Chamber Music: Jazz Experimental. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183G. Chamber Music: Jazz Vocal Ensemble. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183H. Chamber Music: Jazz Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

MUSC 183I. Chamber Music: Jazz Vocal Ensemble. I, II. 0-1 Hr. (May be repeated for credit) PR: Consent

MUSC 189. Music Convocation. 0 Hr. (Required for all music majors for six semesters. May be repeated.) Faculty, guest artist, and student performances, lectures and forums on major musical issues and topics.
MUSC 200. Fundamentals of Conducting. I. 2 Hr. PR: MUSC 163 and 164. Basic conducting skills, including beat patterns, expressive gestures, cues, and the fermata; terminology; tempo changes; and the mechanics of score reading. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.


MUSC 264. Written Theory 4. II. 2 Hr. PR: MUSC 262. Consideration of melody, rhythm, harmony, texture, form, etc., and how they function to produce an organic work of art. Analysis of larger musical forms and emphasis on twentieth century techniques.


MUSC 266. Orchestration and Band Arranging. II. 2 Hr. PR: MUSC 265. Problems in scoring for orchestra and band.

MUSC 267. Choral Arranging. 2 Hr.

MUSC 270. History of Western Musical Traditions 1. I. 3 Hr. PR: MUSC 177 or MUSC 170. Survey of Western musical traditions from the Christian era to c1800 in their stylistic, historic, and social settings.

MUSC 271. History of Western Musical Traditions 2. 3 Hr. PR: MUSC 270 and ENGL 102. Survey of Western musical traditions from c1800 to the present in their stylistic, historic, and social settings. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

MUSC 280. Woodwind Instrument Pedagogy. I, II. 2 Hr. Techniques of teaching woodwind instruments, including playing techniques, pedagogical techniques appropriate for young players, methods, materials, maintenance, and repairs.

MUSC 281. Brass Instrument Pedagogy. I, II. 2 Hr. Techniques of teaching brass instruments, including playing techniques, pedagogical techniques appropriate for young players, methods, materials, maintenance, and repair.

MUSC 282. String Instrument Pedagogy. I, II. 2 Hr. Techniques of teaching string instruments, including playing techniques, pedagogical techniques appropriate for young players, methods, materials, maintenance, and repair.

MUSC 283. Percussion Instrument Pedagogy. I, II. 2 Hr. Techniques of teaching percussion instruments, including playing techniques, pedagogical techniques appropriate for young players, methods, materials, maintenance, and repair.

MUSC 284. Vocal Pedagogy. I, II. 2 Hr. PR: MUSC 138 or MUSC 138 exemption. Techniques of voice culture; applicable to school choral activities and instruction of young singers.


MUSC 360. Composition. I, II. 2 Hr. PR: MUSC 264 or consent. (May be repeated for credit; max. 8 Hr.) Creative writing.

MUSC 380. Instrumental Methods and Materials. 3 Hr. PR: For Music Education Majors, successful completion of all pre-professional requirements. Methods, materials, and administration of K-12 instrumental music programs. Bi-weekly laboratory.
MUSC 381. Choral Music Methods and Materials. 3 Hr. PR: For Music Education Majors, successful completion of all pre-professional requirements. Methods, materials, and administration of K-12 choral music program. Bi-weekly laboratory.

MUSC 382. General Music Methods and Materials. 3 Hr. PR: For Music Education Majors, successful completion of all pre-professional requirements. Methods, materials, and curriculum for elementary general music programs. Weekly practicum (arranged).

MUSC 383. Marching Band Techniques. 2 Hr.


MUSC 430. Piano Class Methods and Materials. I. 3 Hr. Methods, materials, and pedagogical techniques, including presentation of keyboard theory as used in functional piano. Practical organization of piano classes. Laboratory: Observation of experienced class teacher and student teaching.

MUSC 431. History of Keyboard Pedagogy and Technique. II. 3 Hr. Study of keyboard development and technique, including pedagogical works of the eighteenth through twentieth centuries and application to specific teaching problems. Laboratory: Student teaching and observation, emphasizing analysis and solution of technical problems.

MUSC 432. Methods and Pedagogy. I. 0-2 Hr. PR: Junior standing or consent.

MUSC 433. Methods and Pedagogy. II. 1-2 Hr. PR: MUSC 432 or consent.

MUSC 434. Repertoire. I. 0-2 Hr.

MUSC 435. Repertoire: Voice. II. 0-2 Hr.

MUSC 435A. Repertoire: Piano. II. 0-2 Hr.

MUSC 435B. Repertoire: Other. II. 0-2 Hr.

MUSC 435C. Repertoire. II. 0-2 Hr.

MUSC 435D. Repertoire. II. 0-2 Hr.

MUSC 435E. Repertoire. II. 0-2 Hr.

MUSC 435F. Repertoire. II. 0-2 Hr.

MUSC 435G. Repertoire. II. 0-2 Hr.

MUSC 435H. Repertoire. II. 0-2 Hr.

MUSC 435I. Repertoire. II. 0-1 Hr.

MUSC 435J. Repertoire. II. 0-2 Hr.

MUSC 435K. Repertoire. II. 0-2 Hr.

MUSC 435L. Repertoire. II. 0-2 Hr.

MUSC 435M. Repertoire. II. 0-2 Hr.

MUSC 435N. Repertoire. II. 0-2 Hr.

MUSC 435O. Repertoire. II. 0-2 Hr.

MUSC 435P. Repertoire. II. 0-2 Hr.

MUSC 435Q. Repertoire. II. 0-2 Hr.

MUSC 435R. Repertoire. II. 0-2 Hr.

MUSC 435S. Repertoire. II. 0-2 Hr.

MUSC 435T. Repertoire. II. 0-2 Hr.

MUSC 435U. Repertoire. II. 0-2 Hr.

MUSC 435V. Repertoire. II. 0-2 Hr.

MUSC 435W. Repertoire. II. 0-2 Hr.
MUSC 435X. Repertoire. II. 0-2 Hr.
MUSC 435Y. Repertoire. II. 0-2 Hr.
MUSC 435Z. Repertoire. II. 0-2 Hr.

MUSC 460. Upper-Division Composition. I, II. 2 Hr. (May be repeated for credit.) PR: Two semesters MUSC 360, or consent based on scores submitted. Creative writing with emphasis on practical composition for performance.


MUSC 462. Counterpoint. II. 2 Hr. PR: MUSC 264 or consent. Eighteenth century counterpoint.

MUSC 463. Analysis of 18th-19th Century Music. II. 3 Hr. PR: MUSC 264 or consent. Detailed study of the materials and structure of Western Art Music of the eighteenth and nineteenth-centuries. (Alternate years.)

MUSC 464. Analysis of 20th-Century Art Music. II. 3 Hr. PR: MUSC 264 or consent. Detailed study of the materials and structure of Western Art Music of the twentieth century. (Alternate years.)


MUSC 467. Major Project in Theory, Composition, or Music History. I, II. 2 Hr. (Not available for Graduate credit.) PR: MUSC 264.

MUSC 468. Jazz Harmony. II. 2 Hr. PR: MUSC 264 and MUSC 286 or consent. Advanced jazz theory and harmony. Ear training, keyboard skills, chord voicing, and substitutions. substitutions.

MUSC 469. Introduction to Recording Technology. 3 Hr. Introduction to acoustics; hands-on approach to current recording technologies and methods through a variety of styles; audio production for broadcast and/or fixed media.

MUSC 470. European Music before 1500. 3 Hr. PR: MUSC 271 or consent. A study of European sacred and secular monophonic and polyphonic traditions in their stylistic, historic, and social settings to the end of the fifteenth century.

MUSC 471. Music of the Sixteenth and Seventeenth Centuries. 3 Hr. PR: MUSC 271 or consent. A study of European sacred and secular, instrumental and vocal traditions in their stylistic, and social settings from c1500 to c1700.

MUSC 472. Music of the Eighteenth Century. 3 Hr. PR: MUSC 271 or consent. A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c1700 to c1800.

MUSC 473. Music of the Nineteenth Century. 3 Hr. PR: MUSC 271 or Consent. A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c1800 to c1900.

MUSC 474. Music of the Twentieth Century. 3 Hr. PR: MUSC 271 or Consent. A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c1900 to the present.

MUSC 475. History of Jazz. 3 Hr. PR: MUSC 271 or Consent. History and repertory of jazz from its Afro-American origins to 1975 with attention to its major exponents (including Joplin, Armstrong, B. Smith, Morton, Ellington, Gillespie, Parker, Davis, and Coltrane) and its evolving style.

MUSC 476. Women in Music. I. 3 Hr. PR: MUSC 271 or consent. Critical examination of female musicians and their range of musical styles including composers, repertoire, performers, etc., from Medieval period through today; feminist methodology includes re-examination of history and gender theory. (Travel expense possible; see current syllabus.) (Alternate Years.)

MUSC 477. Music of Africa. 3 Hr. Traditional music of selected areas of Africa south of the Sahara with particular reference to East Africa. The diverse musical cultures with emphasis on historical background, instruments, ensembles, forms, styles, and music in its social context.

MUSC 480. Arranging for Small Jazz Ensemble. 2 Hr. PR: MUSC 265. Emphasis on small ensembles comprising three to nine players.

MUSC 481. Arranging for Large Jazz Ensemble. 2 Hr. PR: MUSC 480 or consent. Continuation of MUSC 480, with emphasis on arranging for big band and studio jazz ensemble.

MUSC 487. Student Teaching Seminar-Caps. 2 Hr. On-Campus “capstone” seminar designed as a companion to music education students culminating semester-long teaching internship. Examination of student teachers professional roles and responsibilities in K-12 music programs.
MUSC 488. Recital. I, II. 0-2 Hr. (Not available for Graduate credit.) To be used to fulfill the applied major graduation requirement only when the student has achieved Proficiency Level 9. Students who have reached Level 6 may receive 1 hour credit, which may not be used to fulfill the graduation recital requirement.

MUSC 489 A-Z. Music Workshops. I, II, S. 1-2 Hr. (May be repeated for credit.)

MUSC 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

MUSC 491 A-Z. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

MUSC 492. Directed Study. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492A. Directed Study:Pedagogy Project. I, II, S. 1-3 Hr. Directed study, reading, and/or research.


MUSC 492C. Directed Study:Choral Techniques. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492D. Directed Study:Conducting. I, II, S. 1-3 Hr. Directed study, reading and/or research.

MUSC 492E. Directed Study:Theory Review. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492F. Directed Study:Music Education Practicum. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492G. Directed Study:Rhythms of Africa. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492H. Directed Study:Bali. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492I. Directed Study:Music/Dance/Art-Tahiti. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492J. Directed Study:Chamber Music in France. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492K. Directed Study:Graduate Theory Review. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

MUSC 492L. Directed Study:Music Education. I, II, S. 1-3 Hr. Directed study, reading and/or research.

MUSC 492 M-Z. Directed Study. I, II, S. 1-3 Hr. Directed study, reading and/or research.

MUSC 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 493A. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 493C. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 493D. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 493E. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 493F. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 493G. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 493H. Special Topics. 1-6HR. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 493I. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
MUSC 493J. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

MUSC 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

MUSC 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

MUSC 496. Senior Thesis. 1-3 Hr. PR: Consent.

MUSC 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

News Editorial (N-E)
N-E 408. The Community Newspaper. 2 Hr. (Open to all University students.) Fundamental problems and techniques in operation of community newspapers.

N-E 418. Advanced Reporting. 3 Hr. PR: JRL 319 and admission to the School of Journalism, or consent. Students write carefully researched stories using writing, reporting, and interviewing skills they have acquired in previous classes while applying techniques of literary journalism. The class emphasizes immersion reporting; students spend extended time with one subject to develop skills in storytelling, interviewing and organization. (Lab fees will be assessed for this course.)

N-E 420. Feature Writing. 3 Hr. PR: JRL 318 and admission to the School of Journalism or consent. Developing, writing, and editing news features, personality profiles, color pieces, issue-oriented articles and human impact stories for news, public relations and film. The course emphasizes narrative, descriptive, analytic and story-telling skills. One-on-one professor/student conferences stress story building and revision. (Lab fees will be assessed for this course.)

N-E 425. High School Publications Advising. 3 Hr. PR: JRL 319 and ADV 215. (For students seeking Journalism certification.) Emphasizes writing styles, newspaper/ yearbook layout, rights and responsibilities of the teacher, students, and school system. Enrollees will construct instructional portfolios based on research and classroom discussion concepts.

N-E 426. Public Affairs Reporting. 3 Hr. PR: JRL 319 or PR 319 and admission to the School of Journalism. Students take skills learned in other News Editorial classes-writing, researching and interviewing-and apply them to the agencies, structures and programs that make society work. They also work with local newspapers to develop and publish stories. public agencies, including circuit court, police (Lab fees will be assessed for this course.)


N-E 428. Law of the News Media. 3 Hr. (For Journalism seniors and graduate students.) PR: Foundation courses for other sequences. The law as it affects the mass media. Considered are such areas as libel, privacy, public records, criminal pre-trial publicity, freedom of information, obscenity.

N-E 430. Editorial and Critical Writing. 3 Hr. PR: JRL 319 or PR 319. Students will analyze news issues, write editorials, and write editorial page columns. Students will also analyze the role and content of the editorial pages in contemporary newspapers.

N-E 459. Newspaper Bureau Reporting. 3 Hr. PR: JRL 319. Students will work with editors at a West Virginia newspaper and the instructor to conceive, report, write and photograph stories for publication at the newspaper. Conferences will be held each week with newsroom editors.

N-E 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Course will be graded on a Pass/Fail basis.)

N-E 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Course will be graded on a Pass/Fail basis.)

N-E 493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

N-E 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

N-E 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
N-E 496. Senior Thesis. 1-3 Hr. PR: Consent.

N-E 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Native American Studies (NAS)**

NA 200. Introduction: Native American Studies. I, II. 3 Hr. Overview of the diverse social and cultural institutions of indigenous tribal societies in North America. Historical materials provide the background for understanding the range of issues affecting contemporary tribal groups.


NAS 491. Professional Field Experience. I, II, S. 1-6 Hr. PR: Consent. Supervised interdisciplinary experiences focused on Native Americans. May be tribally based or related to agencies and projects serving Native Americans. This course is not open to Freshman.


NAS 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

NAS 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

NAS 499. Global Service Learning. 3 Hr.

**Neurobiology and Anatomy (NBAN)**

NBAN 101. Principles of Human Anatomy. 3 Hr. PR: BIOL 2 or equiv.; consent of instructor or chairperson. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development. (Section 01 for pharmacy students; 02 for nursing and dental hygiene students.)

NBAN 102. Gross Anatomy. II. 3 Hr. PR: NBAN 101 and/or consent of instructor or chairperson. Functional gross anatomy of the back, extremities, head, and neck. (For physical therapy students.)


NBAN 152. Introduction Physical Anthropology. 3 Hr.

NBAN 190. Teaching Practicum. 1-3 Hr.

NBAN 191. Special Topics. 1-3 Hr.

NBAN 194. Professional Field Experience. 1-18 Hr.

NBAN 195. Seminar. 1-3 Hr.

NBAN 196. Senior Thesis. 1-3 Hr.

NBAN 197. Honors. 1-3 Hr.

NBAN 205. Introduction to Human Anatomy. 3 Hr. Introductory human anatomy course that uses a combined regional and systemic approach to examine the relationships and organization of the major structures within the thorax, abdomen, head/neck, and back/limb regions of the body.

NBAN 206. Human Anatomy Laboratory. 1-3 Hr. PR: NBAN 205 or NBAN 301 or consent. Introductory human anatomy laboratory using a combined regional and systemic approach to examine the relationships and organization of the major structures with the thorax, abdomen, head/neck, and back/limb regions of the body.

NBAN 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293A: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293B: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293C: Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
NBAN 293D: Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293E: Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293F: Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293G: Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293H: Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293I: Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 293J: Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NBAN 301. Principles of Human Anatomy. 3 Hr. PR: Admission to WVU's Dental Hygiene, Nursing, or Pharmacy program or Consent. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

NBAN 302. Gross Anatomy. 3 Hr. PR: NBAN 301 and Consent. Functional gross anatomy of the back, extremities, head, and neck. (For physical therapy students.)

NBAN 303. Human Structure. 1-17 Hr. PR: For medical and selected graduate students in the medical basic sciences with instructor consent. Integrated approach combining human gross anatomy, microanatomy and embryology. Includes human cadaver dissection, microscopic anatomy of cells, tissues and organs with application to human health and disease.

NBAN 304. Microanatomy. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 Hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.

NBAN 305. Neuroanatomy. (For students in physical therapy and a limited number of regular full-time graduate students in other health sciences.) II. 2 Hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system.

NBAN 306. Oral Histology. 2 Hr. PR: NBAN 301. Histological structure and embryological development of the teeth, tissues and organs of the oral cavity. (Electronic delivery)

NBAN 312. Special Topics in Anatomy. I, II. 2-4 Hr. per sem. PR: Consent of chairperson or instructor. Different topics of current interest in anatomy that are not included in the regular graduate courses.

NBAN 314. Applied Anatomy. I, II. 2-6 Hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.

NBAN 316. Craniofacial Growth and Maturation. I. 1 Hr. PR: Consent of instructor. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

NBAN 318. Oral Histology and Embryology. (For dental students and a limited number of regular full-time graduate students in medical basic sciences.) II. 2 Hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.

NBAN 319. Advanced Head and Neck Anatomy. 1 Hr. PR: Dental, medical, or graduate student in basic sciences, or consent. Head and neck craniofacial anatomy as it applies to specialties in dental or medical practice.

NBAN 320. Electron Microscopy. II. 4 Hr. PR: Consent. (For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.

NBAN 324. Human Gross Anatomy. (For dental students and a limited number of regular, full-time graduate students in medical basic sciences.) 7 Hr. PR: Dental student standing or consent of chairperson. Human anatomy including cadaver dissection for dental students. (4 hr. lec., 3 hr. lab.)

NBAN 391. Advanced Topics. 1-6 Hr.

NBAN 397. Research. I, II, S. PR: Consent of instructor or chairperson. (May be repeated as needed with permission). 1-15 hr.
NBAN 401. Advanced Gross Anatomy. I, II. 2-6 Hr. per sem. PR: NBAN 303 or 324 and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.

NBAN 402. Advanced Developmental Anatomy. II. 2-6 Hr. per sem. PR: NBAN 303 or 324 and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.

NBAN 403. Seminar. I. 1-6 Hr. PR: Consent of Graduate Committee. Special topics of historical interest.

NBAN 405. Experimental Embryology. II. (Alternate years.) 3 Hr. PR: Embryology and cellular physiology and biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.

NBAN 406. Advanced Neuroanatomy. I. 2-4 Hr. per sem. (Course may be repeated.) PR: CCMD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.

NBAN 408. Histochemistry. II. (odd numbered years.) 3 Hr. PR: NBAN 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques.

NBAN 451. Advanced Microanatomy and Organology. I, II, or S. 2-4 Hr. PR: NBAN 305 or 309, or BIOL 263 and consent of instructor or chairperson. An extension of the major topics included in NBAN 305 or 309. Special emphasis on recent contributions.

NBAN 490. Teaching Practicum. I and II. 1-3 Hr. PR: Consent of chairperson. Supervised practice in college teaching of anatomy. Graded as S or U.

NBAN 491. Advanced Topics. I, II. 1-6 Hr. PR: Consent of chairperson.

NBAN 492. Directed Study. I, II, S. 1-6 hr. Directed study, readings, and research.

NBAN 493. Special Topics. I, II, S. 1-6 hr. A study of contemporary topics selected from recent developments in the field.

NBAN 495. Independent Study. I, II, S. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.

NBAN 496. Graduate Seminar. 1 hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program. (Graded S/U.)

NBAN 497. Research. I, II, S. 1-15 Hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Studies Committee.)

NBAN 498. Thesis. 2-4 Hr.

NBAN 499. Graduate Colloquium. 1-6 Hr.

Nursing (NSG)

NSG 110. Health and Wellness. 3 Hr. Health promotion and risk reduction; data collection; cultural diversity; values that contribute to health; interpersonal communication in promoting professional relationships.


NSG 222. Seminar 1: Professional Role Development. 1 Hr. PR: NSG 110, Sophomore standing or consent. Characteristics of self in role transition; values and beliefs; personal and professional behaviors in nursing care.

NSG 225. Nursing Interventions 1. 3 Hr. COREQ: NSG 221; PR: Sophomore standing or consent. Critical thinking in application of the nursing process in individuals with altered mobility, comfort, or potential infection; health protection, promotion and maintenance interventions.

NSG 241. Concepts: Nursing 2. 2 Hr. PR: NSG 221 and NSG 225 and COREQ: NSG 245. Focuses on enhancing student understanding of human responses to minor deviations in health throughout the lifespan; emphasizes professional nursing role in health restoration and critical thinking; examines family health assessment.

NSG 245. Nursing Interventions 2. 4 Hr. PR: NSG 221 and NSG 225. COREQ: NSG 241. Critical thinking in the application of the nursing process to individuals with minor deviations in health protection, health restoration, and health promotion/maintenance. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

NSG 251. Basic Concepts of Nursing. 3 Hr. PR: BS/BA/BSN students only. An emphasis on the professional nursing role in health promotion and restoration, which enhances the student’s understanding of human responses to health promotion activities and minor health deviations throughout the lifespan.
NSG 255. Basic Nursing Interventions. 3 Hr. PR: BS/BA/BSN students only. Clinical practicum with focus on critical thinking in application of the nursing process to individuals and families with minor deviations in health. Emphasis is on health protections, restoration, promotion, and maintenance.

NSG 322. Concepts: Pediatric Health. 2 Hr. PR: NSG 361 or Consent. Co-Req: NSG 325. The focus is on the human response to physiological system dysfunction. The emphasis is on the professional nursing role in complex physiological health restoration for children.

NSG 325. Interventions: Pediatric. 2 Hr. PR: NSG 361 or consent; Co-Req: NSG 332. Nursing interventions specific to human responses to pediatric problems. Emphasis on advanced independent and collaborative nursing activities.

NSG 333. Ethics in Nursing. 3 Hr. PR: Junior standing or consent. Focus on demonstrating caring behaviors through managing individual/family/group systems. Focus is on ethical decision-making in health care situations. The course emphasizes improvement of writing skills in conjunction with strengthening critical thinking.

NSG 334. Concepts: Adult Health. 3 Hr. PR: NSG 361 or Consent. Co-Req: NSG 335. The focus is on the human response to physiological system dysfunction. The emphasis is on the professional nursing role in complex physiological health restoration for adults.

NSG 335. Interventions: Medical Surgical. 2 Hr. PR: NSG 361 or consent; Co-Req: NSG 332. Nursing interventions specific to human responses to multiple physiological system dysfunction. Emphasis on advanced independent and collaborative nursing activities.

NSG 340. Professional Role Transition. 3 Hr. PR: RN Licensure. The course focuses on concepts and principles of professional nursing inherent in the curriculum of the School of Nursing. Emphasis is placed on how these concepts and principles affect nursing role.

NSG 345. Interventions: Psychosocial. 2 Hr. PR: NSG 361 or consent; Co-Req: NSG 356. Nursing interventions specific to human response to multiple psychosocial system dysfunction. Emphasis on advanced independent and collaborative nursing activities.


NSG 355. Interventions: Maternal Child. 2 Hr. PR: NSG 361 or consent; Co-Req: NSG 351. Nursing interventions specific to human responses related to individuals and families experiencing child bearing adaptations. Emphasis on advanced independent and collaborative nursing activities.


NSG 361. Health Assessment. 3 Hr. PR: NSG 225 or consent. Comprehensive, in-depth assessment of the client’s health status, health patterns, physical examination and health history. Interviewing techniques including taped interactions and accurate recording of data for clients across the life span.

NSG 371. Basic Parish Nurse Education. 3 Hr. Explore the nurse’s role in managing care within Faith Communities. Focus is on dimensions of nurse’s role: spiritual caregiver, health promoter, counselor, advocate, educator, care coordinator, resource agent and manager of developing practice.

NSG 376. Clinical Nursing Pharmacology. 3 Hr. PR: Junior standing; Co-Req: NSG 332. Principle of pharmacology emphasizing on nursing role in accurate drug administration and patient assessment. Pharmacological management is analyzed with Pathophysiology. Particular emphasis is on patient/family teaching of pharmacological goals in order to maximize health potential.

NSG 400. Spirituality and Health. 3 Hr. In this course, students will examine the mind/body/spirit connection that occurs in the process of healing and wellness. Theories and practices of relationships between mind/body/spirit will be examined as they impact health/wellness of patients.

NSG 421. Concepts: Critical Care. 3 Hr. PR: Senior standing in NSG or consent. COREQ: NSG 425. Emphasis on professional nursing role in supporting individual/family/group responses to acute life threatening situations involving vulnerable populations; focus is on nursing role in providing care to unstable, individuals/families/groups.

NSG 423. Leadership in Nursing. 2 Hr. PR: Senior status or consent. Professional role in creating and managing the health care milieu. Focus is on the nurse teacher/manager roles and interventions in support of the client/family experiencing acute or long term problems.

NSG 425. Interventions: Leadership. 6 Hr. PR: Senior standing in Nursing or consent. COREQ: NSG 421. Professional nursing role in supporting human responses to acute, life threatening situations involving identified vulnerable populations; focus is on therapeutic nursing interventions specific to aid human responses of individuals with physiologic instability and their families.
NSG 433. Seminar 8: Professional Role Synthesis. 3 Hr. PR: NSG 343. Emphasis is on implementation of the professional nursing role within a changing health care system. Focuses on analysis of societal, institutional and economic factors that affect the delivery of health care.

NSG 434. Evidence-Based Practice. 4 Hr. PR: NSG 476; Co-Req: NSG 433. Focus is on evidence based practice in nursing, through analysis of clinical questions, appraisal of evidence for clinical decision making strategies to apply evidence, and exploring creation of a culture for evidence-based practice.

NSG 441. Concepts: Community. 3 Hr. PR: Senior standing in Nursing or consent. COREQ: NSG 445. Community Health Nursing processes with emphasis on the professional nursing role in the assessment of community health needs and identification of health action potential.

NSG 442. Review Clinical Problems. 2 Hr. PR: Senior Status. Professional nursing role in dealing with advanced clinical problems in health promotion and disease prevention in vulnerable population groups. Emphasis is on interdisciplinary and multidisciplinary approaches to problem solving in health care.

NSG 443. Seminar 6: Professional Role Development. 2 Hr. Emphasis on professional nursing role in health promotion/ risk reduction in groups/communities of vulnerable populations. Focuses on multidisciplinary team approaches to problem solving in community health.

NSG 445. Interventions: Community. 5 Hr. PR: Senior standing in Nursing or consent. COREQ: NSG 441 and NSG 455. Emphasis on the collaborative role of the nurse in assisting communities to develop and implement plans for health promotion/risk reduction in vulnerable populations. Focus on interdisciplinary approaches to problem solving in community health.

NSG 455. Interventions: Capstone. 1 Hr. PR: Senior Standing in Nursing or Consent and PR or CONC: NSG 441 and NSG 476. Co-Req: NSG 445. Synthesis of theoretical and practical knowledge acquired in undergraduate nursing career. Emphasis on critical thinking, ethical decision making and civic responsibility in the design and implementation of a service-learning project addressing a community health need.

NSG 476. Introduction to Nursing Research. 3 Hr. PR: STAT 211 or consent. Theory, concepts and methods of the research process intended to provide a basic understanding that is necessary for intelligent consumership of research findings.

NSG 481. Cardiac Nursing. 2 Hr. Web-Based. Mastery format. NSG juniors and seniors. Introduction to the interpretation and treatment of cardiac arrhythmias.

NSG 482. Palliative Care Basics. 2 Hr. PR: Junior rank in nursing, or one year of clinical course work for other Health Science majors. Discussion surrounding end-of-life care of the patient and family in a variety of settings. Exploring these topics will enable the health care professional to provide quality patient care and advocacy for end-of-life care.

NSG 483. Holistic and Integrative Nursing. 2 Hr. PR: NSG 241 and NSG 245. Theory and principles of holistic nursing and an introduction to alternative/complementary health therapies. Experiential learning and application of content to clinical setting will be explored.

NSG 486. NCLEX Review. 1 Hr. PR: Senior status. Focuses on achievement of professional success by preparing for RN licensure. Preparation for NCLEX will be the focus of this by enhancing NCLEX testing skills.

NSG 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

NSG 495. Independent Study. 1-6 Hr. Consent. Faculty supervised study of topics not available through regular course offerings.

NSG 496. Senior Thesis. 1-3 Hr. PR: Consent.

NSG 497. Research. 1-6 Hr. Independent research projects.

NSG 498. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study or research.

Orientation (ORIN)
ORIN 100. Orientation to STEP. 1 Hr. Support of STEP students to make a successful transition from high school to college; develop a better understanding of the learning process including critical thinking; and acquire basic academic and personal survival skills.

ORIN 110. Orientation to EXCEL. 1 Hr. Support for the first year student to make a successful transition from high school to college; develop a better understanding of the learning process including critical thinking; and acquire basic academic and personal survival skills.

ORIN 151. Career Exploring and Planning. 2 Hr. Exploration of careers and college majors with special emphasis on individual interests, abilities, and values. Most beneficial to freshman/sophomores, also for juniors and seniors who are uncertain of career paths.
ORIN 161. Exploring Career Options. 1 Hr. This course helps students explore the career that is best for them. Students receive individual counseling as well as an opportunity to talk with career mentors.

ORIN 162. Becoming Career Ready. 1 Hr. This course helps students identify the personal and professional skill requirements of their selected career. The course involves a mix of group explorations, one-on-one discussions, and self-improvement exercises.

ORIN 163. Gaining Experience. 1 Hr. This course helps students find experience to support their career choice. The course also helps students assess what they learn from the experience and evaluate whether their career selection meets their needs.

ORIN 164. Finding the First Job. 1 Hr. This class helps students develop and execute a strategy for obtaining a first job that is consistent with the student’s career interests.

ORIN 165. Starting Your Career. 1 Hr. This class helps students prepare for the issues they will encounter early in their careers. careers.

ORIN 175. Western Europe Study Trip. 3 Hr. Exploration of Western European (Belgium, France, Germany, Luxemburg, Netherlands) history, culture, and politics with an emphasis on relevance and links to the U.S.

ORIN 220. Leadership Development. I. 2 Hr. PR: Sophomore standing. Primarily for sophomores and juniors. A practical survey of leadership techniques taught by various instructors. Major emphasis placed upon improvement of leadership abilities within the WVU campus structure and problems particular to student organizations. (Pass/Fail grading only.)


ORIN 260. Preparation for Graduate Education. 1 Hr. This course offers a comprehensive view into the graduate school application process. Assignments will mimic those required for actual admission into graduate programs.

ORIN 270. Introduction to Health Careers. II. 1 Hr. A study of careers in the health professions. Readings, lectures, and discussions by professionals in many health fields will include the educational requirements for and functions of their respective health professions. (Pass/Fail grading only.)

ORIN 272. Orientation to Law. I, II. 1 Hr. An orientation to the legal profession for undergraduates. Undergraduate preparation for law school; (Law School Admissions Test LSAT); admission to law school, law school experience, and the legal profession. (Pass/Fail grading only.)


ORIN 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

ORIN 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ORIN 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ORIN 494. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

ORIN 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

ORIN 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

ORIN 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Office Systems Technology (OSTC)

OSTC 107. Medical Terminology 1. 3 Hr. Introduction to medical terminology as it applies to the various body systems and practical application in medical office procedures.

OSTC 108. Medical Terminology 2. 3 Hr. PR: OSTC 107. Continuation of OSTC 107 with an emphasis in medical office procedures.

OSTC 113. Basic Formatting. 3 Hr. PR: Minimum typing speed: 30 wpm. Designed for students who have had previous training in keyboarding. Emphasis on letter formatting styles, manuscript formatting, tables, envelopes, and business forms.
OSTC 119. Office Training. 3 Hr. PR: OSTC 113 or consent of instructor. Open to Office Technology Majors only. A course combining theory with the actual practice embodied in the courses above. “Hands on” experience is stressed on various machines in the department—dictating and transcription equipment; facsimile machine; and photocopy machines. Office grooming, office etiquette, different types of office work, and other topics pertinent to an office are studied and discussed.

OSTC 221. Word Processing. 3 Hr. PR: OSTC 113 or consent of the instructor. This course provides study in the theories and practical applications of word processing for employment or home use.

OSTC 222. Office Automation. 3 Hr. PR: CS 101 or CIS 100 and OSTC 113 or consent of the instructor. This course provides an evolutionary perspective on today’s changing office. Topics include information flow and management, communications, replication, and records management.

OSTC 223. Directed Office Experience. 2 Hr. This course is open to students in the BTEC and OSTC programs during the final semester of study or with advisor permission. Students are placed in appropriate work sites in the community and surrounding area to participate in an on-the-job training experience. (A minimum of 56 hours is required.)

OSTC 240. Fundamentals of Desktop Publishing. 3 Hr. Current hardware and software used in desktop publishing (Microsoft’s Publisher). Students will complete projects developed to train the user in basic hardware and software applications.


OSTC 252. Interpersonal Relations. 3 Hr. Meeting management, problem solving, delegation, conflict resolution, motivation, job application process, and professional ethics.

OSTC 254. Machine Transcription. 3 Hr. Transcription of specialized documents and records using transcribing equipment/computers; Production measurement and content based on majors.

Occupational Therapy (OTH)

OTH 300. Essentials of Clinical Anatomy. 4 Hr. PR: OTH student status. A study of human gross anatomy, microanatomy and embryology with major emphasis on the musculoskeletal system.

OTH 301. Professional Foundations. 3 Hr. PR: OTH student status. Introduction to fundamentals of professional behavior for the occupational therapist. Includes units on history, paradigms, communication, documentation, ethics, interdisciplinary teamwork, licensure requirements, and medical terminology.


OTH 303. Functional Movement Across the Lifespan. 2 Hr. PR: OTH student status. Including acquisition of developmental patterns, motor control, motor skill acquisition. This course also provides an overview of the effects of normative processes of aging on neuromotor patterns in occupational performance.

OTH 304. Occupational Science. 4 Hr. PR: OTH student status. An introduction to signs and symptoms and medical management of orthopedic and physical dysfunction/disabilities encountered by the Occupational Therapist. Emphasis is upon the effects of physical dysfunction/disabilities on human occupation.


OTH 307. Neurobiologic Foundations. 4 Hr. PR: OTH student status. Basic and clinical applications or neuroanatomy and neurology. Includes lectures on neurophysiological basis of physical and occupational therapy practice.


OTH 321. Development Life Tasks. 3 Hr. PR: OTH student status. Life-span human development across cognitive, psychosocial and neuromotor domains with particular emphasis on applications to physical or occupational therapy interventions. Includes focus on cultural influences in health and illness.

OTH 360. Research Methods in Occupational Therapy. 3 Hr. PR: OTH student status. An introduction to principles of research methodology and data analysis in the realm of Occupational Science/Occupational Therapy. Includes a focus on scientific methodology, research design, data collection, data analysis, and ethical considerations.

OTH 384. Level I Fieldwork 1. 2 Hr. CPR training and clinical instruction in the occupational therapy process, OT documentation, basic measurement skills, experiences with people with disabilities, and participation in professional activities. Grading will be P/F.
OTH 385. Level I Fieldwork 2. 2 Hr. PR: OTH student status. Students will be provided with fieldwork experience in the occupational therapy process, and ADL preceptual, and mental health assessments. Students will be placed in a variety of settings where mental health issues may be observed. Grading will be P/F.

OTH 386. Level I Fieldwork 3. 2 Hr. PR: OTH student status. Students will be provided with fieldwork experiences in Occupational Therapy processes. Grading will be P/F.

OTH 401. Occupational Science 2. 4 Hr. PR: OTH student status. An introduction to signs and symptoms and management and effect of neurological dysfunction and disabilities on human occupation encountered by the Occupational Therapist. Includes theories of treatment and basic treatment technologies.

OTH 402. Clinical Decision Making 1. 2 Hr. PR: OTH student status. Continuation of preparation for critical thinking and decision making in the field using appropriate information and technology in a case study format. An emphasis on autonomous practice and referral decisions.

OTH 406. Cardio-Pulmonary Rehabilitation. 3 Hr. PR: OTH student status. Lectures on cardiovascular and pulmonary conditions including medical interventions. Discipline- specific laboratory sessions include stress testing, physical capacity assessment, ecological analysis, use of monitoring equipment, and evaluation and planning rehabilitation protocols.

OTH 408. Tests and Measures in Occupational Therapy. I. 3 Hr. PR: OTH student status. Presentation of tests and measures used by occupational therapists in the assessment of various conditions. Emphasis will be placed on the clinical and functional evaluation of clients within the domain of occupational therapy practice.

OTH 414. Developmental Disabilities. 2 Hr. PR: OTH Student Status. Overview of Occupational Therapy approaches toward developmental disabilities, including focus on etiology, pathology, and progression of conditions specific to various developmental disabilities.

OTH 416. Professional Decision-Making. 2 Hr. PR: OTH student status. Students are provided with opportunities to develop critical thinking, clinical reasoning, and decision-making skills in occupational therapy. Emphasis is on autonomous practice and referral decisions.

OTH 417. Occupational Therapy in Geriatrics. 3 Hr. PR: OTH student status. Overview of normative aging using an occupational therapy frame of reference. Common problems of seniors are discussed.

OTH 419. Professional Values. 3 Hr. PR: OTH student status. An introduction to ethics and how it specifically applies to rural health and life in West Virginia. Students will be given an opportunity to explore their own conceptions of ethics in health care.

OTH 430. Occupational Therapy in Mental Health. 3 Hr. PR: OTH student status. Clinical and functional science lectures pertaining to OT practice in mental health environments. Course includes introduction to occupational therapy clinical and functional assessment, and management protocols.

OTH 432. Occupational Therapy Interventions in Mental Health II. 4 Hr. PR: OTH student status. Interventions commonly used by occupational therapists in the field of mental health. Emphasis on group processes, life skills, reintegration strategies.

OTH 435. Therapeutic Activity. 3 Hr. PR: OTH student status. Students will develop skills in performance component analysis, performance context analysis, and occupational performance analysis.

OTH 480. Current Topics in Occupational Therapy. 1-3 Hr. PR: OTH student status. (Not to exceed 18 Hr.) A seminar course designed to provide a forum for discussing the frontiers of the occupational therapy profession. Topics may include: research in progress, new developments, and salient professional issues.

OTH 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

OTH 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.


Pathology (PATH)

PATH 300. Introduction to Pathology. 3 Hr. A study of principles and processes of pathology from cellular to system, including etiology, pathogenesis, and clinical features of representative or commonly occurring disorders and diseases.

PATH 301. Basic Pathology. I. 2 Hr. PR: Enrollment in dental hygiene or physical therapy, or Consent. A study of the basic pathologic processes in man.

PATH 302. Oral Pathology. II. 3 Hr. PR: PATH 301, dental hygiene major, or Consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.
PATH 303. Clinical Lab Applications. 2 Hr. Lectures and laboratory experience on laboratory safety, measurement, use and maintenance of laboratory equipment, preparation, and storage of reagents and solutions, and basic laboratory techniques.

PATH 320. Basic Clinical Biochemistry. 3 Hr. Introduction to basic biochemistry and human metabolism of amino acids, proteins, enzymes, carbohydrates, liquids, and nucleotides. Molecular biology and applications to the clinical laboratory are included.

PATH 340. Introduction to Hematology. 3 Hr. Lectures and laboratory sessions to cover structure, morphology, and function of the cells of the blood, bone marrow and body fluids, with an overview of hematologic abnormalities.

PATH 380. Introduction to Immunology. 1 Hr. Lectures in basic immunology, with emphasis on its structure and function. Antigens, antibodies, and complement will be discussed and related to immune disorders and simple immunological tests.

Pharmacology and Toxicology (PCOL)

PCOL 260. Pharmacology. II. 3 Hr. Interactions of clinically useful therapeutic agents with the mammalian systems.

Physical Education (PE)

PE 101. Badminton. 1 Hr. Introduction to beginning knowledge and skills in Badminton.

PE 102. Badminton/Volleyball. 1 Hr. Introduction to beginning knowledge and skills in Badminton/Volleyball.

PE 103. Beginning Basketball. 1 Hr. This course is designed to provide historical background, rules and regulations, and the fundamental skills. These will be accomplished through instruction, drills, games and class team play.

PE 104. Intermediate Basketball. 1 Hr. Introduction to intermediate knowledge and skills in Basketball.

PE 106. Rowing Conditioning/Weight Training. 1 Hr. This course is designed to present students with hands on approach to proper techniques of strength and conditioning as it applies to Rowing Athletes.

PE 107. Basketball Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for basketball.

PE 108. Football Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for football.

PE 109. Baseball Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for baseball.

PE 110. Military Physical Conditioning. 1 Hr. Introduction to basic conditioning techniques for military training.

PE 111. Air Force Military Physical Conditioning. 1 Hr. Introduction to basic conditioning techniques for military training.

PE 112. Gymnastics Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for gymnastics.

PE 113. Soccer Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for soccer.

PE 114. Tennis Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for tennis.

PE 115. Volleyball Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for volleyball.

PE 116. Wrestling Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for wrestling.

PE 117. International Wrestling. 1 Hr. Introduction to beginning knowledge and skills in international wrestling.

PE 118. Swim Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for swimming.

PE 119. Track and Field Weight Conditioning. 1 Hr. Introduction to basic weight training techniques for track and field.

PE 120. Canoeing. 1 Hr. PR: Swimming skill. Types of canoeing strokes, life-saving techniques for recreational canoeing.

PE 122. Billiards. 1 Hr. Introduction to beginning knowledge and skills in billiards.
PE 123. Advanced Billiards. 1 Hr. Introduction to advanced knowledge and skills in billiards.

PE 125. Aerobics. 1 Hr. Introduction to beginning knowledge and skills in aerobics.

PE 126. Aqua Aerobics. 1 Hr. Introduction to beginning knowledge and skills in aqua aerobics.

PE 127. Clogging. 1 Hr. Introduction to beginning knowledge and skills in clogging.

PE 128. Intermediate Clogging. 1 Hr. This class reviews basic clogging steps; introduces intermediate steps used in more advanced clogging routines, and gives ample time for practice.

PE 130. Flag Football. 1 Hr. Introduction to beginning knowledge and skills in flag football.

PE 131. Frisbee. 1 Hr. Introduction to beginning knowledge and skills in frisbee.

PE 134. Gymnastics. 1 Hr. Introduction to beginning knowledge and skills in gymnastics.

PE 135. Horsemanship 1. 1 Hr. Introduction to beginning knowledge and skills in horsemanship.

PE 136. Horsemanship 2. 1 Hr. Introduction to intermediate and advanced knowledge in horsemanship.

PE 137. Ice Skating. 1 Hr. Introduction to beginning knowledge and skills in ice skating.

PE 138. Snow Skiing. 1 Hr. Introduction to beginning and intermediate knowledge and skills in snow skiing.

PE 141. Movement Education and Rhythms. 1 Hr. Introduction to knowledge and skills used to prepare elementary education teachers to teach movement education and rhythmic activities.

PE 142. Elementary Physical Education. 1 Hr. Introduction to knowledge and skills used to prepare elementary education teachers to teach elementary sport skills.

PE 143. Intermediate Ice Skating. 1 Hr. PR: 137 or equivalent Introduction to intermediate/advanced knowledge and skills in ice skating.

PE 144. Aikido. 1 Hr. Introduction to beginning knowledge and skills in aikido.

PE 145. Karate. 1 Hr. Introduction to beginning knowledge and skills in karate.

PE 146. Self-Defense. 1 Hr. Introduction to beginning knowledge and skills in self defense.

PE 147. Kung Fu. 1 Hr. Introduction to beginning knowledge and skills in kung fu.

PE 148. Beginning Jujitsu. 1 Hr. Introduces students to a powerful self-defense technique originally developed in Japan, a precursor to Judo and Aikido.

PE 149. Tae Kwon Do. 1 Hr. Introduction to beginning knowledge and skills in tae kwon do.

PE 150. Martial Arts Fitness. 1 Hr. Introduction to beginning knowledge and skills in martial arts fitness.

PE 151. Advanced Tae Kwon Do. 1 Hr. This course builds on the techniques learned in PE 149, and introduces additional skills into practice and free sparring.

PE 152. Beginning Kickboxing. 1 Hr. An introduction to the popular martial art and competitive sport of kickboxing. Emphasis is given to building flexibility and strength, the foundations of powerful kicking and punching techniques.

PE 153. Yoga for Fitness. 1 Hr. The course introduces the student to basic yoga techniques that can be practiced as a way of developing a wide variety of sports.

PE 154. Racquetball. 1 Hr. Introduction to beginning knowledge and skills in racquetball.

PE 155. Handball. 1 Hr. Introduction to beginning knowledge and skills in handball.

PE 156. Riflery. 1 Hr. Introduction to beginning knowledge and skills in riflery.

PE 157. Slow Pitch Softball. 1 Hr. Introduction to beginning knowledge and skills in slow pitch softball.

PE 158. Indoor Soccer. 1 Hr. Introduction to beginning knowledge and skills in indoor soccer.

PE 159. Soccer. 1 Hr. Introduction to beginning knowledge and skills in soccer.

PE 160. Beginning Tennis. 1 Hr. Introduction to beginning knowledge and skills in tennis.

PE 161. Tennis. 1 Hr. Introduction to basic knowledge and skills for people who are familiar with tennis.
PE 162. Intermediate Tennis. 1 Hr. Introduction to intermediate/advanced knowledge and skills in tennis.

PE 164. Weight Training. 1 Hr. Introduction to beginning knowledge and skills in weight training.

PE 165. Conditioning. 1 Hr. Introduction to beginning knowledge and skills in conditioning.

PE 166. Conditioning/Weight Training. 1 Hr. Introduction to beginning knowledge and skills in conditioning and weight training. (Activity)

PE 169. Outdoor Navigation and Survival. 1 Hr. The objective of this course is to provide a comprehensive overview of outdoor navigation and survival techniques.

PE 170. Volleyball. 1 Hr. Introduction to beginning knowledge and skills in volleyball.

PE 171. Caving Basics. 1 Hr. This course provides an overview of the activity of caving. Course content will address the equipment, skills, and knowledge necessary to safely participate in the activity of caving at the basic level.

PE 172. Cycling Basics. 1 Hr. Provides a comprehensive overview of the activity of cycling. The course content will address the equipment, skills, and knowledge necessary to safely participate in the life-long activity of cycling for fitness and sport.

PE 173. Beginning Swimming. 1 Hr. Introduction to beginning knowledge and skills in swimming.

PE 174. Intermediate Swimming. 1 Hr. Introduction to intermediate knowledge and skills in swimming.

PE 175. Lifeguard Training. 2 Hr. Red Cross certification for lifeguards.

PE 176. Advanced Swimming. 1 Hr. Introduction to advanced knowledge and skills in swimming.

PE 177. Adventure Racing Basics. 1 Hr. The objective of this course is to provide students with a conceptual and experiential introduction to several of the common components found in the sport of adventure racing.

PE 179. Orientation to Scuba. 1 Hr. Introduction to beginning knowledge and skills in scuba diving.

PE 180. Triathlon Training. 1 Hr. This course provides an overview of the sport of triathlon. The course content will address the equipment, skills, and knowledge necessary to safely participate in the life-long activity of triathlon for fitness and sport.

PE 181. Rock Climbing Basics. 1 Hr. This course provides an overview of the activity of rock climbing. The course content will address the equipment, skills, and knowledge necessary to safely participate in the activity of rock climbing on a top-rope system.

PE 182. Bowling. 1 Hr. Introduction to beginning knowledge and skills in bowling.

PE 183. Wilderness First Aid Basics. 1 Hr. The objective of this course is to provide students with the knowledge and skills necessary to manage emergency medical situations when they occur in a delayed-help and/or wilderness setting.

PE 184. Snow Sport Basics. 1 Hr. The objective of this course is to provide students with a comprehensive overview of several common snow sports including downhill snow skiing, snowboarding, and Nordic skiing.

PE 185. Fencing. 1 Hr. Introduction to beginning knowledge and skills in fencing.

PE 186. Outdoor Leisure Pursuits. 1 Hr. Introduction to knowledge and skills in outdoor leisure pursuits.

PE 187. Golf. 1 Hr. The course is designed to introduce students to the rules, skills, and strategies involved in golf.

PE 188. Folk, Square, and Ballroom Dance. 2 Hr. This class will introduce the student to beginning levels of folk, square, and ballroom dance.

PE 189. Outdoor Living Skills. 1 Hr. This course will provide a comprehensive overview of the equipment, skills, and knowledge necessary to safely and comfortably spend time in a wilderness setting while backpacking, hiking, and/or camping.

PE 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Physical Education/Teaching (PET)

PET 101. Games in American Culture. 3 Hr. Examination of how the social history of a variety of American physical games has impacted their development and conversely how the games have impacted American Society.

PET 124. Human Body: Structure and Function. 2 Hr. Overview of the structure and function of the organ systems in the human body. Topics covered include the skeletal, muscular, nervous, digestive, respiratory, and cardiovascular systems.

PET 125. Principles of Human Movement. 2 Hr. PR: PET 124. This course is designed to introduce prospective physical educators to the principles of human movement. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

PET 167. Introduction to Physical Education. 3 Hr. Historical and philosophical bases, major issues, and professional practices in physical education teaching.

PET 175. Motor Development. 3 Hr. To examine changes in human movement behavior across the lifespan and the factors that contribute to those changes.

PET 180. Practica in Elementary Methods. 3 Hr. This course has been designed to provide students with opportunities to develop the skills necessary to justify elementary physical education, plan and teach developmentally and instructionally appropriate lessons, and analyze teaching performances and engage in reflection.

PET 181. Educational Games and Activities. 2 Hr. This course has been designed to assist perspective physical education teachers in developing cognitive, affective, and psychomotor competencies for teaching elementary games in physical education.

PET 185. Teaching Elementary Rhythms. 1 Hr. This course has been designed to assist prospective physical education teachers in developing cognitive, affective, and psychomotor competencies for teaching elementary rhythms in physical education.

PET 206. Behavioral Technology for Physical Education. 2 Hr. Basic concepts and instructional techniques associated with applying behavior analysis to school-aged children.

PET 228. Curriculum in Physical Education. 3 Hr. PR: Admission to the Physical Education Teacher Certification Program. Examination of curriculum and curriculum development; discussion of "hidden curriculum" issues.

PET 233. Pedagogy Theory and Application. 5 Hr. PR: Admission to the Physical Education Teacher Certification Program. Applied pedagogical theory, including assessment, planning, design, management, and delivery of instruction in physical education settings.

PET 234. Physical Education Teaching Practicum. 1 Hr. Demonstration of competencies in an instructional setting involving the general population of college students. Population of college students.

PET 235. Movement Analysis. 3 Hr. PR: Admission to Physical Education Teacher Certification Program. Basic principles of movement analysis, techniques of feedback about skills and performance for school-aged children.

PET 236. Special Physical Education. 2 Hr. Examines motor developmental characteristics of various handicapped groups and emphasizes physical education role in remediation of possible developmental deficiencies.

PET 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PET 324. Water Safety Instructorships. 2 Hr. PR: Senior Lifesaving Certification. Teaching methods in swimming and water safety. Meet American Red Cross certification standards. Course completion carries eligibility for teaching swimming, lifesaving, and water safety.

PET 330. Exercise for School-Aged Children. 3 Hr. Basic movement analysis; techniques of feedback about skills and performance for school-aged children.

PET 337. Teaching Track and Field. 2 Hr. Basic concepts and instructional techniques for teaching track and field in public schools. (Activity)

PET 338. Teaching Wrestling. 1 Hr. Basic concepts and instructional techniques for teaching wrestling in public schools. (Activity)

PET 339. Teaching Volleyball. 1 Hr. Basic concepts and instructional techniques for teaching volleyball in public schools. (Activity)

PET 340. Teaching Soccer. 1 Hr. Basic concepts and instructional techniques for teaching soccer in public schools. (Activity)

PET 341. Teaching Basketball. 1 Hr. Basic concepts and instructional techniques for teaching basketball in public schools. (Activity)
PET 342. Teaching Flag Football. 1 Hr. Basic concepts and instructional techniques for teaching flag football in public schools. (Activity.)

PET 343. Physical Education for Elementary Teachers. 2 Hr. Philosophy, objectives, curriculum, and methods of teaching physical education activities for children.

PET 344. Teaching Field/Floor Hockey. I, II. 1 Hr. PR: Admission to the Physical Education Teacher Certification Program. Basic concepts and instructional techniques for teaching field/floor hockey in public schools. (Activity) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

PET 345. Teaching Sport Education. 1 Hr. The conceptual model and the planning, instructional, and assessment skills required for its successful implementation.

PET 349. Fitness Education. 2 Hr. This course introduces prospective physical education teachers to health-related fitness foundations and components, appropriate curriculum for K-12 and effective teaching and assessment principles. Physical best Health/Fitness Specialist Certificate offered.

PET 350. Teaching Primary Physical Education. 1 Hr. Introduces prospective physical education teachers to the unique needs and characteristics of young children. Special emphasis is placed on developmentally appropriate practice. Students participate in clinical laboratory experiences involving young children.

PET 351. Educational Gymnastics. 1 Hr. This course has been designed to provide students with opportunities to develop the lesson planning and teaching skills necessary to provide instruction in educational gymnastics.

PET 352. Teaching Elementary Fitness Education. 3 Hr. Foundations, components of health-related fitness as well as appropriate curriculum for K-12, effective teaching principles, and the assessment of health-related fitness. Students will become eligible for Physical Best Health-Fitness Specialist Certification.

PET 354. Teaching Archery and Bowling. 1 Hr. Introduce to prospective physical education teachers basic archery and bowling instructional techniques, concepts, and strategies for teaching school-aged children.

PET 355. Teaching Aquatics. 1 Hr. Basic concepts and instructional techniques for teaching aquatics in public schools. (Activity.)

PET 356. Teaching/Using Lead-Up Games. 2 Hr. Basic lead-up games and activities appropriate for school-aged children; development of cognitive, affective, and psychomotor competencies in rhythms, games and sport activities for middle childhood students. students.

PET 357. Teaching Early Childhood Activities. 2 Hr. Development of cognitive, affective, and psychomotor competencies for teaching students.

PET 358. Teaching Softball/Baseball. 1 Hr. Basic concepts and instructional techniques for softball/baseball in public schools. (Activity.)

PET 359. Teaching Elementary Rhythms. 1 Hr. Developing the cognitive, affective, and psychomotor competencies for teaching elementary rhythms in physical education.

PET 360. Synchronized Swimming. 1 Hr.

PET 361. Elementary Fitness Lab. 2 Hr. PR: PET 349. Introduces prospective teachers to the unique fitness needs of elementary and middle school children. Students participate in a clinical lab experience with children.

PET 366. Advanced Gymnastics. 2 Hr.

PET 370. Teaching Elementary Physical Education. 2 Hr. This is about the content and methods of teaching elementary physical education.

PET 384. Kinderskills/Gym. 2 Hr. This course stresses developing, implementing and evaluating appropriate movement experiences for pre-school children. A laboratory with children is included.

PET 400, Kinderskills/Pool. 2 Hr. This course stresses developing, implementing, and evaluating appropriate movement experiences for pre-school children in the aquatic environment. A laboratory with children is included.

PET 410. Laboratory in Pre-School Physical Education. 1-6 Hr Applied clinical experiences in a physical activity program, which focuses on developing the motor skills of young children. Students can choose between land-based or water-based learning environments. Open to all majors.

PET 420. Laboratory in Physical Education. 1-6 Hr. This course introduces students to the unique physical fitness needs of elementary and middle school children. Students participate in a clinical lab experience with children. Open to all majors.

PET 446. Teaching Badminton. 1 Hr. Basic concepts and instructional techniques for teaching badminton in public schools. (Activity.)
PET 448. Teaching Golf. 1 Hr. Basic concepts and instructional techniques for teaching golf in public schools. (Activity.)

PET 451. Secondary Fitness Laboratory. 1 Hr. Scientific principles of strength conditioning and aerobic training.

PET 452. Teaching Outdoor Leisure Pursuits. 2 Hr. Basic concepts and instructional techniques for teaching basic backpacking, orienteering, and snow skiing in public schools. (Activity.)

PET 453. Teaching Dance in Physical Education. 2 Hr. Basic concepts and instructional techniques for teaching dance in physical education in public schools. (Activity.)

PET 460. Teaching Tennis. 1 Hr. Basic concepts and instructional techniques for teaching tennis in public schools. (Activity.)

PET 477. Special Physical Education Practicum. 1 Hr. PR: Open to departmental majors only. A supervised practice teaching experience in special physical education.

PET 483. Issues in Physical Education. 2 Hr. Issues affecting the teaching of physical education links the elements of the student's professional preparation.

PET 485. Supervision in Physical Education. 1 Hr. Evaluation and feedback techniques for supervising physical education teachers.

PET 487. Student Teaching: Elementary. 3 Hr. COREQ: PET 488. A final, school-based practice teaching experience in elementary schools.

PET 488. Student Teaching: Secondary. 3 Hr. COREQ: PET 487. A final, school-based practice teaching experience in secondary schools.

PET 489. Student Teaching Seminar. 2 Hr. COREQ: PET 487 and PET 488. Discussions to enhance communication concerning the program's student teaching and stimulate critical thinking about the student teaching experience. (Seminar.)

PET 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

PET 491 A-Z. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PET 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

PET 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PET 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

PET 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

PET 496. Senior Thesis. 1-3 Hr. PR: Consent.

PET 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Pharmacy (PHAR)
PHAR 449. Drugs and Medicines. 1. 3 Hr. (Not intended for pharmacy students.) PR: General biology or consent. A course intended to introduce a variety of university students to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.

PHAR 497. Research. 1-6 hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation.

PHAR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Philosophy (PHIL)
PHIL 100. Problems of Philosophy. 3 Hr. An elementary examination of such philosophical problems as the mind-body problem, the existence of God, freedom and determinism, and the nature of persons and their knowledge.
PHIL 120. Introduction to Ethics. 3 Hr. Topics include the nature of the good life, whether ethics is relative or there are universal moral truths, the relationship between self-interest and morality, virtues and vices, and the nature of right and wrong.

PHIL 130. Current Moral Problems. 3 Hr. An examination of current moral problems. Topics include some of the following: abortion, euthanasia, sexism and sexual equality, preferential treatment, animal rights, sexual morality, pornography, economic justice, paternalism, punishment, and nuclear deterrence.

PHIL 140. Historical Introduction to Philosophy. 3 Hr. An introductory survey of the major philosophers and philosophical movements from ancient times to the present.

PHIL 170. Introduction to Critical Reasoning. 3 Hr. An elementary study of critical thinking and reasoning. For students who want to improve their skills in recognizing fallacious patterns of reasoning, constructing acceptable arguments, and criticizing faulty lines of reasoning.

PHIL 210. Philosophy of Fundamentalism. 3 Hr. Christian fundamentalism as philosophy; analysis of traditional doctrines for rational defense of inerrantist interpretation.

PHIL 244. History of Ancient Philosophy. I. 3 Hr. PR: 3 Hr. in philosophy. An introduction to the philosophies of the pre-Socratics, Plato, Aristotle, the Epicureans, and the Stoics.

PHIL 248. History of Modern Philosophy. II. 3 Hr. PR: 3 Hr. in philosophy. A study of selected writings by major philosophers of the Western world from Descartes to Kant.

PHIL 260. Introduction to Symbolic Logic. I, II. 3 Hr. PR: PHIL 260. An introduction to modern symbolic logic (basically, propositional logic and the predicate calculus) for students who want to acquire the skill to represent symbolically the form of deductive arguments and to test formally for validity.

PHIL 261. Symbolic Logic 2. 3 Hr. PR: PHIL 260. Continuation of PHIL 260, covering relational logic and identity. Additional topics may include alternative methods and systems of logic such as proof trees, axiom systems, alternative operators, modal and many-valued logics, and set theory. (Equiv. to MATH 180.) (Not offered every year.)

PHIL 282. Philosophy of Games. 3 Hr. Definition of “game”; value of games; games as art, science, profession, symbol, education tool, etc. Game theory: its applications and conceptual periphery. Social aspects of play and leisure.

PHIL 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PHIL 301. Metaphysics. I. 3 Hr. PR: 3 Hr. philosophy. Traditional problems associated with reality and experience, universals and particulars, causality, space and time, matter and mind, and the nature of the self.

PHIL 302. Theory of Knowledge. II. 3 Hr. PR: 3 Hr. philosophy. The nature and scope of human knowledge. Topics may include perception, belief, truth, evidence, certainty, and skepticism.

PHIL 304. Feminist Philosophy. 3 Hr. PR: 3 Hr. philosophy. An examination of fundamental metaphysical, methodological, ethical and legal issues in feminist philosophy.

PHIL 306. Philosophy of Mind. 3 Hr. PR: 3 Hr. philosophy or psychology major. Topics to be selected from: the mind-body problem, psychological explanation, psychology and the neurosciences, personal identity, consciousness, artificial intelligence, mental representation, emotions, intentionality, folk psychology, and other minds.

PHIL 308. Philosophy of Religion. 3 Hr. PR: 3 Hr. philosophy or religious studies interdepartmental major. Examines questions of belief in God’s existence, life after death, the problem of evil, determinism and divine foreknowledge, or other topics bearing upon the nature of a religious orientation to life.

PHIL 310. Philosophy of Science. 3 Hr. PR: 3 Hr. philosophy or science major. Philosophical problems associated with the concepts and methodology of science.

PHIL 312. Philosophy of Social Sciences. 3 Hr. PR: 3 Hr. philosophy or major in one of the social sciences. Philosophical problems associated with the concepts and methodology of the social sciences.

PHIL 321. Ethical Theory. II. 3 Hr. PR: 3 Hr. philosophy. Topics to be selected from the following: an examination of major ethical theories, justification in ethics, moral truth, ethical skepticism, moral rights and duties, and the meaning of ethical concepts.

PHIL 323. Social and Political Philosophy. I. 3 Hr. PR: 3 Hr. philosophy or political science major. An examination of the relationships among the individual, society and the state. Possible topics include justifications of the state, justice, rights, liberty, equality, and arguments for socialism and capitalism.

PHIL 325. Philosophy of Law. II. 3 Hr. PR: 3 Hr. philosophy or pre-law student. An introduction to the philosophical study of law; topics to be selected from: theories of the nature of law, legal obligation, responsibility, punishment, free speech, paternalism, legal moralism, and legal ethics.
PHIL 331. Health Care Ethics. 3 Hr. PR: 3 Hr. philosophy; or pre-med or health sciences student. Topics: Clinician-patient relationship, life-sustaining treatment, physician-assisted death, physician-nurse conflicts, confidentiality, research, reproductive technology, abortion, maternal/fetal conflicts, genetics, rationing, and access.

PHIL 346. History of Ethics. I. 3 Hr. PR: 3 Hr. philosophy. An examination of such issues as the nature of the good life, the just society, and our moral responsibilities. Such major philosophers as Plato, Aristotle, Aquinas, Kant, and Mill will be studied.

PHIL 350. Philosophies of Asia. 3 Hr. PR: 3 Hr. philosophy. A critical, historical examination of the writing of the classic philosophers of India and China.

PHIL 351. Topics in Medieval Philosophy. 3 Hr. PR: 3 Hr. philosophy. Introduction to the philosophies of St. Augustine, St. Thomas Aquinas, Peter Abelard, William of Occam, and other selected figures from the Medieval period.

PHIL 352. American Philosophy. 3 Hr. PR: 3 Hr. philosophy or history or English major. A study of the ideas and movements in American philosophical thought from Colonial times to the early twentieth century, including such topics as the American enlightenment, transcendentalism, social Darwinism, idealism, and pragmatism.

PHIL 353. Analytic Philosophy. 3 Hr. PR: 3 Hr. philosophy. A critical study of twentieth-century Western analytical philosophy (for example, Russell, Logical Positivism, Wittgenstein).

PHIL 354. Themes in Continental Philosophy. 3 Hr. Nineteenth and twentieth-century French and German philosophers such as Hegel, Marx, Nietzsche, Heidegger, Habermas, Sartre, Foucault, Derrida; philosophers and themes will vary.

PHIL 355. Existentialism. 3 Hr. PR: 3 Hr. philosophy or literature course in existentialism. Survey of the major existentialist thinkers.

PHIL 360. Mathematical Logic 1. 3 Hr. PR: PHIL 260. Axiomatic method, “naive” and axiomatic set theory, Russell’s Paradox, infinity and uncountability, “reduction” of mathematics to set theory, introduction to consistency and completeness of logic, Godel’s proof of the incompleteness of arithmetic. (Equiv. to MATH 280.)

PHIL 370. Philosophy of Language. 3 Hr. PR: 3 Hr. in philosophy or be a linguistics or language major. Philosophical problems concerning the nature of meaning and language.


PHIL 416. Philosophy of History. 3 Hr. PR: 6 Hr. in philosophy or history major. Theoretical problems such as the nature of historical explanation, relativism, and the status of speculative principles of history.

PHIL 424. Philosophy and Culture Criticism. I. 3 Hr. PR: 3 Hr. of philosophy at 100-level or above. Recent philosophical analyses and critiques of modern Western culture; its relationship to discursive, social, economic, disciplinary, and gendering practices.

PHIL 460. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

PHIL 490. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PHIL 492. Directed Studies. 1-3 Hr. Directed study, reading, and/or research.

PHIL 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PHIL 494 A-Z. Seminar. II. 3 Hr. PR: 12 Hr in philosophy, 6 Hr at the 300 level or above, and Junior or Senior standing or consent. Presentation and discussion of topics of mutual concern to students and faculty. Advanced and in-depth philosophical investigation of selected problems and/or major philosophers. May be repeated with permission.

PHIL 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

PHIL 496. Senior Thesis. 3 Hr. PR: Senior Standing or Consent. Individualized project culminating in a major paper on a philosophical topic or author, written under the supervision of a faculty member with expertise in that topic or author.

PHIL 497. Research. 1-6 Hr. PR: Consent. Independent research projects.

PHIL 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.
Physical Science (PHSC)
PHSC 101. Introductory Physical Science. 4 Hr. (For Elementary Education majors only.) Emphasis on practicing reasoning abilities necessary to carry out simple scientific inquiry. Major concepts include properties of matter and astronomy. Majority of class time is spent in laboratory activities and solving problems using an activity-based approach.

PHSC 102. Introductory Physical Science. 4 Hr. PR: PHSC 101. Continuation of PHSC 101. Concepts include electricity, motion, heat and temperature, energy, and chemistry.

PHSC 111. General Physical Science. 4 Hr. (Strongly recommended for freshmen and sophomores only.) Basic principles of physics and astronomy and science laboratory skills which are applicable to living in a modern and technological society. Included: energy resources, radioactivity, satellites, rockets, the solar system, and the origin of the universe.

PHSC 112. General Physical Science. 4 Hr. (Strongly recommended for freshmen and sophomores only.) Basic principles of chemistry, geology and meteorology and laboratory skills which are applicable to living in a modern technological society. Included: pharmaceuticals, household products, pollution, weather, earth minerals, earthquakes.

PHSC 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PHSC 490. Teaching Practicum. 1-3 Hr. PR: PHYS 105 or consent. Teaching practice as a tutor or assistant. Opportunity to help teach an activity-based science course under the direction of experienced instructors. Emphasis on developing inquiry teaching skills useful for all levels of classroom instruction.

PHSC 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PHSC 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

PHSC 496. Senior Thesis. 1-3 Hr. PR: Consent.

PHSC 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Physics (PHYS)
PHYS 101. Introductory Physics. 4 Hr. PR: (MATH 126 and PR OR CONC: MATH 128) or MATH 129 OR MATH 150 OR MATH 155 OR MATH 156. The fundamental philosophy and principles of physics are applied to studies of mechanics, sound, heat, and thermodynamics through demonstrations, problems, and experiments. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

PHYS 102. Introductory Physics. 4 Hr. PR: PHYS 101 and MATH 128. The fundamental philosophy and principles of physics are applied to studies of electricity, magnetism, optics, light, and atomic and nuclear physics through demonstrations, problems, and experiments. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

PHYS 105. Conceptual Physics. 4 Hr. Basic principles of physics and their relationship to our modern technological society. Major topics include properties of matter, electricity, optics, motion, heat and temperature, and energy. Nonmathematical approach emphasized.

PHYS 107. Physics of Music. 3 Hr. For all students including those in the liberal and fine arts. (No science or music prerequisites.) The physical and psychophysical principles underlying the nature, production, transmission, reception, and reproduction of sound.

PHYS 108. Light, Vision and Color. 3 Hr. For all students including those in liberal and fine arts. Descriptive course emphasizing the basic principles of light with applications to color vision and optical phenomena in everyday environment and technology.

PHYS 111. General Physics. 4 Hr. PR: A grade of C or better in MATH 155. Survey of classical mechanics, thermodynamics and waves.

PHYS 112. General Physics. 4 Hr. PR: PHYS 111. Survey of electricity, magnetism, and optics.

PHYS 113. General Physics Honors. 1 Hr. Additional honors hour companion course for Physics 111 in the spring semester and Physics 112 in the fall semester.

PHYS 199. Orientation to Physics. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.
PHYS 211. Introduction to Mathematical Physics. 3 Hr. PR: MATH 251, and PHYSICS 112. Review of basic calculus with application to Physics; e.g. vector calculus and Maxwell’s Equations, Fourier Series and the vibrating string, eigenvalues, eigenvectors and coupled oscillators. Complex algebra, linear algebra, differential equations, partial differential equations, Bessel functions, Legendre Polynomials, and Fourier Transforms.

PHYS 213. Introductory Modern Physics. 4 Hr. PR: PHYS 112 and MATH 156. Topics of modern physics of interest to science majors and engineers; atomic and molecular structure and spectra, solid state and nuclear physics, relativity, and elementary particles.

PHYS 225. Medical Imaging Physics. 3 Hr. Introduces the physics of medical imaging and is intended for non-physics majors. The fundamental concepts and clinical applications of the major imaging techniques are presented. The subject matter is ideal for pre-med majors.

PHYS 250. Computational Physics. 2 Hr. An introduction to the computational techniques (programming in FORTRAN and computer graphics) to solve physics problems.

PHYS 290. Teaching Practicum. 1-3 Hr.

PHYS 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PHYS 313. Introductory Electronics. 3 Hr. PR: PHYS 111 and PHYS 112. Principles and applications of integrated circuits and digital electronics.

PHYS 314. Introductory Modern Physics. 4 Hr. PR: PHYS 112 and MATH 156. Topics of modern physics of interest to science majors and engineers; atomic and molecular structure and spectra, solid state and nuclear physics, relativity, and elementary particles.

PHYS 321. Optics. 3 Hr. PR: PHYS 111 and PHYS 12 and MATH 261 A basic course in physical optics covering wave mathematics, propagation, polarization, interference, and diffraction; applications in geometrical optics and selected topics in scattering and quantum optics.

PHYS 325. Atomic Physics. 3 Hr. PR: PHYS 213. Relativistic mechanics, atomic structure, and spectra.

PHYS 327. Theoretical Mechanics 1. 3 Hr. PR: PHYS 111 and PHYS 112 or equiv.; PR or CONC: MATH 261. Scalar, vector, and tensor fields; curvilinear coordinate systems. Kinematics and dynamics of particles, systems of particles and rigid bodies.

PHYS 331. Theoretical Mechanics 2. 3 Hr. PR or CONC: PHYS 331 or equiv. and MATH 261. Scalar, Vector, tensor fields; curvilinear coordinate systems. Lagrangian and Hamiltonian formulation. Relativistic motion.

PHYS 332. Electricity and Magnetism 1. 3 Hr. PR: PHYS 111 and PHYS 112 or equiv. and PR or Conc.:MATH 261. Electrostatics, electrostatics in matter, magnetostatics, magnetostatics in matter.

PHYS 333. Electricity and Magnetism 2. 3 Hr. PR or CONC: PHYS 331 or equiv. and MATH 261. Maxwell’s equations, reflection and refraction, wave guides and cavities. wave guides and cavities.

PHYS 341. Advanced Physics Laboratory. 1-3 Hr. PR: PHYS 111 and PHYS 112 and PHYS 213. Experiments in physics designed to complement theory courses, give experience in data taking and instrumentation, and learn methods of data evaluation and error analysis.

PHYS 448. Physics Seminar. (No credit.) (Suggested for junior, senior, and graduate Physics majors.) These lectures acquaint students with topics of current interest in physics.

PHYS 451. Introductory Quantum Mechanics. 3 Hr. PR: PHYS 213 and MATH 261. Fundamental principles of quantum mechanics; state functions in position and momentum space, operators, Schrodinger’s equation, applications to one-dimensional problems, approximation methods, the hydrogen atom, angular momentum and spin.

PHYS 461. Thermodynamics and Statistical Mechanics. 3 Hr. PR: PHYS 213 or equiv. and MATH 251. Introduction to the statistical foundations of thermodynamics; applications of the fundamental laws of thermodynamics to physical and chemical systems.

PHYS 463. Nuclear Physics. 3 Hr. PR: PHYS 213 and MATH 251. Study of characteristic properties of nuclei and their structure as inferred from nuclear decays and reactions, leading to a knowledge of nuclear forces and models.

PHYS 471. Solid State Physics. 3 Hr. PR: PHYS 213 or equiv. and MATH 251. Properties of crystalline solids; includes crystal structure, interatomic binding, lattice vibrations, electron theory of metals, and the band theory of solids with some applications.

PHYS 481. Plasma Physics. 3 Hr. PR: PHYS 111 and PHYS 112 and PR or CONC: PHYS 334. Introductory course in the physics of ionized gases; particle and fluid treatment of plasmas, waves, equilibrium and stability, kinetic theory, and nonlinear effects.
PHYS 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PHYS 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PHYS 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

PHYS 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

PHYS 496. Senior Thesis. 1-3 Hr. PR: Consent.


PHYS 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Plant Science (PLSC)

PLSC 105. Plants and People: Past and Present. 3 Hr. A course focused on exploring the interaction between plant and humans, and the impact plants have had, and have on human society.

PLSC 206. Principles of Plant Science. 4 Hr. Anatomy, morphology, and physiology of higher plants. Study of growth and development of economically important plants, their culture, and products.

PLSC 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PLSC 453. Organic Crop Production. 3 Hr. PR: PLSC 206 and AGRN 202 and AGRN 203 or Consent. Principles, practices, history, philosophy, and economics of organic farming and gardening. The National Organic Rule, farm certification, crop/livestock systems and international organic production. (Students may not receive credit for both PLSC 453 and PLSC 553).

PLSC 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

PLSC 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PLSC 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PLSC 493A. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PLSC 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

PLSC 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

PLSC 496. Senior Thesis. 1-3 Hr. PR: Consent.

PLSC 497. Research. 1-15 hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. Grading may be S/U.

PLSC 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Petroleum and Natural Gas Engr (PNGE)

PNGE 200. Introduction to Petroleum Engineering. 3 Hr. PR: Sophomore standing. Introduction: origin, migration, and accumulation of petroleum; reservoir fluids properties; properties of reservoir rocks; exploration; drilling technology; reservoir engineering; well completions; production engineering. Open to all students.

PNGE 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PNGE 300. Transport Phenomena in Petroleum Engineering. 3 Hr. PR: MAE 241. Introduction to fluid flow in pipes, two-phase flow, rotary drilling hydraulics, primary cementing jobs, flow calculations, flow measuring devices, fluid machinery, dimensional analysis, and heat transfer.

PNGE 310. Drilling Engineering. 4 Hr. PR: GEOL 101 and MAE 331. Rock properties, functions and design considerations of rotating system, hoisting system, and circulation system; drilling fluids calculations and selections; hydraulic programs; drilling optimization; casing string design; cementing programs; and pressure control.

PNGE 312. Drilling Fluids Laboratory. 1 Hr. PR or CONC: PNGE 310. Topics include clay hydration, viscosity of water-based fluids, mud weight control, filtration studies, thinning agents, chemical contaminants, lime muds, polymer muds, rehoelogical models, and liquid and solid determination.

PNGE 332. Petroleum Properties and Phase Behavior. 3 Hr. PR: PNGE 200 and CHEM 116 and (ENGL 102 or ENGL 103). Theoretical and applied phase behavior of hydrocarbon system and hydrocarbon fluids. Applications to petroleum reservoirs and production engineering design. (2 hr. lec., 3 hr. lab.)

PNGE 333. Basic Reservoir Engineering. 3 Hr. PR: PHYS 112 and MAE 331. Basic properties of petroleum reservoir rocks. Fluid flow through porous materials. Evaluation of oil and gas reserves.

PNGE 400. Petroleum Engineering Ethics. 1 Hr. PR: Senior standing. Introduction to petroleum and natural engineering ethics and moral issues concerning safety in engineering practice as well as those arising for engineers employed by corporations. Professionalism and professional registration.

PNGE 405. Multidisciplinary Team Project. 1 Hr. PR: PNGE 434 and PNGE 470. Introduction to the need to seek input from other professionals, incorporate constraints imposed by other disciplines in solving petroleum and natural gas engineering design problems, and working with other professionals in a multi-disciplinary team.

PNGE 420. Production Engineering. 3 Hr. PR: PNGE 310 and PNGE 332. Well completion, performance of Productive formulation, drill stem tests, completion of wells, flowing wells, gas lift methods and equipment, pumping installation design, well stimulation, emulsions, treating, gathering, and storage of oil and gas, field automation. (3 hr. lec.)

PNGE 432. Petroleum Reservoir Engineering Laboratory. 1 Hr. PR or CONC: PNGE 333. Laboratory evaluation of basic and special petroleum reservoir rocks. 3 Hr. lab.

PNGE 434. Applied Reservoir Engineering. 3 Hr. PR: MATH 261 and PNGE 333 and PR or CONC: STAT 215 or IENG 213. Application of reservoir engineering data to calculation of recovery potentials and prediction of reservoir performance under a variety of production methods to effect maximum conservation.

PNGE 441. Oil and Gas Property Evaluation. 3 Hr. PR: PNGE 333 and PR or CONC: PNGE 420 or Consent. Reserve estimation, decline analysis, petroleum property evaluation, evaluation including interest calculations, cost estimation and tax evaluation. Overview investment decision analysis and computer applications in property evaluation.

PNGE 450. Formation Evaluation. 3 Hr. PR: PNGE 310 and PR or CONC: EE 221 or Consent. Various well logging methods and related calculations with exercises in interpretation of data from actual well logs.

PNGE 460. Well Stimulation Design. 3 Hr. PR: (MAE 243 and PNGE 420 and PNGE 333) or Consent. Fundamentals of well stimulation and treatment design and their applications to low permeability formations.

PNGE 470. Natural Gas Engineering. 4 Hr. PR: PNGE 333 and PR or CONC: MAE 320. Natural gas properties, compression, transmission, processing, and application of reservoir engineering principles to predict the performance and design of gas, gas-condensate, and storage reservoirs. Includes a laboratory devoted to gas measurements. (3 hr. lec., 3 hr. lab.)

PNGE 471. Natural Gas Production and Storage. 3 Hr. PR: PNGE 470. Development of gas and gas-condensate reservoirs; design and development of gas storage fields in depleted gas, gas-condensate, oil reservoirs and aquifers.

PNGE 480. Petroleum Engineering Design. 3 Hr. PR: PNGE 420 and PNGE 434 and PNGE 441 and PR or CONC: PNGE 450. Comprehensive problems in design involving systems in oil and gas production, field processing, transportation, and storage.

PNGE 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

PNGE 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PNGE 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PNGE 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
PNGE 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

PNGE 496. Senior Thesis. 1-3 Hr. PR: Consent.

PNGE 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Political Science (POLS)

POLS 101. Introduction to Political Science. I, II, S. 3 Hr. Introduction to government and politics. Origins, forms, and functions of the state; organization and processes of government; and the behavior of groups and individuals in various political systems.


POLS 103. Global Political Issues. I, II, S. 3 Hr. Analysis of issues in post-cold war international politics, ranging from traditional major power diplomacy and intervention to the newer problems of economic interdependence and development, human rights, population pressures on limited resources, and the environment.

POLS 107. Modern Political Ideologies. I, II. 3 Hr. A survey of some of the major competing ideologies in the modern world, including capitalism, communism, socialism, fascism, and democracy.

POLS 199. Orientation to Political Science. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

POLS 210. Law and the Legal System. I, II, S. 3 Hr. Introductory course on the role of law in the political system. Includes a survey of subfields in United States law and an examination of participants, processes, and policy making in the United States legal system.

POLS 220. State and Local Government. I, II. 3 Hr. The legal basis, structure, politics and operation of state and local governments, in the content of the American federal system.

POLS 230. Introduction to Policy Analysis. I, II. 3 Hr. Examination of the causes and consequences of public policies. Substantive policies examined include: civil rights, housing, social services, environment, health, law enforcement, education, and taxation.

POLS 240. Introduction to Public Administration. I, II. 3 Hr. The development, organization, and processes in governmental administration in the United States.

POLS 250. Introduction to Comparative Politics. I, II. 3 Hr. An introduction to the political and governmental systems of industrialized and developing countries. Focuses on approaches to comparative political study, political cultures and participation, and government structures, processes, and policy performance.

POLS 260. Introduction to International Relations. I, II. 3 Hr. Theories and concepts in international politics and their application to contemporary world politics.

POLS 270. History of Political Thought 1. I. 3 Hr. Major political philosophers and ideas from the Greeks to the 17th century.

POLS 271. History of Political Thought 2. II. 3 Hr. Major political philosophers and ideas of the 17th, 18th, and 19th centuries, including Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Hegel, and Marx.


POLS 300. Empirical Political Analysis. I, II. S. 3 Hr. Designed to provide a basic understanding of how to read and conduct empirical political science research. Topics include research design, hypotheses testing, data collection, and statistical analysis. No prior knowledge of computers or statistics required.

POLS 301. Intro to Intelligence Analysis. 3 Hr. PR: POLS 260. A professionally-oriented survey of the history, logic, and methods of intelligence analysis as applied to policy-making in foreign policy and national security.

POLS 302. Intelligence Analysis Methods. 3 Hr. PR: POLS 260 and POLS 301. An advanced course in the understanding and use of skills, processes, and tools currently used by intelligence analysts in the national security community.

POLS 310. American Presidency. I, II. 3 Hr. Institutional, behavioral, and societal forces which have given rise to the modern presidency; factors which enhance and constrain the exercise of presidential power over those constituencies with which the president must interact; the nature and consequences of the presidential decision-making process; desirability and/or feasibility of reforming the presidency.
POLS 311. Political Parties and Elections. II. 3 Hr. Parties and elections in America; emphasis on nomination and general election processes, campaigns, the mass media, campaign finance, voting, the electoral college, and parties in government.

POLS 312. Appellate Judicial Process. II. 3 Hr. PR: POLS 210 or Consent. The role of appeals courts and judges in American politics. Topics include appellate court organization and processes, the quantitative and qualitative analysis of judicial behavior, and the influence of courts on public policy.

POLS 313. American Constitutional Law. I. 3 Hr. The role of the Constitution in the American political system. Topics include the political concept of constitutionalism; the role of the Supreme Court in the political process; division of powers among the three branches of government; and the constitutional relation between the national government and the states.

POLS 314. Civil Liberties in the United States. I, II. 3 Hr. Issues in constitutional law concerning personal liberties against government action. Topics include free speech, press and association; religious freedoms; abortion; the right to privacy; due process of law; and criminal procedure safeguards.

POLS 315. Law and Public Policy. I, II, S. 3 Hr. PR: POLS 210 or Consent. Advanced examination of the role of trial courts in policymaking, including agenda-setting and policy formulation by courts, the outcomes of policy litigation, and the politics of legal reform.

POLS 316. Public Opinion and Politics. I, II. 3 Hr. In-depth treatment of the origins, content, and impact of public opinion in American politics; political ideology, partisanship, socialization, mass media, opinion polls, and survey research techniques.

POLS 317. Interest Groups and Democracy. I, II, S. 3 Hr. The role of interest groups in American politics, focusing on their distribution and internal dynamics, their involvement in campaigns and elections, their influence on public policy, and their place in a democratic system.

POLS 318. Legislative Process. II. 3 Hr. Structure, organization and processes of legislative bodies; powers of the legislature; detailed study of law-making processes and procedures.

POLS 320. American Federalism and Policy. 3 Hr. Examines the history and philosophical justification of federalism, the relationships among the federal, state and local levels of government, and the contemporary debate over what those governmental relationships should be in America today.


POLS 331. Criminal Law Policy and Administration. I, II. 3 Hr. Legal and administrative approach to policy issues in criminal justice. Focuses on the criminal law, police, court decisions, and the implementation of law and policy in the criminal field.

POLS 333. Politics of Social Welfare. I, II. 3 Hr. Questions of poverty and inequality: who are the poor; what causes economic inequality; what have been governmental and private solutions to the problem of poverty; and what successes and failures have there been in the war against poverty.

POLS 334. Politics of Economic Policy. I, II. 3 Hr. An examination of U.S. economic policy, with an emphasis on the political considerations that influence policy development and implementation in government regulation, taxation, and spending.

POLS 335. Civil Rights Policy and Politics. II. 3 Hr. Analysis of the law, politics, and policy related to discrimination in public accommodations, voting, education, housing and employment based on race, gender, national origin, handicapped status, and age.

POLS 336. Energy Policy and Politics. II. 3 Hr. Explores the formulation and implementation of energy policy, including a discussion of scientific, risk, technological, economic, and political variables affecting policy with emphasis on national security, environmental protection, resource management and economic growth problems.

POLS 337. Gender/Politics and Policy. I. 3 Hr. Comparative study of how gender differences affect politics across the world. Emphasis on advanced industrial democracies. Topics include: political attitudes and behavior, gender differences in political recruitment, and the impact of gender on public policy.

POLS 338. Environmental Policy. I. 3 Hr. Explores the formulation and implementation of environmental policy, using both a policy process approach and policy analysis. Includes a discussion of the scientific, technological, risk, economic, and political variables which affect policy making in this area.

POLS 339. National Security Analysis. 3 Hr. Introduction to the analysis of national security issues. Examines historical development of defense and military policy, arms procurement and transfers, deterrence, the application of game theory, and intelligence analysis.

POLS 342. Bureaucratic Politics. I. 3 Hr. Analysis of the nature and processes of American public administration (political, legal, economic, and social), including the role of bureaucracy in a democracy.
POLS 344. Administrative Law. II. 3 Hr. Administrative powers and limitations; procedures in administrative adjudication and rule-making; discretion, ultra vires as a check on administrators; notice and hearing; administrative penalties; judicial control; and administrative liability.

POLS 350. Government of Japan. II. 3 Hr. Survey of political institutions and governmental processes in Japan with special emphasis on the analysis of political problems in the post-war period.

POLS 351. Russian and Post-Soviet Politics. II. 3 Hr. Survey of politics and government in Russia and in the states of the former Soviet Union.

POLS 352. Politics European Union. 3 Hr. An introduction to the European Union, including its history from the early 1950’s, theories of its development, its institutions and decision processes, its policies, and the issues facing the EU today.

POLS 353. Western Democratic Governments. I, II. 3 Hr. Cross-national and/or country based analysis of selected western democracies. Individual countries analyzed will vary, but may include Canada, Great Britain, France, Italy, and the European Union.


POLS 356. Politics of the Middle East. II. 3 Hr. Survey of the domestic and international political dynamics of the Middle East.

POLS 357. Comparative Law and Politics. 3 Hr. An introduction to the comparative analysis of law and politics. Examines the forms of law, legal communities, judiciaries, and justice systems of polities other than the United States.

POLS 358. Politics of Africa. II. 3 Hr. Historical legacies and current political processes of tropical African countries.

POLS 359. Politics of Terrorism. 3 Hr. Terrorism is a method used against civilian population to affect political change. To understand this, the course will examine the ideology, history and tactics used by those engaged in violence.

POLS 360. International Political Economy. 3 Hr. Analysis of the relationship between international relations and economics. Topics include free trade, globalization, regionalism, and development.

POLS 361. International Law and Institutions. 3 Hr. Analysis of the development of international organization, norms, and law, as well as the creation and functioning of the United Nations and the European Union.

POLS 362. Comparative Foreign Policy. 3 Hr. PR: POLS 260. Introduction to comparative foreign policy focused on political structures and processes in advanced industrial democracies, transitional polities, and Third World states. Includes three weeks’ international system simulation.

POLS 363. International Law. I. 3 Hr. Law governing relations among nations, including development of rules, means of enforcement, and conflict between theory and practice.

POLS 364. American Foreign Relations. I. 3 Hr. PR: POLS 260 or Consent. Examination of contemporary U.S. foreign policy and its historical, cultural, and domestic political roots. Substantive and theoretical issues in understanding foreign relations since WW II, including both continuity and change in the emerging post-cold war system.

POLS 365. Foreign Policy Decision-Making. 3 Hr. PR: POLS 260 An advanced course examining the psychological and political dynamics by which decision-makers formulate foreign policy with emphasis on American national security. Includes three weeks’ simulation.

POLS 366. National Security Analysis. 3 Hr. Introduction to the analysis of national security policy issues. Examines historical development of defense and military policy, arms procurement and transfers, deterrence, the application of game theory, and intelligence analysis.

POLS 367. Latin America in International Affairs. II. 3 Hr. Relations of Latin American states among themselves, with the United States, the United Nations, regional organizations, and nonwestern states. In-depth analysis of the Monroe doctrine and its corollaries and the inter-American system.

POLS 368. Politics of War and Peace. 3 Hr. PR: POLS 260 or Consent. Analysis of great power politics in the international system. Examination of theories of war, historical patterns of the balance of power, and origins of the 20th century’s major conflicts: WW I, WW II, and the Cold War.

POLS 369. Far East International Affairs. II. 3 Hr. International relations of countries of the Far East with emphasis on historic roots of recent conflicts, the roles of the United States and other major powers, confrontation between the countries in the region, and the regional cooperation and security problems in the post-World War II period.
POLS 371. History of Political Thought 2. 3 Hr. Major political philosophers and ideas of the 17th, 18th, and 19th centuries, including Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Hegel, and Marx.

POLS 372. Modern Political Thought. I. 3 Hr. Beginning with early Marxist thought, this course examines the evolution of the concepts of rights, justice, liberty, democracy, and equality from 1850 through the present, using the works of both classical and contemporary political theorists.

POLS 373. American Political Philosophy. I, II. 3 Hr. Major American political ideas and their influence upon American society and government from the seventeenth century to the present.

POLS 375. Psychological Theories of Politics. II. 3 Hr. Introduction to rational choice theory and various psychological theories of politics; application of psychological theories to both international relations and American politics.

POLS 383. Debate. 3 Hr. Intensive research and writing on policy options related to the annual intercollegiate debate topic. Research will focus on both the policy and political implications of enacting and implementing a variety of options.

POLS 389 A-Z. Selected Topics. (Honors.) I, II. 3 Hr.

POLS 452. EU Law/Legal Systems. 3 Hr. An introduction to the politics of law in Europe. Examines the forms of law, legal communities, judicaries, and justice systems of the major European politics (Great Britain, France, and Germany)

POLS 453. EU Law/Institutions. 3 Hr. An examination of the European Union with respect to the evolution of its legal framework, core decision making institutions, and current issues of constitutional prospects, further economic integration, and protection of human rights.

POLS 461. Transformation of War. 3 Hr. The nature of war has changed significantly in the past half-century. This course examines the new aspects of violent conflict, specifically asymmetric war, insurgency, and Fourth-Generation Warfare, through theory and case studies.

POLS 485. Great Books-American Politics. 3 Hr. allows students form all disciplines to explore the history, institutions, and major actors of the American political system and American politics by reading and studying important books and literature in the discipline.

POLS 486. Great Books-Law and Politics. 3 Hr. Course designed to allow the student to engage in a directed, independent examination of law and politics by reading and critiquing significant works on law and politics.

POLS 487. Capstone: Senior Paper. I, II. 3 Hr. One of three capstone options for Political Science majors. Students choosing this option undertake a faculty-supervised independent research project culminating in a written research paper and oral presentation at a faculty/student colloquium.

POLS 488. Capstone: Political Simulation. I, II. 3 Hr. One of three capstone options for Political Science majors. Students choosing this option conduct research and participate in role-playing exercises through planned political simulations involving both U.S. politics and international relations.

POLS 489. Capstone: Citizenship Seminar. I, II. 3 Hr. One of three capstone options for Political Science majors. Students choosing this option participate in a seminar focusing on the role of citizens in a democracy, with emphasis on experimental learning through civic participation.

POLS 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

POLS 491 A-Z. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


POLS 494 A-Z. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

POLS 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

POLS 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

POLS 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

POLS 499 A-Z. Global Service Learning. 3 Hr. PR: Consent.
Portuguese (PORT)
PORT 101. Elementary Portuguese 1. 3 Hr.
PORT 102. Elementary Portuguese 2. 3 Hr. PR: PORT 101 or equiv.
PORT 203. Intermediate Portuguese 1. 3 Hr. PR: PORT 102 or equiv.
PORT 204. Intermediate Portuguese 2. 3 Hr. PR: PORT 203 or equiv.
PORT 293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PORT 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

PORT 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours). Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PORT 493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PORT 496. Senior Thesis. 1-3 Hr. PR: Consent.

PORT 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Plant Pathology (PPTH)

PPTH 409. Nematology. 3 Hr. Nematode biology, ecology, taxonomy, and control, with particular emphasis on plant parasitic forms.

PPTH 470. Forest Pest Management. 4 Hr. PR: (FMAN 311 and BIOL 101 and BIOL 103 and PLSC 206) or BIOL 115 and BIOL 117. Relationship of insects and disease organisms to the forest ecosystem; recognition of agents that affect forest health; management strategies for regulating their damage. (Also listed as ENTO 470.)

PPTH 471. Urban Tree and Shrub Health. 1 Hr. PR: PPTH 470 or ENTO 470 or PPTH 401 and ENTO 404. The unique problems associated with managing trees and woody shrubs in an urban environment will be observed and discussed; management options will be evaluated. (Equiv to ENTO 471).

PPTH 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

PPTH 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PPTH 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PPTH 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

PPTH 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

PPTH 496. Senior Thesis. 1-3 Hr. PR: Consent.

PPTH 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Public Relations (PR)
PR 215. Introduction to Public Relations. 3 Hr. (Open to all University students.) Introduces the student to the principles of public relations. Definition and historical development, opportunities and challenges, techniques and management of public relations are included.

PR 301. Writing for Public Relations. 3 Hr. (open to PR minors only.) PR: JRL 101 and PR 215. Basic writing techniques and tools for public relations practitioners, including news writing, AP style, news releases, media advisories, media lists, pitching stories, presentations, and publications.
PR 319. PR Editing and Design. 3 Hr. PR: JRL 318 and PR 215. Editing and production techniques for public relations media (brochures, reports, newsletters, etc.) including copy preparation, typography, graphic design, layout, and desktop publishing.

PR 321. Public Relations Research and Theory. 3 Hr. PR: STAT 211 and JRL 318 and PR 215.

PR 324. Public Relations Writing and Applications. 3 Hr. PR: PR 319 or JRL 319. Writing, design, graphics, and desktop publishing as major tools of public relations practitioners and planners.

PR 333. Introduction to Web Design. 3 Hr. PR: JRL 215 or Consent. Using the Web in PR campaigns, hand-coding HTML, design concepts, layout, hyperlinks, images, tables, web-production software, establishing and maintenance of web server account, uploading files.

PR 401. Applied Public Relations. 3 Hr. (Open to PR minors only). PR: PR 301. A core class in the Public Relations minor focusing on PR case studies, strategic campaign planning, and tactics. Students develop campaign ideas and strategies and produce an abbreviated campaign plan.

PR 410. Integrated Marketing Communication for Public Relations. 3 Hr. PR: PR 301 or PR 324 or ADV 315. This course provides a comprehensive look at public relations and its role in the integrated marketing communications process. Other IMC elements such as advertising, internet marketing, sales promotion and direct marketing are also discussed.

PR 422. Research and Case Studies. 3 Hr. PR: PR 324 or consent. This course familiarizes students with common PR research methods and their respective strengths and weaknesses. A wide range of actual campaigns, including government, corporate, IMC, international, investor, crisis, and non-profit, are examined and critiqued.

PR 458. Public Health Relations. 3 Hr. PR: PR 422 or consent. In-depth research, study, and development of active PR campaigns in the healthcare field. Students serve as the PR agency for a healthcare-related organization.

PR 459. Public Relations Campaigns-Capstone. 3 Hr. PR: PR 422 or Consent. Capstone seminar designed to give students the opportunity to integrate prior learning in developing a PR campaign for an actual client.

PR 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Course will be graded on a Pass/Fail basis.)

PR 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Course will be graded on a Pass/Fail basis.)

PR 493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

PR 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

PR 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

PR 496. Senior Thesis. 1-3 Hr. PR: Consent. (Course will be graded on a Pass/Fail basis.)

PR 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Physiology (PSIO)
PSIO 241. Elementary Physiology. II. 4 Hr. PR: College biology and chemistry, or Consent. (For undergraduate students in paramedical sciences and nursing students on regional campuses.) Systematic presentation of basic concepts.

PSIO 441. Mechanisms of Body Function. I. 4 Hr. PR: College chemistry, biology, physics, and algebra or graduate status and Consent. A systematic examination of the homestatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relation to normal physiology. 4 hr. lec.

PSIO 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Psychology (PSYC)
PSYC 101. Introduction to Psychology. 3 Hr. Survey of general psychology.

PSYC 201. Psychology as a Profession. 1 Hr. PR: PSYC 101. Orientation to opportunities for experience, employment, and graduate and professional training in psychology.

PSYC 231. Leadership and Human Relations. 3 Hr. PR: PSYC 101. Concentrates on principles of psychology that can be applied to improving relations with others as well as being a more effective leader. Pragmatic orientation includes using the principles to solve problems in relationships, in small organizations, and in large systems.

PSYC 232. Sex Roles and Behavior. 3 Hr. PR: PSYC 101. Relates sex-typed behavior to physiological, social, and cultural processes. Current social concerns such as rape and abortion legislation, child care, and expanded career options for both sexes are examined from a psychological perspective.

Psyc 233. Psychology of Cinema. 3 Hr. This course examines film from a psychological perspective. Areas of focus include the art and science of film production, and cinema’s impact on the individual and society. Analysis of psychological themes is emphasized.

PSYC 241. Introduction to Human Development. 3 Hr. PR: PSYC 101. Survey of human psychological development across the life span with emphasis on change in biological, cognitive, and social-emotional processes. Special attention given to theoretical, conceptual, methodological, and practical issues.

PSYC 251. Introduction to Social Psychology. 3 Hr. PR: PSYC 101. Examination of social interaction and behavior from a psychological perspective. Topics include: attraction, social perception and cognition, attitudes and attitude change, social influence and group process, prosocial behavior and aggression, cultural influence, and prejudice.

PSYC 281. Introduction to Abnormal Psychology. 3 Hr. PR: PSYC 101. Introduction to major categories of behavior disorders; etiology, prevention and treatment.

PSYC 293 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

PSYC 293J. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

PSYC 298. Honors. 1-3Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

PSYC 298A. Honors. 1-3Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

PSYC 298B. Honors. 1-3Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

PSYC 298C. Honors. 1-3Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

PSYC 298D. Honors. 1-3Hr. PR: Students in the Honors Program and consent of the Honors Director. Independent reading, study, or research.

PSYC 301. Biological Foundations of Behavior. 3 Hr. PR: PSYC 101 and PSYC 202. Introduction to animal behavior. Survey of fundamental concepts (evolution, genetics, adaptation, and learning) and research methods in understanding animal behavior including primate species. Includes laboratory exercises and demonstrations.


PSYC 331. History and Systems of Psychology. 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least Junior or Senior standing. A survey of psychology from its origins in philosophy, biology, and physics through the early major schools of psychological thought to modern perspectives on the science of behavior and its applications to human affairs.

PSYC 342. Prenatal and Infant Development. 3 Hr. PR: PSYC 241 and junior or senior standing. Behavior and development from conception to 2 years. Includes behavioral genetics and hazards of prenatal development, as well as sensory-motor, cognitive, language, and socioemotional behavior during infancy.

PSYC 343. Child and Adolescent Development. 3 Hr. PR: PSYC 241 and junior or senior standing. Theory and research on major psychological processes in childhood and adolescence; maturation, personality, socialization, sensory, and cognitive development.

PSYC 345. Adulthood and Aging. 3 Hr. PR: PSYC 241 and junior or senior standing. Psychological issues in the study of adulthood, with an emphasis on the characteristics of older adults. Topics include the psychosocial and biological context of aging, cognitive and personality changes from early to late adulthood, psychopathology in later life, dementia, issues in caregiving, and death and dying.

PSYC 351. Topics in Social Psychology. 3 Hr. PR: PSYC 251 and junior or senior standing. Social factors that determine human behavior, survey of research in selected areas of social psychology and their implications for social phenomena.
PSYC 362. Psychological Assessment. 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior standing. Psychometric theory and development of psychological assessment instruments. Includes behavioral, personality, intellectual, neuropsychological, forensic, achievement, and aptitude assessment.

PSYC 363. Personality Theory. 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior standing. Theoretical and empirical readings in a survey of major perspectives in personality theory, including dynamic, cognitive, humanistic, and behavioral.

PSYC 364. Psychology of Adjustment. 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior standing. Dynamic principles of human personality adjustment.

PSYC 365. Forensic Psychology. 3 Hr. PR: PSYC 101 and junior or senior standing. Surveys role of psychology in the legal system. Issues addressed include: insanity, child custody, sexual abuse, police fitness, eye witness and jury selection

PSYC 379. Community Psychology. 3 Hr. PR: (PSYC 202 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293) and at least junior standing. Psychological principles applied to treatment and intervention at the community level; manpower development, organizational change, and systems analysis.

PSYC 382. Exceptional Children. 3 Hr. PR: PSYC 241 and junior or senior standing. Exceptional mental retardation or advancement; organic disabilities having behavioral consequences, such as cerebral palsy or deafness; and behavior disorders.

PSYC 401. Psychology Capstone Experience 1 Hr. PR: PSYC 101 and PSYC 201 and STAT 211 and Senior Standing. Experience in coursework, research, or service that integrates knowledge gained as a major in psychology. To be taken concurrently with capstone experience, details of which are to be determined in consultation with advisor.

PSYC 411. Applying to Graduate School. 1 Hr. PR: Senior Psychology major. Designed to guide students through the process of applying to graduate school in psychology. Students will investigate graduate training alternatives, select potential graduate programs, complete application packages, and prepare for interviews. Course will be graded on a Pass/Fail basis.

PSYC 419A. Seminar in Methodology. I, II. 1-3 Hr. (May be repeated for credit with consent). Current problems and techniques in research design, data analysis, and research methods.

PSYC 423. Cognition and Memory. 3 Hr. PR: PSYC 202 and junior or senior standing. Theoretical and empirical issues in cognitive psychology. Topics include mechanisms and theories of attention, memory, language, and conceptual processes.

PSYC 424. Learning and Behavior Theory. 3 Hr. PR: PSYC 302 and junior or senior standing. Advanced course in empirical and theoretical issues in the psychology of learning.

PSYC 425. Perception. 3 Hr. PR: PSYC 202 and junior or senior standing. Survey of the structure and function of human sensory systems (primarily visual and auditory), perceptual issues and theories.

PSYC 426. Physiological Psychology. 3 Hr. PR: PSYC 301 and junior or senior standing. Advanced study of the physiological mechanisms of behavior. Topics include neural and endocrine mechanisms of behavior and issues, methods, and findings in behavioral neuroscience.

PSYC 474. Behavior Modification. 3 Hr. PR: PSYC 302 and junior or senior standing. Basic principles of behavior and their application to changing significant human behavior. Includes clinical, educational, parenting, industrial/organizational, community, and other applications.

PSYC 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (No more than 3 hours of PSYC 490 may be counted toward the 44 hours of psychology to which psychology majors are limited.)

PSYC 490A. Teaching Practicum. 1-3 Hr. PR: Consent Teaching practice as a tutor or assistant. (No more than 3 hours of PSYC 490 may be counted toward 33 hours of psychology to which psychology majors are limited.)

PSYC 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PSYC 491A. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PSYC 492 A-Z. Directed Study. 1-3 Hr. PR: Consent. Directed study, reading, and/or research.
PSYC 493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

PSYC 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regularly scheduled courses.

PSYC 495A. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regularly scheduled courses.

PSYC 495B. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regularly scheduled courses.

PSYC 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

PSYC 498A. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

PSYC 498B. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

PSYC 498C. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

PSYC 498D. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

PSYC 498E. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

PSYC 498F. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

Physical Therapy (PT)
PT 191. Special Topics. 1-3 hr.

PT 419. Professional Values. 3 Hr. PR: Majors only. Students investigate various professional, ethical, and practice issues through written assignments and class presentations. Students study Appalachian culture and the effects of cultural mores on professional practice.

PT 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Public Administration (PUBA)
PUBA 479. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479A. Special Topics. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479B. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479C. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479D. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479E. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479F. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479G. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479H. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

PUBA 479I. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.
PUBA 479J. Special Topics in Healthcare. 1-6 Hr. PR: PUBA 370. Focuses on those subjects of most topical concern in health care administration.

**Reading (RDNG)**

RDNG 381 A-Z. Special Topics. I, II, S. 1-6 hr. PR: Consent. Special topics or research in reading and language arts for master's degree students in reading.

RDNG 403. Literature for Children. 3 Hr. A survey of children's literature, with attention to historical development as well as current trends. Emphasizes selection, critical evaluation, and utilization of literary materials for developmental, recreational, and curriculum needs. Appropriate media included.


RDNG 422. Reading in the Content Areas. I, II. 3 Hr. Skills and strategies needed by content area teachers to reinforce the reading skills necessary for the effective learning of secondary students in the content areas.


RDNG 491. Professional Field Experience. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

RDNG 493. Special Topics. 1-6 Hr. A study of contemporary topics selected from recent developments in the field

RDNG 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

**Religious Studies (RELG)**

RELG 102. Introduction to World Religions. 3 Hr. This course explores five of the most widely practiced world religions; Judaism, Christianity, Islam, Hinduism, and Buddhism. Students are introduced to the history and basic tenets of each faith.

RELG 105. Introduction to Issues in Religious Studies. 3 Hr. Leading issues involved in religious studies: transcendence, the God question, evil, redemption, community, eschatology, symbolism, ethics, examples of the relationship between religion and culture.

RELG 210. Contemporary Theology 1. 3 Hr. Issues include: function of reason in Judaeco-Christian faith and relationship of reason and revelation to each other; Judaeco-Christian understanding of history; the question of biblical literalism.

RELG 211. Contemporary Theology 2. 3 Hr. Issues include: ecumenical movement within the church; the Spirit; recent transformations in ethical and social thinking (new morality); secular theology (new theology), theology of hope.

RELG 212. Existential Theology. 3 Hr. An introduction into existentialism and its impact on theology. A dialog between existential problems (anxiety, loneliness, meaninglessness, guilt, death, lust, wrath, etc.) and the response of Judaeco-Christian faith.

RELG 219. The History of Christianity. 3 Hr. This course explores the birth and evolution of Christianity from its inception until the modern era. Emphasis will be placed upon the significant people and events that shaped Christianity.

RELG 222. Origins of Judaism. 3 Hr. Main beliefs and practices of the Jewish religion in its formative period, 500 B.C. to 500 A.D. Selections from the late Old Testament writings, the Apocrypha and Pseudepigrapha, the Dead Sea Scrolls, and rabbinical literature.

RELG 223. Christianity in America. 3 Hr. Explore the history of American Christianity, as republican ideology, deocratic polity, and commitment to individual freedom create a competitive religious marketplace without an established church.

RELG 228. History of American Religions. 3 Hr. The origins, growth, and influence of major religious ideas and movements which were significant in shaping the religious life of the American people from colonial times to the present.

RELG 229. Southern Religion and Culture. 3 Hr. Historical examination of the religious life of southerners from sixteenth century to present with attention to how religion, social and political institutions, and cultural practices interact. Emphasizes religion and culture in central Appalachian region.
RELG 230. Religions of India. 3 Hr. Proto-Indian religion, Hinduism, beginnings of Buddhism, Jainism, Sikhism; historical and theological foundations; developments of thought; and contemporary expressions and encounters with the modern world.

RELG 231. Religions of China and Japan. 3 Hr. Buddhism, Confucianism, Taoism, Shintoism; historical and theological foundations, developments of thought; and contemporary expressions and encounters with the modern world.

RELG 232. Islam and Near Eastern Religions. 3 Hr. The ancient religions of Mesopotamia, Egypt and Iran, and the origin and growth of Islam; historical and theological foundations; developments of thought; scriptures; and contemporary expressions and encounters with the modern world.

RELG 241. Mythology and Religion. 3 Hr. Phenomenology of mythology; interrelationship of mythology with culture; reason and mythology; myths as bearers of natural and archetypal insights; myths as bearers of revelation; mythology in Judaism and Christianity; mythology in other world religions; hagiology.

RELG 242. Theological Perspectives in Modern Literature. 3 Hr. Theological perspectives in selected modern writers including Beckett, Camus, Faulkner, Hesse, Hopkins, Wiesel, Eliot, and Auden. Theological insights into nihilism, evil, redemption, and meaning, as well as psychological analyses of religion, will be examined in these authors.

RELG 250. Biblical Ethics/Current Issues. 3 Hr. Principal types of ethics; biblical teaching on sin, guilt, law, grace, the state, perfection, etc., with application to contemporary issues: bioethics, euthanasia, ecology, sex, cybernation, etc.

RELG 255. Religion Across Cultures. 3 Hr. Introduces cross-cultural study of religion, with emphasis on non-western examples; surveys classic statements by major modern theorists, focusing on comparison in modern and secular academic setting.

RELG 293 A-Z. Special Topics. 3 Hr. Investigation of topics not covered in regularly scheduled courses.

RELG 303. Studies in Christian Scripture. 3 Hr. This course explores the origin and development of the Christian Bible. The historical, cultural, and religious settings of the texts, as well as their theological intent, will be examined.

RELG 304. Studies in Hebrew Scriptures. 3 Hr. This course explores the origin and development of the Hebrew Bible. The historical, cultural, and religious settings of the texts, as well as their theological intent, will be examined.

RELG 305. Biblical History/Archaeology. 3 Hr. Explores development of the biblical world from 2,000 BCE through the first century CE. Various cultures will be examined socially, historically, and religiously. How biblical archaeology impacts understanding of the Bible will also be discussed.

RELG 350. Biblical Ethics/Current Issues. 3 Hr. Introduction to biblical ethics and its application to current issues. Issues such as war, the environment, and biotechnology are explored by interpreting biblical texts as a touchstone of ethical principles and values.

RELG 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

RELG 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

RELG 492. Directed Study. I, II, S. 1-3 Hr. Directed study, reading, and or research.

RELG 493 A-Z. Special Topics. 3 Hr. Investigation of topics not covered in regularly scheduled courses.

RELG 494 A-Z. Seminar. 3 Hr. PR: A previous religious studies course. Presentation and discussion of topics of mutual concern to students and faculty.

RELG 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

RELG 496. Senior Thesis. 1-6 Hr. PR: Consent.

RELG 497. Research. 1-6 Hr. Independent research projects.

RELG 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Resource Management (RESM)
RESM 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
RESM 330. Equine Facility Development and Management. 3 Hr. Offered for students wishing to gain knowledge of horsekeeping and the design of efficient private and public equine facilities. Course covers cost efficiency of construction materials and their applications to arenas, barns, and outdoor facilities.

RESM 390. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

RESM 420. Aquaculture Management. 3 Hr. PR: BIOL 101 and BIOL 103. Interdisciplinary course that explores through lectures, field trips, demonstrations, and class discussion, practical pond management principles site and species selection, production methods, processing, marketing, waste issues and economics.

RESM 440. Foundations of Applied GIS. 2 Hr. An introductory course designed to provide the necessary background and techniques to use GIS technology to analyze and solve spatial problems. An emphasis is placed on acquisition, management, and manipulation of spatial data.

RESM 480. Environmental Regulation. 3 Hr. Course focusing on laws and policies applicable to the environment. Students will learn to read and interpret statutes, regulations and cases that impact water, air, toxic substances, land and endangered species.

RESM 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

RESM 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

RESM 495. Independent Study. 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.

RESM 496. Senior Thesis. 1-3 Hr. PR: Consent.

RESM 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Recreation Parks and Tourism Res (RPTR)

RPTR 140. Adventure West Virginia. 3 Hr. This course provides incoming WVU freshmen with the information and tools helpful for a successful transition from high school to college through a field-based, experiential curriculum.

RPTR 142. Introduction to Recreation, Parks and Tourism. 2 Hr. Recreation, parks and tourism philosophy, environments, agency contexts, historical antecedents, service delivery systems, special settings and populations, leadership programs and professional challenges. 30 hr. field placement with local recreation, park or tourism agency.

RPTR 143. Leisure and Human Behavior. 3 Hr. An interdisciplinary approach analyzing the role of leisure in modern American life. Play, games, work, and recreation are studied as aspects of human behavior affected by global, physical, societal, and personal concerns.

RPTR 145. Recreation Services for Special Populations. 3 Hr. PR: Consent. Introductory analysis of current therapeutic recreation and park services to include members of special populations; familiarization with planning for the conduct of such services.

RPTR 148. Wilderness First Responder. 3 Hr. PR: Consent. This course provides training necessary to become certified in dealing with various aspects and levels of outdoor/wilderness crises for forestry, recreation, or any outdoor professionals. Grading will be Pass/Fail.

RPTR 150. Backcountry Living Skills. 3 Hr. PR: Consent. The purpose of this course is to develop and refine the skills necessary to live and travel in the outdoors.

RPTR 239. Sustainable Tourism Development. 3 Hr. This course will introduce students to the phenomenon and significance of global tourism and teach them how to apply tourism principles to support community economic development.

RPTR 242. Environmental and Cultural Interpretation. 3 Hr. This course is about people, communication and natural resource management. It focuses on theory and application of communication methods for natural resource settings and topics, including communication of technical information to lay publics.

RPTR 251. Leadership in Experiential Education. 3 Hr. This course focuses on elements of leadership in outdoor and experimental education and provides students with "Hands-on" learning opportunities.

RPTR 263. Program Planning in Recreation, Parks and Tourism. 3 Hr. PR: RPTR major or Consent. Fundamentals of general program planning, needs, facilities, age groups, local customs, climatic factor, etc.; settings such as parks, playgrounds, indoor centers, playing fields, hospitals, voluntary agencies, industrial settings, and campuses.

RPTR 285. Wilderness Skills. 4 Hr. This course will familiarize students with topics and skills related to safe travel and camping in backcountry environments. Course activities will include hiking, backpacking, rock climbing, and orienteering. Students must be prepared to spend time in all kinds of weather. Field trips are required.
RPTR 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

RPTR 335. Management in Recreation, Parks and Tourism Organizations. 3 Hr. PR: 12 Hr. of Recreation, Parks and Tourism courses, Junior standing, or Consent. Principles of administration as applied to the operation of recreation, parks and tourism organizations, including policy, legal foundations, organization, personnel, and finance.

RPTR 365. Planning and Design in Recreation, Parks and Tourism. 3 Hr. PR: Recreation, Parks and Tourism major or Consent. Study of planning and design concepts, standards and guidelines, use continuum, grants-in-aid, and planning of selected areas and facilities: parks, pools, centers and recreation areas.

RPTR 420. Protected Area Management. 3 Hr. PR: RPTR 142. This course provides a broad and comprehensive understanding of the history, philosophies and practice of global protected area management.

RPTR 433. Recreation Resource Management. 3 Hr. An analysis of land management agencies and major legislation concerned with recreation resource management; review, develop, and apply recreation resource and visitor use management plans.

RPTR 434. Wilderness in American Society. 3 Hr. PR: RPTR 433 or Consent. A seminar examining political, sociological, and environmental aspects of American wilderness. A discussion on articles concerning wilderness preservation, management, and aesthetics.

RPTR 442. Advanced Interpretive Techniques. 3 Hr. PR: RPTR 242 or consent and Junior Standing. This is an advanced course on the development of interpretive programs that reflect the historical, cultural, and natural resources of an area. The course employs a project-based approach - students will develop and critique both personal and non-personal products.

RPTR 448. Ecotourism Development. 3 Hr. Covers Applied approaches to the development and operation of nature-based tourism businesses. Sustainable tourism principles, business planning, marketing strategies, and management issues are thoroughly examined.

RPTR 450. Social Research Methods in NRM. 3 Hr. Social research methods in natural resource management with concentration on problem identification and solving. Data collection methods and applications specific to natural resource management social settings will be studied.

RPTR 485. Professional Development Seminar. 1 Hr. This course is a capstone preplanning course for the professional internship program. The course emphasizes professional development and career planning.

RPTR 488. Internship. 3 Hr. PR: Completion of required RPTR courses for the B.S.R.; internship must relate to student’s area of emphasis and have prior approval of instructor. Supervised, full-time leadership responsibility with a recreation agency for a minimum of eight weeks.

RPTR 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

RUSS 101. Elementary Russian 1. 3 Hr. PR: No prior study of the language. Introduction to the sound and writing systems of the language, with emphasis on listening, reading, speaking, and writing.

RUSS 102. Elementary Russian 2. 3 Hr. Continuation of RUSS 101. Introduction to the sound and writing systems of the language, with emphasis on listening, reading, speaking, and writing.

RUSS 203. Intermediate Russian 1. 3 Hr. PR: RUSS 102. Continued development of basic skills in listening, reading, speaking, and writing Russian.
RUSS 204. Intermediate Russian 2. 3 Hr. PR: RUSS 203. Continuation of RUSS 203. Capstone course for the Russ 101 thru 204 sequence and foundation for advanced Russian study. Continued development of basic skills in listening, reading, speaking, and writing Russian.

RUSS 293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

RUSS 301. Conversation and Composition 1. 3 Hr. PR: RUSS 204. Emphasis on development of written and oral communicative skills of contemporary Russian.

RUSS 302. Conversation and Composition 2. 3 Hr. PR: RUSS 301. Continuation of Russ 301. Emphasis on development of written and oral communicative skills of contemporary Russian.

RUSS 303. Advanced Structure and Reading. 3 Hr. PR: RUSS 204. Development of communicative skills, with emphasis on reading authentic texts and review of Russian language structures.


RUSS 331. The Russian Short Story. I. 3 Hr. PR: RUSS 4. Reading, discussing, and writing in Russian about short stories of selected nineteenth-century Russian writers.

RUSS 332. The Russian Short Story. 3 Hr. PR: RUSS 204. Reading, discussing, and writing in Russian about short stories of selected contemporary Russian writers.

RUSS 341. Survey of Russian Literature. 3 Hr. PR: RUSS 204. A major works of selected Russian authors from the beginning through the nineteenth century, including those of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy.

RUSS 342. Survey of Russian Literature. 3 Hr. PR: RUSS 204. Major works of selected Russian authors from the beginning of the twentieth century to the present.

RUSS 451. Russian Culture. 3 Hr. PR: RUSS 204. A study of Russian civilization, customs, and ethos.

RUSS 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

RUSS 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

RUSS 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

RUSS 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

RUSS 496. Senior Thesis. 1-3 Hr. PR: Consent.

RUSS 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**Safety Management (SAFM)**

SAFM 101. Energy and the Environment. 3 Hr. Regional and global study of the historical, social and economic impact resulting from the production, processing, transportation, and utilization of fossil fuels on the environment. Alternative energy technologies, government regulations, and alternative fuels are discussed.

SAFM 470. Managing Construction Safety. 3 Hr. Focuses on management and planning aspects of construction safety, including fall protection, scaffolding, excavation, hand and power tools, cutting and welding, others. Compliance aspects of 29CFR 1926 (with various subparts) concerned with building and highway construction.

SAFM 471. Motor Fleet Safety. 3 Hr. Safety elements of automotive transportation including desing, operation, planning, control, and effects of legislation.

SAFM 482. Environmental Energy Impacts. 3 Hr. Environmental effect caused by the development and use of fossil fuels and alternative energy sources. Course includes history, compliance, energy economics, field trips, and laboratory and/or project presentation.

SAFM 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
Small Business Entrepreneurship (SBEN)

SBEN 310. Small Business Management 1. 3 Hr. PR ro CONC: BCOR 350 and BCOR 370. Fundamental principles and practices related to small business and entrepreneurship. Focuses on areas such as leadership, motivation, Human Resource Management as they apply to small business management.

SBEN 410. Small Business Management 2. 3 Hr. PR: BCOR 340 and SBEN 310 and PR or CONC: ACCT 331. Fundamental principles and practices related to small business and entrepreneurship. Focuses on areas such as accounting, budgeting, and financial management as they apply to Small Business Management.

Social and Cultural Foundations (SCFD)

SCFD 100. Education In The American Culture. 3 Hr.

SCFD 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

SCFD 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

SCFD 493. Special Topics. 1-6 Hr.

SCFD 494. Seminar. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SCFD 496. Senior Thesis. 1-3 Hr. PR: Consent.

SCFD 498. Research. 1-6 Hr. Independent research projects.

Slavic and Eastern European Studies (SEES)

SEES 101. Introduction to Slavic and East European Studies. 3 Hr. This course offers a multidisciplinary introduction to the geography, history, culture, societies, religions, and politics of Slavic and Eastern Europe, a broad region between contemporary Germany and Eurasian Russia and the Baltic and Black Seas.

SEES 492. Directed Study. 1-3 Hr. Directed study, reading, and or research.

SEES 497A. Research:Capstone. 1-6 Hr. Independent research projects.

Sport and Exercise Psychology (SEP)

SEP 170. Champs/Life Skills. 1 Hr. This course is intended for first-year student athletes interested in developing and incorporating life skills in the areas of academics, athletics, career and personal development.

SEP 210. Professional Issues. 1-3 Hr. An introduction to professional issues relevant to the field of sport psychology. Provides opportunities for students to gain practical experiences within the field.

SEP 271. Sport in American Society. 3 Hr. Sociocultural investigation of sport in American society.

SEP 272. Psychological Perspectives of Sport. 3 Hr. An examination of personality and behavioral factors as they affect participation in sport. Topics such as stress and sport, body image, aggression and the sport participant, and the licensure of sport psychologists highlight the course.

SEP 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 373. African Americans in Sports. 3 Hr. Sociocultural and historical overview of the contributions of African-Americans in sport in America.

SEP 374. Sport Studies Research Methods. 3 Hr. An analysis of descriptive and experimental research in sport psychology and sport management. Course requirements include completion of capstone research project.

SEP 385. Social Psychology of Sport. 3 Hr. PR: SEP 271 and SEP 272. or consent. An introduction to the study of how and why performance is affected by interactions with others in sport.

SEP 420. Sport Performance Enhancement. 3 Hr. PR: SEP 272. An introduction to the processes and techniques involved in using psychology to help athletes and coaches improve their performance.

SEP 490. Teaching Practicum. 1-3 Hr. PR: Consent Teaching practice as a tutor or assistant.

SEP 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a max of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
SEP 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

SEP 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493A. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493B. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493D. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493E. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493F. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493G. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493H. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493I. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493J. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493K. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493L. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493M. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493N. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493O. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493P. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493Q. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493R. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493S. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493T. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493U. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493V. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493W. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493X. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 493Y. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SEP 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

SEP 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

SEP 496. Senior Thesis. 1-3 Hr. PR: Consent.

SEP 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Sport Management (SM)
SM 167. Introduction to Sport Studies. 3 Hr. Examines the historical and philosophical bases, major issues and professional practices in sport studies.

SM 275. The Olympic Games. 3 Hr. An examination of the historical development of the Olympic Games from the Greek classic period (500 B.C.) to the games of the XXVI Olympiad of Atlanta in 1996.
SM 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SM 370. Sport Finance. 3 Hr. This course will present a number of basic concepts in the budgeting and financing of sports programs and will also examine a number of critical financial issues affecting sports. Particular emphasis will be placed on intercollegiate athletic programs.

SM 375. Sport in the Global Market. 3 Hr. An examination of the role of sports within the broader process of globalization. Its impact on culture, politics, economics and how these influences shape today’s sport.

SM 380. History and Philosophy of Sport. 3 Hr. This course is designed to acquaint students with philosophical issues relate to sport and sport management and with individuals and events that helped shape the history of sport.

SM 425. Facility Planning. 3 Hr. PR: Consent. A in-depth study of sport facilities, including planning, design, liability and facility management concepts and evaluation.

SM 426. Liability in Sport. 3 Hr. An overview of the legal system as it applies to sport, including contracts, tort law, drug testing, rights of athletes, product liability, legal duties of coaches, facilities supervisors, and athletic directors.

SM 485. Sport Management. 3 Hr. PR: Senior standing. The study of management principles as they relate to sport organizations. The analysis includes specific references to planning, organizing, leading and evaluating functions of management in sport.

SM 486. Sport Marketing. 3 Hr. PR: Senior Standing. The study of marketing principles as they relate to sport organizations. Specific attention is focused on the marketing planning process, marketing information systems, and internal marketing.

SM 487. Issues in Sport Studies. 3 Hr. PR: SEP 271 and ENGL 101 and ENGL 102 and Junior Standing. An in-depth analysis of critical issues impacting sport and the sport industry.

SM 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

SM 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

SM 492. Directed Study. 1-6 Hr. Directed Study, reading, and/or research.

SM 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SM 494 A-Z. Seminar 1-6 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

SM 495. Independent Study. 1-6 Hr. Faculty Supervised study of topics not available through regular course offerings.

SM 496. Senior Thesis. 1-3 Hr. PR: Consent.

SM 498. Internship. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Sociology and Anthropology (SOCA)

SOCA 101. Introduction to Sociology. 3 Hr. Basic course intended to develop a perspective about the nature of social processes and the structure of society.

SOCA 105. Introduction to Anthropology. 3 Hr. Essentials of human evolution and prehistory with a concentration on the varieties of languages and cultures found among peoples of the world.


SOCA 199. Orientation to Soc and Anthro. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

SOCA 221. Families and Society. 3 Hr. Historical comparative approach to changing structure and functions of the family institution. Effect of economic, demographic, and cultural changes on relationships, gender roles, marriage, childcare; variations by socioeconomic status, race, ethnicity, gender, sexual orientation.

SOCA 222. The Community. 3 Hr. Social structure of small towns and rural communities. The community power structure and political participation as they relate to community planning.
SOCA 223. Death and Dying. 3 Hr. Sociological and anthropological perspectives on death and dying. Examines sociopsychological and structural factors supporting the beliefs and practices associated with the institution of death, both historically and in contemporary society.

SOCA 232. Criminology. 3 Hr. Exploration of various theories of criminal behavior; emphasis on a critical study of the criminal justice system and efforts to reform the penal system.


SOCA 235. Race Relations. 3 Hr. Causes and consequences of prejudice and discriminatory practices involving minority group members. Emphasis is on blacks, but social and economic conditions of Indians and other racial and religious minorities are also discussed.

SOCA 238. Ethnic Groups. 3 Hr. Study of the major ethnic groups in the U.S., their social histories and present importance to the nation. Family histories are explored. Includes study of Irish, Polish, Italian, Greek, Mexican, Asian, and Native Americans.

SOCA 240. Introduction to Sociology of Appalachia. 3 Hr. Sociological perspectives on the history, culture, and social organization of Appalachia. Examines regional images and stereotypes, work, family, community, religion, education, politics, musical traditions, literature, and social life. Emphasizes economic history, stratification, and social change.

SOCA 248. Lessons of the Vietnam War. 3 Hr. Political, legal, social, and military controversies surrounding the Vietnam War are examined through sociological perspectives on stratification, race relations, social movements, conflict resolution, deviance and social control. Features role play simulations, guest interviews, videos, lectures.

SOCA 250. Archeology Laboratory. 1 Hr. Coreq: SOCA 258. Experiential activities to accompany SOCA 258 lecture material.

SOCA 251. Culture and Language. 3 Hr. Examines anthropological linguistics, one of anthropology’s four primary subfields. Explores interactions between culture and language in various cultures around the world, including the United States, utilizing anthropology’s holistic, cross-cultural, and evolutionary perspectives.

SOCA 252. Physical Anthropology. 3 Hr. Fossil evidence for human evolution, racial variation, and relationship between biology and behavior.

SOCA 254. Cultural Anthropology. 3 Hr. PR: SOCA 101 and SOCA 105. Provides a comprehensive introduction to cultural anthropology, a field in anthropology. Cultural anthropologists study the origins of human species, cultural change, cultural diversity, and the nature of language, among other things.

SOCA 255. Latin American Cultures. I, II. 3 Hr. Survey of the cultures of Mexico, Central America, and South America. Consideration of historical, social, economic, political, religious and geographic factors that impact on contemporary life ways.

SOCA 256. Traditional and Changing Africa. 3 Hr. A survey of traditional social institutions found in hunting/gathering, agricultural, and pastoral societies of sub-Saharan Africa. Labor migration, urbanization, agricultural cooperatives, and other consequences of colonial rule will be considered.

SOCA 257. The Art of Primitive Peoples. 3 Hr. The art of prehistoric peoples from the Upper Paleolithic to Urban Phase and the art of contemporary technologically primitive peoples will be described and functionally analyzed within their individual cultural contexts.

SOCA 258. Introduction to Archaeology. 3 Hr. Coreq: SOCA 250. Methods and techniques of reconstructing prehistoric cultures, explaining cultural change, and explaining the formation of the archeological record.

SOCA 265. Intro to GLBT Studies. 3 Hr. An introduction to Gay, Lesbian, Bisexual and Transgender Studies that combines the disciplines of anthropology, biology, history, literature, philosophy, psychology, and sociology.

SOCA 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SOCA 302. Deviant Behavior. 3 Hr. PR: 6 Hr. SOCA or consent. Examination of the processes by which “deviance” is defined in society, and the methods of social control attempted. Provides a critical understanding of society from the perspective of those defined as “outsiders”-criminals, addicts, etc.

SOCA 304. Complex Organizations. 3 Hr. PR: 6 Hr. SOCA or consent. The structure and functioning of large-scale, bureaucratic organizations, including studies of industrial organizations, prisons, hospitals, government.

SOCA 311. Social Research Methods. 3 Hr. PR: Junior status or consent. Logic of social research, elements of research design, and problems of measurement, with emphasis on survey research methodology and data analysis.
SOCA 318. Hate Crime. 3 Hr. PR: SOCA 101 and SOCA 232 or SOCA 233. Builds on basic knowledge in sociology to provide a detailed example of an emerging social problem, i.e., hate crime. Explores the ways social phenomena become social problems. Examines the causes and consequences of hate crime.

SOCA 319. Police Culture and Socialization. 3 Hr. PR: SOCA 101 and SOCA 232 or SOCA 233 and SOCA 330. Examines the institution of policing in the United States. Builds on basic sociological concepts to provide a sociological and historical perspective on the formal and informal structures and processes in the American system of policing.

SOCA 320. Social Psychology. 3 Hr. PR: SOCA 101. Provides a basic but detailed knowledge of the tenets of sociological social psychology, with an emphasis on symbolic interaction. Focuses on how individual identity is formed through a social process.

SOCA 321. Punishment and Social Control. 3 Hr. PR: SOCA 101 and SOCA 232 or SOCA 233. Builds on basic sociological concepts to provide detailed knowledge about the use of prisons and incarceration among other forms of punishment and surveillance in contemporary society.

SOCA 322. Third World Development. II. 3 Hr. PR: SOCA 222 or SOCA 240 or consent. Provides a Macroscopic view of political and social change in the Third World and specific knowledge of Third World development for issues related to population, food, debt, health, education, environment, and human rights.


SOCA 324. Gender and Crime. 3 Hr. PR: SOCA 101 and SOCA 232 or SOCA 233. Builds on basic sociological principles and concepts, and focuses on issues of social structure and process that are at the intersection of gender, crime, and crime control.

SOCA 325. Illness and Health Care. 3 Hr. An overview of behavioral factors relating to occurrence of and response to illness, with particular emphasis upon American medicine. Designed especially for students interested in health-related careers.

SOCA 330. The Criminal Justice System. 3 Hr. PR: SOCA 232 or consent. A sociological introduction to the criminal justice system. Focuses on analysis of police work, court activities, and corrections within the context of American social organization and societal definitions of crime and justice.

SOCA 331. Sociology of Law. 3 Hr. PR: SOCA 232 or SOCA 233 or permission of instructor. Development and practice of law as part of social systems; theoretical treatments of the relationship between law and social order; emphasis on issues of class, race, and gender.

SOCA 332. Sociology of Education. 3 Hr. PR: SOCA 101 or consent. Education as a social institution, cultural and class influences on education, social roles and career patterns in the school system, the school and problems of the community.

SOCA 333. Sociology of Work and Work Places. 3 Hr. PR: SOCA 101 or consent. Explores the significance of work and work relations in contemporary society. Emphasis is given to the analysis of employment settings including industrial organizations.

SOCA 334. Corporate and White Collar Crime. 3 Hr. Examines lawbreaking by respectable organizations and individuals engaged in professional economic activity. Studies sociocultural sources of such crime, consequences for victims, and public policy responses. Includes recent criminal cases, legal changes, and enforcement trends.

SOCA 335. Criminal Justice Processes. 3 Hr. A sociological introduction to the formal and informal processes in the American criminal justice system that affect the investigation and prosecution of criminal cases, including the collection, analysis, and presentation of evidence.

SOCA 336. Sociology of Religion. 3 Hr. PR: 6 Hr. SOCA or Consent. Relationship of religion and society. Origin of religious institutions, structure, function, and role in change or stability of the social system.

SOCA 337. Sociology of American Business. 3 Hr. PR: 6 hr SOCA or Consent. The changing role of business, and the debate over its social responsibilities are the major issues of the course. Corporate structures, ownership, governance, power, policy, crime, philanthropy, and work life are examined.

SOCA 339. Organized Crime. 3 Hr. PR: 6 Hr. SOCA or Consent. Analyzes organized criminal groups in relation to the social structure, culture, and social psychology of societies. Topics include: history and leadership of crime groups; relations with government, business, and labor; enforcement policies; international crime groups.

SOCA 345. Terrorism. 3 Hr. PR: 6 Hr. SOCA or Consent. A sociological understanding of terrorism, including its causes, relations to social context, and trends. Emphasis is placed on major terrorist groups, selected cases, explanatory theories and policies of containment and prevention.
SOCA 346. Victimology. 3 Hr. PR: SOCA 101. Introduction to the sociological study of victimization, which includes an examination of risks and frequencies, perceptions and fears, and the social and psychological impact of crime, accident and illness on individuals and entire societies.

SOCA 353. Anthropology of Religion. 3 Hr. PR: 6 hour SOCA or Consent. Symbolism, magic, ritual, shamanism, sorcery, and concepts of sin and salvation related to peasant and tribal cosmologies will be examined as causes of and remedies for suffering in traditional and modern contexts.

SOCA 358. Anthropology of Health and Illness. 3 Hr. PR: 6 Hr. SOCA or consent. Health and disease, diagnosis, and healing in cross-cultural perspective; analyses of social, cultural, political, and economic factors in modern and traditional medical systems.

SOCA 359. World Prehistory. 3 Hr. PR: 6 Hr. SOCA or Consent. A survey of prehistoric cultures from the lower paleolithic to the rise of cities in both the old and new worlds.


SOCA 362. Sociology of Aging. 3 Hr. PR: 6 Hr. SOCA or Consent. Social forces influencing the experience of aging, and the effects of a growing elderly population on society. Topics include changing roles and status of the elderly, intergenerational relationships, retirement traditions, widowhood.

SOCA 364. Youth and Social Change. 3 Hr. PR: 6 Hr. SOCA or consent. A structural-historical approach to the study of youth as both product and agent of social change. Emphasizes concepts of human development, life course transition, age stratification, birth cohort, lineage, historical period, and sociocultural generation.

SOCA 370. Cities and Urban Life. 3 Hr. PR: SOCA 101. This course introduces students to the scientific study of urban social activity and urban problems, including crime. The primary goals are to present the methods, theories, and key concepts of the sociological perspective on cities.

SOCA 371. Social and Mental Health Disorders. PR: 6 Hr. SOCA or Consent. 3 Hr.

SOCA 389. Writing in Sociology and Anthropology. 1 Hr. Integration of context with writing about the important topics; must be taken concurrently with and approved “W” content course. (for Majors only; permit required.)

SOCA 399. Writing in Sociology and Anthropology. I, II. 1 Hr. Integration of context with writing about the important topics; must be taken concurrently with an approved “W” content course. (For majors only; permit required.)

SOCA 401. Sociological Theory. 3 Hr. PR: Junior standing or consent. Systematic analysis of major sociological theories viewed from the historical perspective and in terms of current research.

SOCA 402. The Investigating Professions. 3 Hr. An inside view of the investigative work and controversial social realities of trial attorneys and a variety of paid scientific experts who commonly evaluate and prepare legal cases.

SOCA 405. Intro to Social Inequality. 3 Hr. PR: Junior standing or consent. Sociological study of the ways individuals/groups are differentiated and ranked historically and currently within the U.S. Major systems examined are gender, race, ethnicity, socioeconomic status, sexual orientation, place, age, ability and religion.

SOCA 407. Constructing Social Problems. 3 Hr. PR: Junior or Senior standing or consent. Focuses on the dynamics of defining social problems, with emphasis on claimsmakers, especially activist groups and mass media. Examines how power influences perceptions, how perceptions affect policies, and how problem definitions relate to social change.

SOCA 440. Social Change. 3 Hr. PR: 6 Hours SOCA or consent. Sociological analysis of current major changes in our society, of the forces underlying them, and of tensions to which they give rise. Alternative future directions and rational manipulation and planning for social change. social change.

SOCA 444. Neighborhoods and Crime. 3 Hr. PR: SOCA 101. This course introduces students to the growing sociological literature on neighborhoods and crime, with an emphasis on issues related to the race/ethnicity and economic inequality.

SOCA 455. Anthropological Theory. 3 Hr. PR: 6 Hr. SOCA or consent. Theoretical landmarks in early and modern anthropology. Includes British functionalism, psychological anthropology, French structuralism, and twentieth-century evolutionism in the United States.

SOCA 456. Field Methods. 3 Hr. PR: SOCA 311 or consent. The distinctive craft of data gathering in cultural anthropology. Development of skills in field methods and participant observation.

SOCA 461. Issues in Crime and Justice. 3 Hr. PR: Junior standing, or consent. Senior seminar on crime and social organization of justice. Focus on problems of prevention, enforcement, corrections and institutional reform. Emphasis on recent research, emerging trends, and policy.
SOCA 463. Economy and Society. PR: 6 Hr. SOCA or Consent. 3 Hr. Examines the role that the economy as a social institution plays in the historical paradigms in sociology and modern social theory, as well as in organization and inequality models in sociology.

SOCA 488. The Capstone Experience. 1 Hr. PR: SOCA 101 and SOCA 105 and Sr. standing. CoReq: Enroll simultaneously in one of the approved capstone experience. An undergraduate course designed to facilitate the completion of the capstone experience. Grading will be Pass/Fail.

SOCA 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

SOCA 490A. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

SOCA 491 A-Z. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional development.

SOCA 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SOCA 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

SOCA 495 A-Z. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

SOCA 496. Senior Thesis. 1-3 Hr. PR: Consent.

SOCA 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study and research.

SOCA 498C. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498D. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498E. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498F. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498G. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498H. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498I. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498J. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498K. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498L. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498M. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 498N. Honors. 1-3 Hrs. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

SOCA 499. Global Service Learning. 3 Hr. PR: Consent.

SOCA 499. Global Service Learning. 3 Hr. PR: Consent.

SOCA 499B. Global Service Learning. 3 Hr. PR: Consent.
Social Work (SOWK)

SOWK 105. Social Welfare Institutions. 3 Hr. Examines the historical development of social welfare in the United States and the values that shape social welfare institutions. 3 Hr. lec.

SOWK 147. Human Diversity. 3 Hr. (Must be completed before applying to the major.) Covers a range of diverse populations especially those historically subjected to oppression and social and economic injustice. Addresses the causes and effects of institutionalized forms of oppression.

SOWK 151. Introduction to Social Work. 3 Hr. PR: Consent. (Must be completed before applying to the major.) Overview of the social welfare field and social work profession. Emphasizes social work values and ethics.

SOWK 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SOWK 300. Social Welfare Policy and Services 1. 3 Hr. PR: SOWK 151. Review of current and historical perspectives on the social welfare institution. Includes philosophical and ideological factors that influence U.S. social welfare policy and services.

SOWK 310. Social Welfare Policy and Services 2. 3 Hr. PR: SOWK 300. Explores the social welfare policy-making process. Analyzes current social welfare programs and possible reforms, policy responses to social issues, and strategies for shaping and influencing policy and their impact on vulnerable populations.

SOWK 319. Skills Lab 1. 1 Hr. PR: SOWK 151. This experiential component of SOWK 320 focuses on developing communication and interviewing skills, relationship building, and problem solving. (Grading will be Pass/Fail.) be Pass/Fail.

SOWK 320. Social Work Methods 1. 3 Hr. PR: SOWK 147 and SOWK 151. Presents a broad range of generalist practice knowledge, values and skills. Focuses on theories and interventions with individuals, and introduces evaluation of practice effectiveness. 30-hour service learning requirement.

SOWK 321. Field Experience in Social Work. 1-12 Hr. (Open to non majors by consent) Develops basic helping skills through supervised volunteer or work experience in a community agency or program.

SOWK 322. Social Work Methods 2. 3 Hr. PR: SOWK 319 and SOWK 320. Builds on Methods 1 by focusing on more specific theories, methods, and intervention models with groups, communities, and organizations. Introduces program evaluation. 30-hour service learning requirement.

SOWK 324. Methods 3. Org and Communities. 3 Hr. PR: SOWK 319 and SOWK 320. Focuses on applying theories and concepts of generalist social work practice at the macro (organization/community) system level with an emphasis on rural environments.

SOWK 330. HBSE 1. 3 Hr. PR: SOWK 147 and SOWK 151. Human Behavior in the Social Environment 1: Individual Development Within the Family Context. Provides students with a life course perspective, and the understanding of the relationships among biological, social, psychological, and spiritual dimensions as they are affected by human behavior and family life.

SOWK 350. HBSE 2. 3 Hr. PR: SOWK 319 and SOWK 320 and SOWK 330. Human Behavior in the Social Environment 2: Groups, Organizations, and Communities. Examines, using an ecosystem’s perspective, the influence of communities, organizations and groups on human functioning. Emphasis on the challenges and opportunities offered by rural environments.

SOWK 360. Social Work Research and Stats. 3 Hr. PR: SOWK 300. Introduces and applies research and statistical methods social workers use to evaluate practice and programs, to critique research, to build knowledge for practice, and to address ethical standards of scientific inquiry.

SOWK 491. Professional Field Experience. 1-12 Hr. PR: Consent. (May be repeated up to a maxium of 12 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

SOWK 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SOWK 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

SOWK 495. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

SOWK 499. Global Service Learning. 3 Hr.

SOWK 499A. Global Service Learning. 3 Hr.
Speech Pathology and Audiology (SPA)

SPA 170. Speaking to Communities. I, II. 3 Hr. Focuses on guided direction to improve the student's conversational and public speaking skills through a variety of presentational formats to external audiences via community outreach. Code switching among dialects will be introduced and discussed.

SPA 199. Orientation to Speech Pathology and Audiology. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities. Open to all students (including those considering SPA as a major) and required for SPA majors. Course will be graded Pass/Fail.

SPA 200. Introduction to Speech and Hearing. I, II. 3 Hr. (For Majors Only.) Introduction to the professions of speech-language pathology and audiology; normal speech, language and hearing processes; etiology, assessment and treatment of communication disorders.

SPA 270. Effective Public Speaking. I, II. 3 Hr. Designed for improvement of the student's speech based upon theory and demonstrated performance of voice and diction skills and public-speaking skills for effective communication in a variety of speaking situations.


SPA 276. Intermediate Manual Communication. II. 3 Hr. PR: SPA 274 or consent. Improve skills needed to communicate in sign language. Includes increasing sign language vocabulary, practicing finger spelling, and communicating with signs with signs.

SPA 278. Communication Disorders. I, II, S. 3 Hr. (For Non-Majors.) Survey of normal processes and disorders of speech, language, and hearing in children and adults. Intended for students and teachers in early childhood, elementary, secondary and special education; language arts specialists; child development specialists; psychologists; and rehabilitation specialists.

SPA 293. Special Topics. I, II, S. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.


SPA 324. Language Acquisition. II. 3 Hr. PR: SPA 320 and SPA 322. Normal processes involved in the acquisition of language, including the development of phonological, semantic, morphological, pragmatic, and syntactical systems. Application of these processes to the diagnosis and treatment of language disorders.


SPA 342. Hearing Screening Programs. I. PR: SPA 200 or consent. 3 Hr. Disorders of hearing; screening programs from birth through geriatrics; introduction to industrial programs.

SPA 362. Parent Programs Communication Disorders. II. 3 Hr. PR: ENGL 101 and ENGL 102 and SPA 200 or consent. For Majors only. Students will learn to organize and implement parent involvement programs in a variety of settings, interview parents, conduct conferences, utilize appropriate materials, and interact effectively with parents of children with communication disorders in various clinical settings.

SPA 390. Clinical Observation/SLP. I, II. 1 Hr. PR: SPA 200 or consent. Introduction to clinical procedures and issues in speech-language pathology, including professional ethics, certification requirements, assessment/treatment process variables, clinical observations, behavioral objectives, cues, and feedback.

SPA 391. Clinical Observation/Audiology. I, II. 1 Hr. PR: SPA 200 or consent. Introduction to clinical procedures and issues, including professional ethics, certification requirements, assessment/treatment process variables, clinical observations, behavioral objectives, cues, and feedback.

SPA 420. Exploring SPA Clinical Settings. 3 Hr. PR: SPA 324 and SPA 326. Overview of governmental regulations, ethical considerations, relevant technology, and administrative/programmatic matters germane to the clinical practice of speech-language pathology and audiology in various settings including schools, medical and rehabilitation facilities, and private practice.

SPA 422. Voice and Stuttering. II. 3 Hr. PR: SPA 200 and SPA 326. Basic knowledge about and understanding of voice disorders and stuttering; relevant theories, facts, research findings, and clinical practice related to the epidemiology, etiology, course, prevention, diagnosis, and remediation.
SPA 424. Language Disorders. II. 3 Hr. PR: SPA 324. The nature and etiology of child and adult language disorders are described. Assessment and remediation procedures are examined.

SPA 440. Audiological Assessment. I. 4 Hr. PR: SPA 340 and SPA 342. Application of basic audiological techniques, including puretone and speech audiometry, masking, and immittance testing. Audiometric skill development in computer simulation lab.

SPA 442. Aural Rehabilitation. II. 3 Hr. PR: SPA 440 or consent. Communication and hearing impairment; aural rehabilitation evaluation; remediation including amplification, auditory and visual training, and ALD’s.

SPA 460. Professional Writing/Speaking. I. 3 Hr. (For Majors Only.) PR: (ENGL 101 and ENGL 102 and SPA 270) or consent. Designed for improvement of students’ professional skills, specifically oral and written. Emphasis is placed on report writing, letter writing, resume writing, listening, interviewing, group problem solving, leadership, persuasion, and public speaking.

SPA 482. Clinical Practice/SLP. I, II, S. 3 Hr. PR: Consent. Orientation to clinical methods for evaluation and treatment of speech-language disorders. (Graded Pass/Fail.)


SPA 484. Clinical Study and Application 1. 2 Hr. PR: All required courses through junior year. SPA seniors will meet in weekly seminars and with a faculty mentor to explore, develop, and write a clinically-oriented research paper and corresponding annotated bibliography that contains a minimum of twenty relevant sources.

SPA 485. Clinical Study and Application 2. 1 Hr. PR: SPA 484. SPA seniors will meet in weekly seminars and with a faculty mentor to develop and orally present, with a visual aid, the clinically-oriented research paper developed in SPA 484.


SPA 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

SPA 498 A-Z. Honors. 1-6 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study or research.

Spanish (SPAN)

SPAN 100. Intensive Elementary Spanish. 6 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Equivalent of SPAN 101 and 102 combined into one course.

SPAN 101. Elementary Spanish 1. 3 Hr. PR: Score of S1 on placement test or no prior study of the language or departmental consent. Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading and writing within an authentic cultural context. (Course presumes no prior knowledge of the language.)

SPAN 102. Elementary Spanish 2. 3 Hr. PR: SPAN 101 or score of S2 on placement exam. Continuation of SPAN 101. Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading, and writing within an authentic cultural context.

SPAN 200. Intensive Intermediate Spanish. 6 Hr. PR: SPAN 102 or SPAN 100 or consent. The equivalent of SPAN 203 and 204 combined into one course.

SPAN 203. Intermediate Spanish 1. 3 Hr. PR: SPAN 102 or score of S3 on placement exam. Continuation of Span 102.

SPAN 204. Intermediate Spanish 2. 3 Hr. PR: SPAN 203 or score of S4 on placement exam. Foundation for advanced study of Spanish. Emphasis on oral and written communication. communication.

SPAN 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly courses. scheduled courses.

SPAN 301. Spanish Conversation. 3 Hr. PR: SPAN 204. Major emphasis on improving conversational skills by means of discussions and oral reports. Grammar review where appropriate and written work.

SPAN 302. Reading and Composition. 3 Hr. PR: SPAN 204. Major emphasis on reading development and writing skills. Grammar review where appropriate. Class discussion in Spanish.

SPAN 303. Advanced Grammar. 3 Hr. PR: SPAN 204. A study of major points of Spanish grammar with particular attention to more advanced structures. Class discussion, readings, and composition in Spanish. SPAN 304. Advanced Reading and Composition. 3 Hr. PR: SPAN 302. Study of different genres and styles. Class discussion and written analyses in Spanish.
SPAN 330. Latin American Culture. 3 Hr. PR: SPAN 302 Survey of Latin American civilization and culture from the pre-Colombian period to the present.

SPAN 331. Early Spanish American Literature. 3 Hr. PR: SPAN 304. Readings in Spanish American literature from the colonial period to Modernism.

SPAN 332. Modern Spanish American Literature. 3 Hr. PR: SPAN 304. Readings in Spanish American literature from Modernism to the present.

SPAN 340. Culture of Spain. 3 Hr. PR: SPAN 302. Survey of Spanish civilization and culture from its origins to the present day.

SPAN 341. Early Literature of Spain. 3 Hr. PR: SPAN 304. Readings in Spanish literature from the medieval period to the eighteenth century.

SPAN 342. Modern Literature of Spain. 3 Hr. PR: SPAN 304. Readings in Spanish literature from the eighteenth century to the present.

SPAN 361. Commercial Spanish 1. 3 Hr. PR: SPAN 303 and SPAN 304. Development of advanced speaking, reading, and writing skills appropriate for business contexts within the Spanish-speaking world.

SPAN 401. Grammar Review. 3 Hr. Intensive grammar review for graduate students. (Credit does not count toward 36-hrs. required for master’s degree.)

SPAN 431. Caribbean Literature. 3 Hr. PR: At least one literature course in Spanish. Readings of selected works by Hispanic writers from the Caribbean region.

SPAN 462. Commercial Spanish 2. 3 Hr. PR: SPAN 461 Continuation of SPAN 461.

SPAN 480. Issues in the Hispanic World. 3 Hr. PR: Completion of 21 upper division hours in Spanish. An examination of contemporary issues facing the Hispanic world, with particular attention given to cultural developments and influences.

SPAN 481. Hispanic Presence in the World. 3 Hr. Completion of 21 upper-division hours in Spanish. This course is designed to provide Spanish majors with a capstone experience and offers them a more comprehensive view of the role of Spanish in the world.

SPAN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

SPAN 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 Hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

SPAN 491A. Professional Field Experience. 1-18 Hr. PR: consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

SPAN 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

SPAN 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SPAN 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

SPAN 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

SPAN 496. Senior Thesis. 1-3 Hr. PR: Consent.

SPAN 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Special Education (SPED)

SPED 304. Special Education in Contemporary Society. 3 Hr. Overview of special education principles and practices, interactions between disability and diversity in identification and intervention, and influences of family, professional, school, and community infrastructures on educational programs and outcomes for children and adults.

SPED 350. Survey of Exceptional Children and Adults. 3 Hr. PR: Consent. Introduction to all areas of exceptionality. Definition, psychological and educational characteristics, and social and vocational adjustment.
SPED 360. Differentiation of Instruction for Special Needs. 3 Hr. PR: SPED 304. Strategies for differentiation of instruction for students with special needs in general and special education settings, using an individualized, data-based decision making-process for organization, adaptation, and implementation of curriculum, methods and materials.

SPED 363. Characteristics of Students with Special Needs. 3 Hr. Learning and behavior characteristics of children and adolescents with mild disabilities; identification of academic learning needs; individual education programs and individualized instructional programming; assistive technology and other applications.

SPED 364. Educational Programming for Students with Special Needs. 3 Hr. Curriculum planning and instructional program design for students with mild disabilities at elementary and secondary school levels; evidence-based practice in special and inclusive classrooms; lesson planning, implementation and evaluation.

SPED 381 A-Z. Special Problems and Workshop in Special Education. 2-4 Hr. PR: Consent. To take care of credits for special workshops and short intensive unit course on methods, supervision, and other special topics.

SPED 402. Educational Assessment for Students with Special Needs. 3 Hr. Formal and informal assessment procedures for eligibility decisions, program development, and progress assessment in special education, assessment accommodations, designing appropriate educational programs from assessment data.

SPED 403. Behavior Support for Students with Special Needs. 3 Hr. Theory and classroom application of intervention procedures to implement behavior changes in students with special needs; effective group and individual behavior management.

SPED 463. Collaborative-Consultative Inclusion Strategies. 4 Hr. Strategies for building and maintaining effective collaborative teams for the inclusive school environment; skills for communication, decision making, group dynamics, and conflict resolution.

SPED 491. Professional Field Experience. 1-6 Hr. PR: Consent. Student teaching with the mentally impaired.

**Service Learning (SRVL)**

SRVL 293. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293B. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293C. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293D. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293F. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293G. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293H. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293I. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293J. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293K. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293L. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293M. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293N. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293O. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293P. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293Q. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled course.

SRVL 293R. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 293S. Special Topics. 1-6Hr. Investigation of topics not covered in regularly scheduled courses.

SRVL 491: Professional Field Experience 1-18Hr PR: Consent (may be repeated up to a maximum of 18 hours) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

SRVL 492 A-Z. Directed Study. 1-3 Hr. Directed study, reading, and or research.
SRVL 493 A-Z. Special Topics 1-6Hr PR: Consent Investigation of topics not covered in regularly scheduled courses.

SRVL 494: Seminar. 1-3 Hr PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

SRVL 494A. Seminar. 1-3 Hr. Presentation and discussion of topics of mutual concern to students and faculty.

SRVL 495: Independent Study 1-6Hr Faculty supervised study of topics not available through regular course offerings.

SRVL 493K. Special Topics. 1-6Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SRVL 499. Global Service Learning. 3 Hr.

Sport Studies (SS)

SS 167. Introduction to Sport Studies. 3 Hr. Examines the historical and philosophical bases, major issues and professional practices in sport studies.

SS 170. Champs/Life Skill. 1 Hr. This course is intended for first-year student athletes interested in developing and incorporating life skills in the areas of academics, athletics, career and personal development.

SS 210. Professional Issues. 1 Hr. An introduction to professional issues relevant to the field of sport psychology. Provides opportunities for students to gain practical experiences within the field.

SS 271. Sport in American Society. 3 Hr. Sociocultural investigation of sport in American society.

SS 272. Psychological Perspectives of Sport. 3 Hr. An examination of personality and behavioral factors as they affect participation in sport. Topics such as stress and sport, body image, aggression and the sport participant, and the licensure of sport psychologists highlight the course.

SS 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SS 370. Sport Finance. 3 Hr. This course will present a number of basic concepts in the budgeting and financing of sports programs and will also examine a number of critical financial issues affecting sports. Particular emphasis will be placed on intercollegiate athletic programs.

SS 373. African Americans in Sports. 3 Hr. Sociocultural and historical overview of the contributions of African-Americans in sport in America.

SS 374. Sport Studies Research Methods. 3 Hr. An analysis of descriptive and experimental research in sport psychology and sport management. Course requirements include completion of capstone research project.

SS 380. History and Philosophy of Sport. 3 Hr. This course is designed to acquaint students with philosophical issues related to sport and sport management and with individuals and events that helped shape the history of sport.

SS 383. Exercise Psychology. 3 Hr. Introduction to motivational and mental health factors associated with exercise participation.

SS 385. Social Psychology of Sport. 3 Hr. PR: SS 271 and SS 272 or Consent. An introduction to the study of how and why performance is affected by interactions with others in sport.


SS 425. Facility Planning. 3 Hr. PR: Consent. An in-depth study of sport facilities, including planning, design, liability and facility management concepts and evaluation.

SS 426. Liability in Sport. 3 Hr. An overview of the legal system as it applies to sport, including contracts, tort law, drug testing, rights of athletes, product liability, legal duties of coaches, facilities supervisors, and athletic directors.

SS 485. Sport Management. 3 Hr. PR: Senior standing. The study of management principles as they relate to sport organizations. The analysis includes specific references to planning, organizing, leading and evaluating functions of management in sport.

SS 486. Sport Marketing. 3 Hr. PR: Senior standing. The study of marketing principles as they relate to sport organizations. Specific attention is focused on the marketing planning process, marketing information systems, and internal marketing.
SS 487. Issues in Sports Studies. 3 Hr. PR: SS 271 and ENGL 101 and ENGL 102 and Junior standing. An in-depth analysis of critical issues impacting sport and the sport industry.

SS 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

SS 491 A-Z. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

SS 492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

SS 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

SS 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

SS 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

SS 496. Senior Thesis. 1-3 Hr. PR: Consent.

SS 498. Internship. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Statistics (STAT)

STAT 111. Understanding Statistics, I, II, 3 Hr. Introduction to basic concepts and ideas of statistics. Methodologies and case studies to prepare students to understand the use of statistics in the mass media and professional publications in their major field of study. Not open to students who have earned credit for STAT 211 or STAT 215.

STAT 205. Introductory Probability and Statistical Inference. I. 3 Hr. PR: MATH 150 or equivalent. Probability, random variables, expectation, random sampling, descriptive statistics, sampling distributions, estimation, hypothesis testing, linear regression, and nonparametric statistics.

STAT 211. Elementary Statistical Inference. I, II, S. 3 Hr. PR: MATH 124 or MATH 126. (Not open to students who have completed STAT 215.) Basic concepts of descriptive and inferential statistics: descriptive measures, random variables, sampling distributions, estimation, tests of hypotheses, chi-square tests, regression and correlation. (Equivalent to ECON 225.)


STAT 217. Industrial Statistics. II, 3 Hr. PR: STAT 215 or equivalent. Statistical methods for solving industrial problems including statistical quality and process control, reliability modeling, sequential analysis, and time series analysis. Methodology for these problems will utilize a statistical software program.

STAT 222. Numerical and Symbolic Methods in Mathematics and Statistics. I. 3 Hr. PR: MATH 156. Data manipulation, data visualization in two and three dimensions including animation, and scientific programming using a high-level language, symbolic manipulators, and other packages. Applications to problems in Mathematics and Statistics. (Equivalent to MATH 222.)

STAT 293 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

SOCA 298. Honors: elementary Statistical Inference. 1 Hr. Co-Requisite: STAT 211. Advanced counting techniques, Bayes Theorem, applications of specific discrete and continuous probability distributions, additional statistical inferential methods, introduction to nonparametric statistics.

STAT 312. Intermediate Statistical Methods. I, II, 3 Hr. PR: STAT 211 or STAT 215 or equivalent. Extension of basic concepts of statistical inference: estimation and hypothesis testing for more than two populations, multiple regression and correlation, curvilinear regression, analysis of variance and covariance.

STAT 313. Introductory Design and Analysis. II. 3 Hr. PR: STAT 312. Introduction to the linear model, the complete and fractional factorial experiment, and the completely random, randomized complete block, Latin square, and split-plot experimental designs.

STAT 331. Sampling Methods. I. 3 Hr. PR: STAT 211 or 215 or equivalent. Methods of sampling from finite populations, choice of sampling unit and sample survey design. Estimation of confidence limits and optimum sample size. Single and multi-stage sampling procedures.

STAT 338. Statistical Quality Control. 2 Hr.

STAT 421. Statistical Analysis System (SAS). I. 3 Hr. PR: (STAT 211 or STAT 215 or equivalent) and (CS 110 or equivalent). Introduction to the use of the Statistical Analysis System (SAS), a statistical computer program. Students will perform statistical data analysis, data file modifications, and statistical report writing.

STAT 445. Data Analysis. I. 3 Hr. PR: STAT 312 or equivalent. Computer analyses of simulated or real unbalanced data using a matrix approach to linear models. The techniques will include least squares analysis of variance and covariance, multiple and polynomial regression, and multiple discrimination.


STAT 482. Statistics Practicum. I. 1 Hr. PR: STAT 313. A capstone experience core course. Students are expected to: research and design (optionally) a study, do independent statistical analyses of a data set, and present the results in both verbal and written forms.

STAT 484. Research Presentations: Capstone. 1 Hr. PR: STAT 482 or STAT 491. Make a verbal presentation to the class based on the statistical analyses done on an applied problem from STAT 482 or STAT 491.

STAT 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

STAT 491. Professional Field Experience. 1-15 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

STAT 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

STAT 494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

STAT 496. Senior Thesis. 1-3 Hr. PR: Consent.

THEATRE (THET)
THET 101. Introduction to the Theatre. I, II, S. 3 Hr. (Open to all students.) A survey of the nature and function, the arts and crafts, and major phases in the historical development of the theatre.

THET 102. Acting. I, II. 3 Hr. (Open to all students.) Basic theories and concepts in stage acting for the beginning student. Emphasis on the physical, intellectual, emotional, and personality languages of acting.

THET 110. Stagecraft 1. I, II. 4 Hr. Fundamentals of scenery construction and technical theatre through formal lecture and practical crew experience. Requirements include assignments on scenic construction and running crews for Division productions.

THET 111. Costuming. I, II. 4 Hr. Introduction to stage costuming through lecture and practical experience. Emphasis on the application of basic sewing skills and processes used in costume construction. Laboratory requirements include assignments on crews for Division productions.

THET 112. Orientation to the Theatre. I. 3 Hr. PR: Theatre majors or minors only. An examination of basic theatre concepts and the roles of practitioners in the production process and an analysis of scripts in light of major theoretical and critical movements.

THET 113. Stage Management. Principles. I. 1 Hr. PR: THET 112 An examination of the fundamental principles that govern the contemporary stage manager.

THET 143. Freshman Directing Workshop. I, II. 1 Hr. Exploration of the collaborative relationship between director and director from the actor’s point of view.
THET 144. Fundamentals of Acting. I. 3 Hr. PR: Theatre major. An introduction to the fundamental techniques of acting with a focus on ensemble building, action, imagination, concentration of attention, and objectives. Course projects include structured improvisations and exercises leading to beginning scene study in Realism. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

THET 145. Fundamentals of Acting. II. 3 Hr. PR: THET 144. Continuation of THET 144.

THET 170. World Theatre and Drama. I. 3 Hr. Introduction to theatre and drama traditions in ten world cultures. An intercultural study of theaters, performance and staging practices, the cultural milieu, and dramatic literature.

THET 200. Sophomore Practicum. 1 Hr. Assigned theatre projects as an introduction to the elements of theatrical production. May be repeated for 4 credit hours.

THET 201. Theatre Management. 3 Hr.

THET 213. Stage Management Practicum. I, II. 2 Hr. PR or CONC: THET 112 and THET 113. Practical production experience as stage manager. May be repeated for a max of 4 hrs.

THET 220. Fundamentals of Lighting. I, II. 3 Hr. PR: THET 110 and THET 111. Fundamentals of stage lighting through formal lecture and practical experience. Laboratory requirements include assignments on the lighting/electrics crews for Division productions.

THET 221. Theatre Makeup. I, II. 3 Hr. Lecture-laboratory course in art of stage makeup. Practical makeup for the University Theatre productions.

THET 222. Sceno-Graphic Techniques. I. 3 Hr. PR: THET 110. Techniques in drafting in accordance with current graphic standards for stage design and technology. Introduction and refinement of technique and graphic style through projects and exercises.

THET 223. Introduction to Stage Design 1. 3 Hr. PR: THET 110 and THET 111. Study elements/principles of two/three dimensional design and application to scenery, lighting and costume design. Emphasis on creative analysis and communication using techniques in drawing, painting, and model making.

THET 224. Introduction to Stage Design 2. 3 Hr. PR: THET 223. Experience applying elements/principles of two/three dimensional design to study of scenery, lighting, and costume design. Studio course focusing on color theory, painting and finishing techniques in model making.

THET 230. Text Analysis. 3 Hr. For the student theatre practitioner in Acting, Design, Directing, and Stage Management. Explorations include: anchoring techniques, concept of “pressures,” and the parameters of a dramatic event.

THET 231. Advanced Text Analysis. 3 Hr. PR: THET 230. For the student practitioner in the Studio Acting Program only, exploring in more depth, and with new challenging texts, analysis techniques of THET 230 but with total focus on performing the text.

THET 240. Fundamental Vocal Techniques. I. 2 Hr. PR: Majors only. Developing the expressive voice. Understanding the anatomy and physiology of the voice, breath and resonance. Release of physical blocks.

THET 245. Intermediate Acting. II. 3 Hr. PR: THET 244. Continuation of THET 244.


THET 248. Intermediate Acting. I. 3 Hr. PR: THET 144. Continued exploration of acting techniques including exercise work in objectives, beats, actions, personalization, environment improvisation, monologue, and scene study work.

THET 249. Intermediate Acting. II. 3 Hr. PR: THET 248. Continuation of THET 249.

THET 293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.


THET 340. Stagecraft 2. 3 Hr. PR: THET 111 and THET 222. Detailed study of scenery construction and technical theatre. Emphasis on research projects, advanced scenographics, and problem-solving techniques. Practical experience through work on productions.

THET 341. Theatre Production and Design. 3 Hr. Production and design fundamentals for the performing arts including conceptualization, fabrication and maintenance of scenery, costumes, lighting and sound. Includes introduction to stage design and its translation into realized production.
THET 321. Stage Properties. 3 Hr. PR: THET 110 and THET 111. Techniques and methods for designing and fabricating stage properties for theatrical production. Practical experience in the construction of properties as class projects and/or for productions.

THET 322. Scene Design. I. 3 Hr. PR: THET 222 and THET 225. Introduction to the fundamentals of scenic design including conceptualization, development, drafting, rendering, model building and techniques of design presentation.

THET 323. Advanced Scene Design. I, II. 3 Hr. PR: THET 322. Advanced study of scenic design with an emphasis on conceptualization, rendering, model building, and alternative forms of design presentation for the performing arts. (May be repeated for a max. of 9 credit hours.)

THET 324. Costume Design 1. I, 3 Hr. PR: THET 226. Study of basic design elements as applied to costume design. Script analysis leading to conceptualization and communication through visual language. Experience in practical organization skills, paperwork and budgeting.

THET 325. Lighting Design. I, II. 3 Hr. PR: THET 220. Experience in the design of stage lighting including conceptualization, drafting and rendering techniques related to the development and presentation of lighting design. (May be repeated for a max. of 9 credit hours.)

THET 326. Advanced Costume Design. 3 Hr. PR: THET 324. Experience applying the basic principles of costume design to text, movement text, opera, dance, and puppetry. Emphasis on rendering techniques, presentation, composition, and fabric selections. (May be repeated for a max of 6 credit hours.)

THET 327. History of Costume and Decor 1. 3 Hr. PR: THET 225 and THET 226. A historical survey of clothing, artistic style and decoration from ancient Egypt to 1750. Emphasis on how stage designers employ style in the design of costumes, scenery, and properties. Field trip required.

THET 328. History of Costume and Decor 2. II. 3 Hr. PR: THET 225 and THET 226. A historical survey of clothing, artistic style, and decoration from 1750 to the present. Emphasis on how stage designers employ style in the design of costumes, scenery and properties. Field trip required.

THET 329. CAD for the Stage. I, II. 3 Hr. PR: THET 222. Study of the graphic applications of computer assisted design and drafting for stage design through project work and exercises in a studio format.

THET 330. Rendering Techniques. 3 Hr. This course allows the students to explore and develop different techniques of rendering scenic, costume, and lighting designs. Students will work in watercolor, acrylic, marker, pencil and other media.


THET 342. Stage Movement 1. 2 Hr. PR: THET 242 and Consent. Continuation of THET 242. Workshop in movement skills related to the actor's craft, including the analysis, description and execution of a broad range of movement qualities.

THET 343. Stage Movement 2. 1 Hr. PR: THET 342 or Consent. Continuation of THET 342 through work on directed projects; special topics in issues related to physicality in performance.

THET 344. Acting Studio. I. 3 Hr. PR: THET 244 or Consent. The purpose of studio is to reexamine basic acting principles and introduce advanced techniques in characterization, personalization, and given circumstances through exercises, monologue work, and intensive scene study coordinated with rehearsal and performance in THET 345.


THET 346. Actor's Craft. II. 3 Hr. PR: THET 244. Gives the general theatre student a studio style acting class experience, emphasizing exercises and monologue and scene work in a variety of styles.

THET 347. Physical Acting. 2 Hr. A practical survey of physical approaches to acting and their relevance to a contemporary actor's craft.

THET 350. Theatre Dance 1. 2 Hr.

THET 351. Theatre Dance 2. 2 Hr.

THET 352. Musical Theatre Repertory. 2 Hr.
THET 353. Musical Theatre Literature. 3 Hr.

THET 360. Theatre in the Modern World. I, II, S. 3 Hr. (May be repeated for a maximum of 6 hr.) Intensive study of the work of a playwright, a group of playwrights, or a theatrical movement of the twentieth century; particular emphasis on relationship of course materials to twentieth century values and society.

THET 361. Classic Theatre to 1650. I. 3 Hr. PR: THET 112. A survey of theatre history, with emphasis on the development of performance conditions, from classical antiquity through the middle of the seventeenth century.

THET 362. Euro-American Theatre: 1650-1850. II. 3 Hr. PR: THET 112. A survey of theatre history, with emphasis on the development of performance conditions, from the middle of the seventeenth century through the rise of realism in the 1840's.

THET 363. Modern and Contemporary Theatre. II. 3 Hr. PR: THET 112. A survey of theatre history, with emphasis on the development or performance conditions, from the late nineteenth century to the present.

THET 370. Production Dramaturgy. 3 Hr. PR: THET 112. A process-oriented course dealing with the demands and possibilities for dramaturges in the contemporary theatre. Casebooks and work with other sources contribute to the skill set for dramaturges assisting productions.

THET 400. Theatre Performance and Rehearsal Laboratory. I, II. 1 Hr. PR: Theatre major and Consent. Participation in assigned theatre projects. Appreciation of creativity and performance techniques in theatre. (May be repeated for max. 9 credit hours.) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses/

THET 401. Capstone Experience. 3 Hr. This course provides a culminating senior project for students in the areas of BFA acting, design, puppetry, and children’s theatre, as well as for the BA in theatre.

THET 402. Repertory Theatre. 1-6 Hr. PR: Consent. Rehearsal and performance techniques for producing plays in rotating repertory. Emphasis is on the creation of synthesized company of performers, designers, and technicians. (May be repeated for max. 12 credit hours.)

THET 403. Advanced Directing. II. 3 Hr. PR: THET 302 and THET 427 or Consent. Emphasis on the work of the director as an integrating artist. High level of proficiency in the direction of a one-act play is required of all students enrolled.

THET 404. Playwriting. I, II. 3 Hr. PR: Consent. Development of basic playwriting techniques. Specific assignments explore characterization, dramatic event, dialogue, tension, compression. Emphasis on the student finding one’s own voice, style, and courage to dramatize one’s view of the world.

THET 405. Advanced Playwriting. II. 3 Hr. PR: THET 404. Further exploration of dramatic technique, with emphasis on orchestrating the longer play. Also touches on script analysis of known dramatic texts and on practical problems of a playwriting career.

THET 410. Costume History. 3 Hr. History survey of dress and culture as they impacted the development of costume in art and theatre from ancient Egypt to the last decade of the twentieth century.

THET 411. Lighting Design Techniques. 3 Hr. PR: THET 325 and THET 200. An Advanced study of lighting design with emphasis on design development, cueing, and design refinement during technical rehearsals.

THET 420. Scene Painting. II. 3 Hr. PR: THET 111 and THET 422 or Consent. An introduction to the basic tools, materials, and techniques used in the fabrication of costume crafts. Emphasis on research and practical experience through hands- on project work.

THET 421. Lighting Design Techniques. 3 Hr. PR: THET 325 and THET 200. An Advanced study of lighting design with emphasis on design development, cueing, and design refinement during technical rehearsals.

THET 422. Costume Crafts. II. 3 Hr. PR: THET 111 and THET 425. Identification and application of the materials and techniques used in the fabrication of costume crafts. Emphasis on research and practical experience through hands- on project work.

THET 423. Costume History. 3 Hr. History survey of dress and culture as they impacted the development of costume in art and theatre from ancient Egypt to the last decade of the twentieth century.

THET 424. Advanced Technical Production. II. 3 Hr. PR: THET 110. Study of advanced technical procedures including rigging, welding, new materials and special effects. Emphasis on the practices and development of skills through projects.

THET 425. Advanced Costume Construction. I, II. 3 Hr. PR: THET 111. Study and practical application of costume construction techniques through development of flat-pattern/ drafting skills. Emphasis on use of research to interpret the costume rendering. Extensive hands-on experience with construction projects for Division productions. (May be repeated for a max. 6 credit hours.)

THET 427. Lighting Techniques. 3 Hr. PR: THET 220. An advanced study of the tools and technology available to lighting designers with an emphasis on the latest technological developments in moving lights and control.

THET 428. Scene Painting. II. 3 Hr. PR: THET 322 and THET 622 or Consent. An introduction to the basic tools, materials, and techniques of scene painting for the stage.

THET 429. Sound Seminar. 3 Hr. PR: THET 110. An exploration of sound design for the theatre with practical emphasis on producing and recording sound effects using ProTools and other computer software.

THET 433. Model Building. 3 Hr. PR: THET 225 and THET 226. Design and construction methods of the scenographic model are examined. Mastery is attained through the construction of 3 or 4 projects in the design studio.

THET 441. Advanced Vocal Techniques 2. II. 2 Hr. PR: THET 440 and Consent. Integrating vocal techniques in the context of rehearsal and performance in plays of heightened text and issues of period and style.

THET 442. Advanced Stage Movement 1. I. 2 Hr. PR: THET 343 or Consent. Practical application of issues of performance theory and composition. Studies in the relationship of text and movement in performance, and in the development of original performance material that uses movement as a point of departure.

THET 443. Advanced Stage Movement 2. II. 1 Hr. PR: THET 442. Continuation of THET 442 through work directed projects; special topics in issues related to physically in performance.

THET 444. Advanced Acting Studio. I. 3 Hr. PR: Consent. Continuation of advanced exercises focusing on the works of Shakespeare. Includes verse scansion, text analysis, dynamics, scene study, exercise work and characterization.

THET 445. Advanced Acting Studio. II. 3 Hr. PR: Consent. Continuation of THET 444. Rehearsal and presentation of style project, (Shakespeare, Comedy of Manners, Shaw, etc.). Also includes seminars in special topics in performance.

THET 447. Studio Scene Study 2. 1 Hr. PR: THET 444. The presentation of scenes chosen from Shakespeare and other plays of heightened text, before a panel of acting, voice and movement faculty for critique.

THET 461. Creative Dramatics. I, II, S. 3 Hr. PR: THET 144. Study and practice of creative drama for theatre education or classroom/curriculum use. Instructional methods for drama techniques and practical activities are stressed.


THET 463. Puppetry for Educators. I, 3 Hr. PR: Consent. Study of the use of puppetry in the classroom and other educational settings; Construction, manipulation, scripting, story-telling ideas to use with children. Curricular issues will be covered.


THET 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

THET 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

THET 492 A-Z. Directed Study. I, II. 1-12 Hr. PR: Consent. (May be repeated for a maximum of 12 credit hours.) Studies in theatre history, performance, stage design and technology, and theatre crafts. Subject matter and number of sections varies from semester to semester.

THET 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

THET 494 A-Z. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

THET 495. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

THET 496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


THET 498 A-Z. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

University Library Instruction (ULIB)

ULIB 101. Introduction to Library Research. 1 Hr. Focuses on the concepts and logic of information access including using the libraries' online catalog, various databases and the Internet to find quality information. Incorporates hands-on practice with electronic resources for term paper preparation.

ULIB 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

ULIB 300. Film and Media Literacy. 3 Hr. Introduction to media literacy, film vocabulary, criticism, databases, conventions, cliches, and characteristics of genre films to guide evaluating and critiquing films. On-line course; films on Media Library Reserve.
ULIB 301. Gender and the Research Process. 3 Hr. This course teaches the research process through the lens of gender. Students decide on a subject, write a research question, develop a working knowledge, search for information, select appropriate sources, and present results.

ULIB 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

University (UNIV)
UNIV 101. Orientation: First-Year Experience. 1 Hr. Support the first-year student to make a successful transition from high school to college; develop a better understanding of the learning process including critical thinking; and acquire basic academic and personal "survival skills."

UNIV 101A. Orientation: First-Year Experience. 1 Hr. Support the first-year student to make a successful transition from high school to college; develop a better understanding of the learning process including critical thinking; and acquire basic academic and personal "survival skills."

UNIV 194. Freshman Seminar. 1-3 Hr. Presentation and discussion of topics of mutual concern to students and faculty.

United States Air Force (USAF)
USAF 100. Leadership Laboratory. 1 Hr. Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force junior officers and complement the AFROTC academic program. Leadership Laboratory enrollment is restricted to AFROTC cadets.


USAF 251. Air and Space Power 1. 1 Hr. CoReq: USAF 100. Survey course designed to introduce students to the Air Force heritage and leaders with respect to the evolution and employment of air and space power. Analysis of operational examples will emphasize development and application of competencies, functions, and doctrine.

USAF 252. Air and Space Power 2. 1 Hr. Continuation of USAF 251.


USAF 371. Leadership Studies 1. 3 Hr. CoReq: USAF 100. Student of leadership, management, professional knowledge, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used as a means of exercising practical application of concepts.


USAF 481. National Security/Active Duty 1. 3 Hr. PR: USAF 100-level classes and USAF 200-level classes or special permission form Aerospace Studies Department. Examines the national security process, regional studies, leadership ethics, and USAF doctrine. Topics include the military as a profession, officerhood, military justice, civilian control of the military, active duty preparation, and issues affecting military professionalism.

USAF 482. National Security/Active Duty 2. 3 Hr. PR: USAF 100-level classes and USAF 200-level classes or special permission from Aerospace Studies Department. USAF 131, 132, 251, 252, 371, 372, 481, and 482 may be taken out of sequence if unusual circumstances warrant and the student received approval from the professor of Aerospace Studies.

USAF 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

USAF 491. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.


USAF 494. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.


USAF 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.
Veterinary Science (VETS)

VETS 302. Animal Pathology. 3 Hr. PR: ANPH 301 or Consent. Diseases of farm animals with special emphasis on their cause, prevention, and control.

VETS 401. Veterinary Anatomy. 3 Hr. PR: Junior standing or consent. Functional study of domestic and farm animal anatomy.

VETS 405. Parasitology. 3 Hr. PR: (BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104) or ( BIOL 115 and BIOL 116). Common parasites of farm animals, their life cycles, effects on the host, diagnosis, control, and public health importance. (3 hr. lec., 1 hr. lab.)

VETS 411. Principles of Laboratory Animal Science. 3 Hr. PR: Consent for undergraduates. The production, genetics, physiology, nutrition, disease and regulations of laboratory animals use in research and teaching. This course meets minimal requirements for laboratory animal technical certification programs of the American Association of Laboratory Animal Science (AALAS).

VETS 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

VETS 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

VETS 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

VETS 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

VETS 496. Senior Thesis. 1-3 Hr. PR: Consent.

VETS 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Wood Science (WDSC)

WDSC 100. Forest Resources in US History. 3 Hr. Examines human use of forest resources in America from pre-Colombian times to present. Exploration of factors that impact the use of wood products.

WDSC 223. Wood Anatomy and Structure. 3 Hr. PR: FOR 205. Anatomy and structure of commercial wood species of the U.S. Survey of basic properties of wood.

WDSC 232. Wood Grading and Procurement. 3 Hr. PR: Forestry major or consent. Conversion and grading of raw materials in log form to primary wood products. Introduction to timber procurement systems.

WDSC 293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

WDSC 293A, B. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

WDSC 330. Wood Machining. 3 Hr. Introduction to basic concepts of wood machining with emphasis on production equipment and furniture manufacturing. Special topics of wood joining techniques and methods. Analysis of operational safety, health hazards and accident prevention. fall of even years.)

WDSC 337. Wood Adhesion and Finishing. 3 Hr. PR: Wood Industry major or Consent; WDSC 223. Fundamentals of the bonding and finishing of wood including preparation, processing, and evaluation of adhesive and finishing systems.

WDSC 340. Physical Properties of Wood. 3 Hr. PR: WDSC 223. Specific gravity and density of wood; relationships between wood and liquids and applications in wood seasoning; thermal electrical and acoustical properties.

WDSC 341. Wood Mechanics. 3 Hr. PR: Wood Industry major or Consent; and WDSC 223, and MATH 155, and PHYS 101. Introduction to static properties of selections, elementary mechanics of deformable bodies, axial loading, column and beam analysis, and design considerations. (2 hr. lec., 1 hr. lab.)

WDSC 351. Forest Products Protection. 3 Hr. PR: WDSC 223. Biological organisms responsible for deterioration of wood products, their control by preservative methods, and study of fire retarding methods.

WDSC 362. Forest Product Decision-Making. 4 Hr. PR: Junior standing in Forestry and MATH 155 and STAT 211. Use of decision making tools and techniques by forest products industry professionals, including examples of control
chart techniques and acceptance sampling techniques, simulation modeling, linear programming, forecasting and network analysis. (4 hr. lec.)

WDSC 400. Forest Measurement Field Practice. 3 Hr. PR: Wood Industry Major and FOR 205 and FMAN 322 and CE 200. Application of surveying and mensurational practices with emphasis on field problems.

WDSC 401. Wood Industries Field Trip. 1 Hr. A one-week trip to observe manufacturing methods and techniques of commercial wood industry plants. Plants visited include furniture, plywood, veneer, hardboard, pulp and paper, sawmilling, and preservation.

WDSC 413. Wood Chemistry. 3 Hr. PR: Wood Industry major or Consent, and CHEM 231 or CHEM 233. Chemical composition of wood including cellulose, hemicellulose, and extractives. Chemical processing of wood.

WDSC 422. Harvesting Forest Products. 3 Hr. PR: MATH 128 or equivalent and WDSC 232. Analysis of ground-based and cable harvesting systems, including time and motion studies, productivity and cost analysis, occupational safety and health, environmental issues, equipment evaluation and selection, and trucking of forest products. (2 hr. lec., 1 hr. lab.)

WDSC 423. Forest Roads. 4 Hr. PR: CE 200 and CS 101. A study of techniques and methods of design, layout and construction details of various standards of forest roads.

WDSC 460. Plant Layout for Wood Industries. 3 Hr. PR: Senior standing. Relations knowledge of wood product processes to optimize production. Study of proper arrangement of machines, and work and storage areas.

WDSC 465. Wood-based Composite Materials. 3 Hr. PR: WDSC 232 and WDSC 340 and WDSC 341. Fundamentals of manufacturing wood-based composite materials, including processing, products, evaluation, and applications in the marketplace. (2 hr. lec., 1 hr. lab.)

WDSC 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

WDSC 491. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

WDSC 493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

WDSC 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

WDSC 495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

WDSC 496. Senior Thesis. 1-3 Hr. PR: Consent.

WDSC 498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

Wildlife and Fisheries Mgmt (WMAN)

WMAN 100. The Tradition of Hunting. 3 Hr. Introduction to the cultural and spiritual role of hunting; use of hunting as a wildlife management tool; and its economic value in wildlife conservation programs. Includes discussions on gun control, anti-hunting, and animal rights.

WMAN 150. Principles of Conservation Ecology. 3 Hr. Overview of the science of conservation ecology with emphasis on the concepts of biological diversity, extension, habitat loss and fragmentation, establishment of protected areas, endangered species, and establishment and preservation of new populations.

WMAN 175. Introduction to Wildlife and Fisheries. 3 Hr. Introduction to the study and management of Wildlife and Fisheries resources of the Appalachians. Includes an overview of resource management history, career opportunities, natural resources policy, and the basic life of birds, mammals, and fishes.

WMAN 221. Interpretive Bird Study. 3 Hr. PR: BIOL 117 or consent. Intensive field studies in recognition through sight, song, and behavioral patterns of birds, and their ecology in the Central Appalachians. (2 hr. lec., 2 hr. lab.)

WMAN 224. Vertebrate Natural History. 3 Hr. PR: BIOL 117 or consent. Relationships of fish, amphibians, and reptiles to the forest, with emphasis on the ecology, taxonomy, evolution, natural history, and field identification of these groups. Laboratory emphasizes natural history and anatomy of fish, amphibians, and reptiles.

WMAN 234. Forest Wildlife Management. 3 Hr. Principles and problems of forest wildlife management with emphasis on habitat management at the stand and landscape levels. Habitat manipulations through use of appropriate silvicultural practices, wildlife enhancement techniques, and regulations are evaluated.
WMAN 250. Big Game Ecology and Management. 3 Hr. Intensive field trip and on-line material emphasizing white-tailed deer and black bear ecology with additional material on western game species and exotics.

WMAN 260. Waterfowl Ecology. 3 Hr. Intensive field-trip and on-line material emphasizing the ecology of waterfowl and management of wetland habitats.

WMAN 281. Attitudes Toward Wildlife. 3 Hr. A consideration of our changing perception of and relationships toward wild animals.

WMAN 293A. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

WMAN 300. Wildlife and Fisheries Techniques. 3 Hr. PR: WMAN 150 and WMAN 175 and WMAN 224 and WMAN 234 and FOR 205. Field and laboratory techniques for the scientific management and evaluation of wildlife and fisheries resources.

WMAN 313. Wildlife Ecosystem Ecology. 4 Hr. PR: BIOL 115 and BIOL 117. Basic principles of ecosystem, community, and population ecology. Emphasizing structure, function, succession, physiological ecology, population growth and regulation, and systems modeling.

WMAN 314. Marine Ecology. 3 hr. Study of key coastal species and their interactions. Self-paced lectures and exercises culminating with one-week capstone trip to Atlantic coast for hands-on study of invertebrates, coastal fishes and birds, and marine ecology.

WMAN 421. Renewable Resources Policy and Governance. 3 Hr. PR: Consent. Forest, wildlife, fisheries, and recreation resource policies of the world, with an emphasis on the U.S. important federal and state laws; governance of public and private lands and renewable natural resources. (Crosslisted with FOR 421)

WMAN 425. Mammalogy. 3 Hr. PR: BIOL 117 or consent. Mammals and their biological properties with emphasis on life history, ecology, and distribution of regional forms.

WMAN 426. Ornithology. 3 Hr. PR: BIOL 115 and BIOL 117 or consent. Identification, distribution, and ecology of birds (particularly of forest lands.) (2 hr. lec., 1 hr. lab.)

WMAN 431. Wildlife Habitat Techniques. 3 hr. PR: Wildlife major or consent; WMAN 313 and FOR 205. Field and laboratory techniques necessary in management and study of wildlife; collection of field data, mapping, censusing, habitat evaluation, wetland delineation, use of literature and scientific writing.

WMAN 445. Introduction to Fisheries Management. 3 Hr. PR: WMAN 224 or consent. Basic principles of management of fishery resources, with an emphasis on freshwater stocks. Includes current environmental and management issues, concepts, and methods used in management of commercial and recreational fisheries.

WMAN 446. Limnology. 4 Hr. PR: (BIOL 101 and BIOL 103) or WMAN 224 or consent. Physical, chemical, and biological characteristics of inland waters with emphasis on the structure and function of stream ecosystems.

WMAN 449. Stream Ecosystem Assessment. 3 Hr. Self-paced lectures and exercises culminating in a one-week trip to the mountains of West Virginia for hands-on study of stream fishes, invertebrates, water and habitat quality, geomorphology, and ecology.

WMAN 490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

WMAN 491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

WMAN 492 A-Z. Directed Study. 1-6 Hr. Directed study, reading and/or research.

WMAN 493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

WMAN 494. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

WMAN 496. Senior Thesis. 1-3 Hr. PR: Consent.

WMAN 498. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study or research.

Womens Studies (WMST)
WMST 150. Women in Movies. 3 Hr. Through viewing popular Hollywood films, we will analyze femininity across the life span. Critical thinking and cultural analysis will be practiced as we study heroines, working girls, motherhood, brides, cheerleaders, and old women on screen.
WMST 170. Introduction to Women's Studies. I, II. 3 Hr. (May be credited to University LSP Cluster A or B.) The major contexts in which woman's identity has been and is defined and of the relationships between these definitions and the roles and history of women (and men) in society and and culture.

WMST 215. African Women Writers. 3 Hr. Selected works by African women writers. (Also listed as FLIT 215.)

WMST 220. Medieval Women Mystics. 3 Hr. History, writings, and impact of mystics, including but not limited to, Hildegard of Bingen, Saint Clare of Assisi, Julian of Norwich, Saint Catherine of Siena, Saint Catherine of Genoa, and Saint Teresa of Avila.

WMST 225. Women in Appalachia. 3 Hr. Use variety of sources to explore how race, class, ethnicity, sex and gender impact lives of diverse Appalachian women, including portrayal of women, stereotypes, impact of stereotypes, and how women construct their own identities.

WMST 245. Women in International Development. 3 Hr. To examine the cultural diversities in the definition of women's roles and status, to investigate women's access to education, health, income, credit and technology, and to study women's contributions in third world development. (Also listed as TE 430.)

WMST 250. Women in Science. 3 Hr. History of women in science and methods of gender analysis applied to issues facing women in science in the United States.

WMST 281. American Indian Women Writers. 3 Hr. Studies tribal oral tradition and its continuing existence in prose, myths, poetry, and stories. The works of contemporary Native American women writers will be studied and discussed as an outgrowth of this tradition.

WMST 293 A-Z. Special Topics. I, II, S. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

WMST 310. The Aging Woman. 3 Hr. Does gender make a difference in the aging process? This course examines the female experience of growing older. Lecture, discussion, review of literature, with focus on selected works of literature and the creative arts.

WMST 320. Women, Religion and Spirituality. 3 Hr. Explores the exclusion of women from leadership in institutions of religion, the nature of the development of theology and spirituality that has disavowed the contributions of women, diversity of religious experience, writings of feminist theologians.

WMST 330. Feminist Theory. 3 Hr. Explores current feminist theory through works by diverse scholars, focusing on questions of essentialism, difference, sexuality, bodies, language, power, economic and ecological justice, intersections of race, class and gender, and global social justice struggles.

WMST 340. Gender and Violence. 3 Hr. Gender violence has implications for all members of society. This course will examine violence in the lives of women across the lifespan. Etiology, theories, effects, and prevention modalities will be evaluated.

WMST 448. Sexuality in American Culture. II. 3 Hr. Explores changes in sexuality in the United States from the seventeenth century to the present, examining social and cultural struggles and debates over the meaning of sexuality and sexual orientation in American society.

WMST 449. Women's Movements Since 1960. 3 Hr. Comparison of U.S. "Second wave" and "Third Wave" feminisms; validity of the concepts of "waves" of feminism; and impact of race, class, sexual orientation, on perspectives on women's status

WMST 484. Seminar: Capstone. 3 Hr. PR: Consent. Required of all women's studies students. Students will broaden their theoretical definitions of feminism and women's studies to include non-western models and solutions, pairing this study with a local service project informed by global activists.

WMST 490. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

WMST 491. Independent Study. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.


WMST 494 A-Z. Seminar. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

WMST 495. Independent Study. I, II, S. 1-3 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.


WMST 498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.
West Virginia University Faculty

College of Business and Economics

Accounting

Professors
David B. Pariser, Ph.D. (So. Ill.). CPA, CMA, CFE, CVA, CGFM. Financial accounting, Governmental and not-for-profit accounting, Managerial accounting.

Associate Professors
Bonnie W. Morris, Ph.D. (U. Pitt.). CPA. Accounting information systems, Intelligent systems, E-commerce, Information technology auditing.

Assistant Professors
Arron Scott Fleming, Ph.D. (Va. Tech.). CPA. Auditing, Accounting systems.

Lecturers

Emeriti
Gail A. Shaw, Ph.D. (U. Mo.). CPA. Emeritus.

Economics

Professors
Ronald J. Balvers, Ph.D. (U. Pitt.). Financial economics, Macroeconomic theory.
George Selgin, Ph.D. (NYU). Economics history. Monetary economics.
Russell S. Sobel, Ph.D. (Fla. St.). Public economics, Public choice.
Tom S. Witt, Ph.D. (Wash. U., St. Louis). Econometrics, Energy economics, Regional economics.

Associate Professors
Santiago Pinto, Ph.D. (U. III.). Public economics, Urban economics.

Assistant Professors
Arabinda Basistha, Ph.D. (U. Wash.). Open economy macroeconomics, Monetary.
Eran Guse, Ph.D. (U. Ore.). Macroeconomics. Monetary and fiscal policy.
Feng Yao, Ph.D. (Ore. St. U.). Theoretical and applied econometrics, Industrial organization.

Emeriti
Lewis C. Bell, Ph.D. (U. Ky.). Emeritus.
Thomas Campbell, Ph.D. (U. Pitt.). Emeritus.
Kern Kymn, Ph.D. (U. Chi.) Emeritus.
Patrick C. Mann, Ph.D. (Ind. U.). Emeritus.

Finance

Professors
Victor Chow, Ph.D. (U. Ala.). Corporate finance, Portfolio management.

Associate Professors
Ashok Abbott, Ph.D. (VPI & SU). Financial institutions, Corporate finance, Mergers and acquisitions.
Terry L. Rose, Ph.D. (U. Ill.). Insurance, Risk management.
Assistant Professors

Lecturer

Emeriti
Howard L. Brewer, Ph.D. (U. La.). Emeritus.
Frederick C. Scherr, Ph.D. (U. Pitt.). Emeritus.

Management and Industrial Relations
Professors
Neil Bucklew, Ph.D. (Wisc.). Economics, Industrial relations.
Jack A. Fuller, Ph.D. (U. Ark.). Heuristic decision making, Production planning and control, Systems analysis and design.


Associate Professors
Gerald Blakely, Ph.D. (U.N.C.). Human resources management, Organizational behavior.
David Dawley, Ph.D. (Fla. St. U.). Strategic management.
James Denton, Ph.D. (Kent St. U.). Decision science, Operations management.
Virginia F. Kleist, Ph.D. (U. Pitt.). Management information systems.
Nancy McIntyre, Ph.D. (U. Rhode Island). Management, Organizational behavior.
Graham Peace, Ph.D. (U. Pitt.). Management information systems.
Abhishek Srivastava, Ph.D. (U. Md.). Organizational behavior.

Assistant Professors
Oran Alston, Ph.D. (U. of Pitt.). Management information systems.
Richard Gentry, Ph.D. (U. Fla.). Strategic management.

Emeriti

Marketing
Professors

Associate Professors
Robert Cook, D.B.A. (Kent St. U.). Sales management, Product management, Marketing strategy and planning, Retail management.

Assistant Professors
Annie Peng Qui, Ph.D. (Kent St. U.). Brand management, International marketing, Consumer behavior.
College of Creative Arts

Art

Professors
Eve Faulkes, M.F.A. (Rhodes Island Schl. of Design). Graphic design.
Bernard Schultz, Ph.D. (U. of Pitt.). Dean, Art history, Italian Renaissance.

Associate Professors
Victoria Fergus, Ph.D. (Purdue U.). Art education.
Janet Snyder, Ph.D. (Columbia U.). Art history, Medieval art and architecture, Native American.

Assistant Professors
Ronald Aman, Ph.D. (Penn St. U.). Art education.
Kristina Olson, M.A. (Stony Brook U.). Art history, Art criticism, Modern and contemporary art.
Shoji Satake, M.F.A. (U. of Ind.). Ceramics.

Music

Professors
Peter Amstutz, D.M.A. (Peabody Cons.). Coordinator of keyboard instruments, Piano.
John Beall, Ph.D. (Eastman Schl. of Music). Composition, Theory.
Barton Hudson, Ph.D. (Ind. U.) Emeritus.
Janet Robbins, Ph.D. (Ohio St. U.). General music education.
Robert H. Thieme Jr., M.M. (WVU). Director of WVU opera theatre, Coordinator of voice, Opera, Vocal repertoire,
Accompanying-coaching.
Virginia Thompson, D.M.A. (U. of Ia.). Cornett, Chamber music.

Associate Professors
David Bess, Ph.D. (WVU). Instrumental music education.
Rose M. Crain, Emerita.
John E. Crofut, Ph.D. (Eastman Schl. of Music). Music theory.
Mary Fener, Ph.D. (U. Ill). Coordinator of music history, Music history.
John Hendricks, M.M. (WVU). Director of Bands, Conducting.
Andrew Kohn, Ph.D. (U. of Pitt.). Double bass, Theory.
Paul Scaia, M.M. (U. of Ia.). Director and coordinator of jazz studies. Jazz, Chamber music, Theory.
Molly Weaver, Ph.D. (U. Mich.). Coordinator of music education, Instrumental music education.
Assistant Professors
Lucy Mauro, D.M.A. (Peabody Cons.). Piano pedagogy, Class piano, Piano, Chamber music.
Maggie Snyder, M.M. (Peabody Cons.). Viola, Theory, Chamber music.
Lecturers

Theatre and Dance
Professors
John C. Whitty, Ph.D. (U. La.). Emeritus.
Associate Professors
Jay Malarcher, Ph.D. (LSU). History/literature/criticism.
Assistant Professors
Robert Klingelhoefer. Scenic design.
Visiting Assistant Professors
Assistant Professor - Teaching
Lecturers
Barbara Yurick, B.S. (WVU) Dance.
College of Engineering and Mineral Resources

Chemical Engineering

Professors

†Eugene V. Cilento, Ph.D. (U. Cinn.). Dean. Physiological transport phenomena, Biomedical engineering, Image analysis, Mathematical modeling.
†Dady B. Dadyburjor, Ph.D. (U. Del.). Chair. Catalysis, Reaction engineering, Micellization, Fuels and chemicals from synthesis gas, Synthesis gas from coal.
†Eugene V. Cilento, Ph.D. (U. Cinn.). Dean. Physiological transport phenomena, Biomedical engineering, Image analysis, Mathematical modeling.
†Dady B. Dadyburjor, Ph.D. (U. Del.). Chair. Catalysis, Reaction engineering, Micellization, Fuels and chemicals from synthesis gas, Synthesis gas from coal.
†Hisashi O. Kono, Dr. Engr. (Kyushu U.). Emeritus. Fluidization, Powder technology, Powder material science.
†Rakesh K. Gupta, Ph.D. (U. Del.). Berry Chair. Polymer processing, Rheology, Non-Newtonian fluid mechanics, Composite materials.
Charles M. Jaffee, Ph.D. (U. Col.). Adjunct.
†Hisashi O. Kono, Dr. Engr. (Kyushu U.). Emeritus. Fluidization, Powder technology, Powder material science.
†Rakesh K. Gupta, Ph.D. (U. Del.). Berry Chair. Polymer processing, Rheology, Non-Newtonian fluid mechanics, Composite materials.
Assistant Professors

Sushant Agarwal, Ph.D. (WVU). Research. Polymer processing, Rheology, Nanocomposites, Dispersions.
†Brian J. Anderson, Ph.D. (MIT). Natural-gas hydrates, Sustainable-energy development, Molecular dynamics, Quantum-chemical calculations.
†Robin S. Farmer, Ph.D. (U. Del.). Biomaterials, Polypeptides, Drug delivery, Biomedical engineering, Materials science.

Civil and Environmental Engineering

Professors

†Udaya B. Halabe, Ph.D., P.E. (MIT). Nondestructive evaluation and in-situ condition assessment of structures and materials, Elastic and radar wave propagation, Structural analysis and design, Structural dynamics and wind/earthquake resistant design.
†David R. Martinek, Ph.D. (U. Md.). Transportation engineering, Traffic operations, Systems analysis, Infrastructure management.
### Associate Professors
1. Karl Barth, Ph.D. (Purdue U.). Jack H. Samples Distinguished Professor of Structures, Steel structures, Bridge design and rehabilitation, Connections, Stability analysis, Experimental mechanics.

### Assistant Professors

### Research Associate Professors
1. Donald Adjeroh, Ph.D. (Chinese U. of Hong Kong). Multimedia information systems (images, video, and audio), Distributed multimedia systems.
2. Elaine M. Eschen, Ph.D. (Vanderbilt U.). Graduate coordinator for CS Ph.D. CCDM program. Design and analysis of algorithms, Graph theory, Combinatorics.

### Visiting Professors and Adjuncts
1. Donald Adjeroh, Ph.D. (Chinese U. of Hong Kong). Multimedia information systems (images, video, and audio), Distributed multimedia systems.
2. Elaine M. Eschen, Ph.D. (Vanderbilt U.). Graduate coordinator for CS Ph.D. CCDM program. Design and analysis of algorithms, Graph theory, Combinatorics.

### Research Associate Professors

### Research Associate Professors
1. Donald Adjeroh, Ph.D. (Chinese U. of Hong Kong). Multimedia information systems (images, video, and audio), Distributed multimedia systems.
2. Elaine M. Eschen, Ph.D. (Vanderbilt U.). Graduate coordinator for CS Ph.D. CCDM program. Design and analysis of algorithms, Graph theory, Combinatorics.

V. Jagannathan, Ph.D. (Vanderbilt U.). Distributed Intelligent Systems, Internet and security technologies.


K. Subramani, Ph.D. (U. Md.). Scheduling, Computational biology, Computational complexity, Polyhedral combinatorics.


Frances L. VanScoy, Ph.D. (U. Va.). Programming languages and compilers, Multisensory computing, High performance computing.

Research Associate Professors


Assistant Professors


Research Assistant Professors


Lecturers


Cynthia D. Tanner, M.S.C.S. (WVU). Graduate coordinator for software engineering.

Extension and Outreach

Extension and Outreach is a unit within the College of Engineering and Mineral Resources (CEMR) that is composed of two programs: Mining extension and industrial extension.


Industrial Extension Service

Industrial Extension Specialists


Cindy Decker, B.S. (L.S.U.). Project management, Sales and marketing, Supply chain management, Quality systems.


B. Gopalakrishnan, Ph.D. (VPI). Manufacturing processes and systems engineering, Information systems, Artificial intelligence applications, Expert systems development, Mechatronics, Facilities planning and materials handling, Databases, Industrial energy/waste productivity management.


Majid Jaraiedi, Ph.D. (U. Mich.). Statistics, Quality control, Forecasting and transportation research.
Associate Professors

†Warren R. Myers, Ph.D., C.I.H. (WVU). Associate Dean for Academic Affairs. Industrial hygiene and safety, Worker exposure assessment and modeling, Aerosol filtration, Occupational respiratory protection design and testing.


†Gary Winn, Ph.D. (Ohio St. U.). Construction safety, Transportation safety and program evaluation, Total quality management, Theory of paradigm shifts.

‡Faculty

Emeritus.

‡Ralph W. Plummer, Ph.D., P.E. (WVU). Emeritus.

‡Gary Winn, Ph.D. (Ohio St. U.). Construction safety, Transportation safety and program evaluation, Total quality management, Theory of paradigm shifts.


‡Michael J. Klishis, Ph.D. (WVU). Safe behaviors, Training and loss control, Instructional development, Mine safety and health.


‡David Whaley, Ph.D., C.I.H. (St. U. of NY at Buffalo). Emeritus.


‡Frank L. Buczek, Jr., Ph.D. (Penn. St. U.). Biomechanics.

‡Christopher Coffey, Ph.D. (WVU). Occupational safety and health, Assessment, Evaluation of respiratory protective equipment.

‡Ren Dong, Ph.D. Industrial hygiene, Exposure assessment.

‡Martin Harper, Ph.D. (London School of Hygiene and Tropical Medicine). Industrial hygiene, Exposure assessment.

‡Paul Hewett, Ph.D., C.I.H. (U. of Pitt.). Exposure assessment strategies with a focus on data analysis paradigms.


‡Thomas W. McDowell, Ph.D. (WVU). Biomechanics, Human factors.


‡Christopher Pan, Ph.D. Industrial hygiene, Exposure assessment.


‡Ziqing Zhuang, Ph.D. (WVU). Exposure assessment, Assessment and evaluation of respiratory protective equipment.

‡Mechanical and Aerospace Engineering Professors


‡Larry Banta, Ph.D. (Ga. Tech.). Automation, Controls, Energy management.

‡Ever Barbero, Ph.D. (VPI & SU). Chair, Materials, Experimental and computational mechanics.

‡Ismail Celik, Ph.D. (U. Iowa). Fluids engineering, Fuel cell technology.

‡Nigel Clark, Ph.D. (U. Natel, So. Africa). Director of Center for Alternative Fuels, Engines and Emissions (CAFEE).

‡Multiphase flows, I.C. engines and emissions.

‡Russell K. Dean, Ph.D. (WVU). Associate Provost for Academic Affairs Admin. Engineering mechanics.

‡Mridul Gautam, Ph.D. (WVU). Interim Associate VP for Research and Economic Development. Fluid mechanics, IC Engines and emissions.

‡Bruce Kang, Ph.D. (U. Wash.). Experimental mechanics, Advanced materials.


‡Jacky Prucz, Ph.D. (Ga. Tech.). Associate Chair and Graduate Program Director. Structural design, Composite materials. Solid mechanics.

‡Samir Shoukry, Ph.D. (Aston U. in Birmingham UK). Pavement modeling, Non-destructive evaluation, Structural dynamics, Neural nets, Instrumentation.


Research Professors

‡Steve Lewellen, Ph.D. (UCLA). Fluid dynamics.

‡Donald W. Lyons, Ph.D., P.E. (Ga. Tech.). Manufacturing systems engineering, Instrumentation, Engines and emissions.

‡Research Associate Professor


‡Associate Professor


‡Research Associate Professor

‡David Lewellen, Ph.D. (Cornell). Research. Fluid dynamic turbulence.

‡Assistant Professors


‡Xingbo Liu, Ph.D. (U. of Science & Technology, Beijing, China). Materials science.


†Xueyan Song, Ph.D. (Zhejiang U., China). Materials science, Electron microscopy.
†Gregory Thompson, Ph.D. (WVU). Thermodynamics, Machine design.
†Nianqiang Wu, Ph.D. (Zhejiang U., China). Materials science and engineering.

**Research Assistant Professors**
Giampiero Campa, Ph.D. (U. of Pisa). Flight control systems.
Chuanyu Feng, Ph.D. (WVU). Advanced materials, experimental mechanics.
Yu Gu, Ph.D. (WVU). Flight control systems.
Andrew Nix, Ph.D. (Va. Polytechnic Inst.). Engines and emissions.
Brad Seanor, Ph.D. (WVU). Flight controls, Parameter estimation, Flight testing, UAV technology.
Benjamin Shade, Ph.D. (WVU). Engines and emissions.

**Visiting and Adjunct Professors**
Alberto Ayala, Ph.D. (U. of Ca., Davis). Adjunct Asst. Prof. Engine emissions.
Julio Davalos, Ph.D. (Va. Tech.). Adjunct Prof. Structural mechanics.
Donald H. Ferguson, Ph.D. (WVU). Adjunct Asst. Prof. Thermal fluid sciences.
Luis A. Godoy, Ph.D. Adjunct Prof. Structural stability.
Nabil S. Hakim, Ph.D. Adjunct Prof. Engines and emissions.
Paul E. King, Adjunct Prof. Materials science.
Alejandro Lozano-Guzman, Ph.D. (U. Newcastle Upon Tyne England). Adjunct Prof. Design.
Eugene A. McKenzie, Ph.D. (WVU). Adjunct Asst. Prof. Design.
Koorsh Mirfakhraie, Ph.D. Adjunct Prof. Space systems.
Timothy L. Norman, Ph.D. (Purdue U.). Adjunct Prof., Tissue mechanics.
G. Michael Palmer, Ph.D. (WVU). Visiting Professor. Instrumentation, Microprocessor applications.
Ming Pei, Ph.D. (Peking U. China). Adjunct Asst. Prof., Tissue engineering
†Konstantinos Spyrokos, Ph.D. (U. of Minn.). Adjunct Prof. Structural stability, Finite elements.
W. George Wang, Ph.D. (WVU). Adjunct Prof. Kinematics and dynamics.
Mark C. Williams, Ph.D., F.E.C.S., (U. of Ca. at Berkeley). Adjunct Prof. Fuel cells.
Steven D. Woodruff, Ph.D. (U. of Mich.). Adjunct Prof. Laser apps, dev. and diagnostics.

**Mining Engineering Professors**
†Christopher Bise, Ph.D. (Penn. St. U.). Chair and Charles T. Holland Distinguished Professor of Mining engineering, Mine design, Mine health and safety.
Jay H. Kelley, Ph.D. (Penn St.). Distinguished. Emeritus.
Alejandro Lozano-Guzman, Ph.D. (U. Newcastle Upon Tyne England). Adjunct Prof. Design.
†Syd S. Peng, Ph.D. (Stanford U.). Charles E. Lawall Chair in Mining Engineering. Mining engineering and Longwall mining, Ground control.

**Associate Professors**
†Yi Luo, Ph.D. (WVU). Surface subsidence.

**Petroleum and Natural Gas Engineering Professors**
†Hashayar Aminian, Ph.D. (U. Mich.). Natural gas engineering, Reservoir engineering.

**Associate Professor**

**College of Human Resources and Education**
**Child Development and Family Studies Professors**
Carol A. Markstrom, Ph.D. (Utah St. U.). Ethnicity and diversity in children, adolescents, and families; Native American adolescents and families; Adolescent psychosocial and identity development.
Barbara G. Warash, Ed.D. (WVU). Director, Child Development Laboratory (Nursery Schl.). Preschool curricula, Emergent literacy development; Reggio Emilia approach.

**Assistant Professors**
Amy Kennedy, Ph.D. (U. of Md. Coll. Park). Parenting and the development of emotional competence; individual differences; development of shy/wary behavior.
Kristin Mollanen, Ph.D. (U. of Neb.). Adolescent development, Self regulation, Risk behavior, Family relationships.
Teaching Instructor
Barbara Pavel-Alvarez, M.A. (WVU). Coordinates online courses for CDFS and director's credential.

Speech Pathology and Audiology Professors
Robert F. Orlikoff, Ph.D. (Columbia U.). Speech and voice physiology, Assessment and management of voice disorders, Clinical measurements.
Charles M. Woodford, Ph.D. (Syracuse U.) Emeritus.

Associate Professors

Assistants Professors

Clinical Assistant Professor

Instructors

Teacher Education
Curriculum and Instruction/Literacy Studies with Social Cultural Foundations Professors
Elizabeth F. Howard, Ph.D. (U. of Pitt.). Emerita.
Layle D. Lawrence, Ph.D. (LSU). Emeritus.

Associate Professors
Judy Abbott, Ph.D. (U. Tex.). Literacy education, Children's writing, Motivation, Children's literature.
Stacy A. Gartin, Ph.D. (Ohio St. U.). Adjunct, Adult agricultural education, Communications, Leadership development, Teaching methods.

Assistant Professors
Allison Swan Dagen, Ph.D. (U. of Pitt.). Professional development, Adolescent reading, Reading specialist.
Sharon B. Hayes, Ph.D. (U. of Fla.). Curriculum and instruction, Elementary education.
Barbara Mertins, M.S.L.S. (Syracuse U.). Emerita.
Aimee L. Morewood, Ph.D. (U. of Pitt.). Reading education, Elementary education, Special education.

Visiting Assistant Professor

Clinical Instructors
Sarah Steel, M.A. (WVU). Program coordinator, Five-year teacher education program.

Educational Psychology

Professors
Daniel E. Hursh, Ph.D. (U. Kan.). Developmental and child psychology, Instructional and environmental design, Applied behavior analysis.
Anne H. Nardi, Ph.D. (WVU). Developmental psychology, Problem solving, Adult learning.

Associate Professors
Terence C. Ahern, Ph.D. (Penn. St.). Instructional design, Computer-mediated communication, Software engineering. 
Reagan Curtis, Ph.D. (UC Santa Barbara). Child development, especially mathematical cognition; Educational psychology, including online teaching and learning; Research methods, statistics, and program evaluation.
Neal Shambaugh, Ph.D. (Va. Tech.). Instructional design, Instructional technology integration, Cognition, Professional development

Assistant Professors
Ugur Kale, Ph.D. (Ind. U.). Instructional design, Multimedia learning, Online professional development, Teacher education, Content analysis, Social network analysis.

Teaching Assistant Professor

Special Education

Professors

Associate Professor
Ann M. Richards, Ph.D. (U. of Az.). Multicategorical special education, transition, law and policy issues.

Assistant Professors

College of Physical Activity and Sport Sciences

Professors
Carl P. Bahneman, Ph.D. (U. of Pittt.). Athletic coaching education.
Lynn Housner, Ph.D. (U. Of Pittt.). Physical education teacher education.
Andrew C. Ostrow, Ph.D. (U. Calif.). Emeritus.

Associate Professors
Faculty

Dennis Floyd Jones, Ph.D. (U. of Pitt.). Sport management.

Assistant Professors
Gonzalo Bravo, Ph.D. (Ohio St.). Sport management.
Damien Clement, Ph.D. (WVU). Sport and exercise psychology and athletic training.
Coyte Cooper, Ph.D. (Ind. U.). Sport management.
Michelle Sandrey, Ph.D. (U. Kans.). Graduate athletic training program director.
Vanessa Shannon, Ph.D. (U. Tenn.-Knoxville). Sport and exercise psychology.

Adjunct Associate Professor
John C. Spiker, M.Ed. (U. of Pitt.). Athletic training.

Clinical Instructors
Michelle Deli-Prueitt, M.S. (Middle Tenn. St.). Athletic training.
Allison Hetrick, M.Ed. (U. Cinn.). Athletic training.
Kevin Kotsko, M.Ed. (U. Va.). Athletic training.
Randall Meador, M.S. (WVU). Athletic training.

Lecturers
Brad Cox, M.S. (WVU). Sport management.
Don Nehlen, M.S. (Kent St.). Athletic coaching education.
Daniel A. Oliver, J.D. (WVU). Sport management.

Davis College of Agriculture, Forestry, and Consumer Sciences

Division of Animal and Nutritional Sciences

Professors
E. Keith Inskeep, Ph.D. (U. Wisc.). Reproductive physiology.
Paul R. Lewis, Ph.D. (WVU). Director, Reproductive Physiology.

Associate Professors
Matthew E. Wilson, Ph.D. (Iowa St. U.). Reproductive physiology.

Assistant Professors
Kimberly Barnes, Ph.D. (U. Neb.) Animal science-biochemistry.
Eugene E. Felton, Ph.D. (U. Mo.). Ruminant nutrition.
Kathleen M. Matak, Ph.D. (WPI & SU). Food science and human nutrition.

Teaching Assistant Professor
Megan Goundan, M.S., R.D. (WVU).

Clinical Assistant Professor
Margaret A. Minch, D.V.M. (Ohio St. U.). Veterinary medicine.

Visiting Assistant Professor
Kathleen T. Timperman, M.S. (U. Ill.). Food science, Human nutrition and dietetics.

Instructor
Adjunct Faculty
Robert L. Cochrane, Ph.D. (U. Wisc.).
Dale W. Porter, Ph.D. (WVU).
George R. Seiler, D.V.M. (U. Fla.).
Alfred H. Stillier, Ph.D. (U. of Cinn.). Chemistry.

Faculty Emeriti
Gerald C. Anderson, Ph.D. (U. Mo.).
Donald J. Horvath, Ph.D. (Cornell U.).
Paul M. Smith, M.S. (WVU). Food sciences.
James A. Welch, Ph.D. (U. Ill.).

Division of Design and Merchandising

Design Studies
Associate Professor
Cindy V. Beacham, Ph.D. (VPI & SU). Design for children, Intergenerational design, Interior design pedagogy, Design for special needs.

Interior Design
Associate Professor
Cindy V. Beacham, Ph.D. (VPI & SU). Design for children, Intergenerational design, Interior design pedagogy, Design for special needs.

Assistant Professors
Ronald Dulaney, Jr., M.Arch. (VPI & SU). Architectural design, Design and culture, Design media, Material and fabrication processes, Poetics of construction.
Barbara S. McFall, Ph.D. (Saybrook). Interim Director. Design issues and concepts, Design collaborations, Quality of living.

Visiting Assistant Professors

Visiting Lecturer
Lara Pitrolo, B.S. (WVU), CAD Certified (FSU). Design technology.

Fashion Design and Merchandising

Professor

Assistant Professors
Holly Lentz, Ph.D. (UNCG). Social psychology of dress, Cultural aspects of dress, Women’s studies, Consumer behavior, Fashion merchandising.
Jeong-Ju Yoo, Ph.D. (U. Minn.). Appearance management behavior, Fashion merchandising, Design theories, Product development.

Visiting Assistant Professors
Tracy Vash, Ph.D. (WVU). Product development, Apparel production, Merchandising practicum.

Faculty Emeriti
Gladyss R. Ayersman
William H. Hagerty
Mary Rose Jones
Marian B. Liddell
Betty Lou Ramsey
Janice I. Yeager

Division of Forestry and Natural Resources

Professors
Joseph F. McNeel, Ph.D. (VPI & SU). Director. Forest engineering/forest operations.  
Steven W. Selin, Ph.D. (U. Ore.). Human dimensions of natural resources; Collaborative stewardship.  

**Associate Professors**  
Chad D. Pierskalla, Ph.D. (U. of Minn.). Wildland recreation management and policy.  
Jingxin Wang, Ph.D. (U. of Ga.). Forest operations and management.  

**Assistant Professors**  
Kathryn Arano, Ph.D. (Miss. St. U.). Forest economics.  
Jinyang Deng, Ph.D. (U. of Alberta, Canada). Recreation and leisure studies.  
George Merovich, Ph.D. (WVU). Fish management.  
Kathryn Piatek, Ph.D. (N.C. St. U.). Forest management.  
David A. Smaldone, Ph.D. (U. of Idaho). Environmental interpretation and education.  
Nicolas Zegre, Ph.D. (Or. St. U.). Forest management.  

**Research Assistant Professors**  
Stuart Moss, M.S.F., MBA. (VPI). Forest business management.  
Jim Rentch, Ph.D. (WVU). Forest resources management.  

**Teaching Assistant Professor**  
George Merovich, Ph.D. (WVU).  

**Adjunct Faculty**  
Greg Corio, M.S. (WVU). Recreation.  
Mark Ford, Ph.D. (U. Ga.). Wildlife management.  
Trace Gale, Ph.D. (WVU). Forest resource science.  
Patricia M. Mazik, Ph.D. (Memphis St. U.). Fisheries.  
Gary Miller, Ph.D. (Va. Tech.). Forest management.  
Margaret Pings, M.S. (WVU). Recreation management.  
Al Shuler, Ph.D. (Iowa St. U.). Forest economics and marketing.  
Thomas M. Schuler, Ph.D. (Purdue U.). Forest management.  
Forrest Schwartz, M.S. (WVU). Recreation.  
Jeffrey Tyler, Ph.D. (St. U. N.Y.). Fisheries.  
Stuart Welsh, Ph.D. (WVU). Fisheries.  

**Faculty Emeriti**  
Eugene C. Bammel, Ph.D. (Syracuse U.).  
Lei L. Bammel, Ph.D. (U. Utah).  
Samuel Brock, Ph.D. (U. Minn.).  
Jack Coster, Ph.D. (Tex. A&M).  
David E. Samuel, Ph.D. (WVU).  
Robert L. Smith, Ph.D. (Cornell U.).  
Stanislaw Tajchman, Ph.D. (U. of Munich).  
David E. White, Ph.D. (SUNY).  
Harry V. Wiart Jr., Ph.D. (Yale U.).  
David O. Yandle, Ph.D. (N.C. St. U.).  

**Division of Plant and Soil Sciences**  
Cameron R. Hackney, Ph.D. (N.C. St. U.). Dean and Director. Food safety, Environmental microbiology.

**Associate Professors**

James B. Kotoch, Ph.D. (U. Wisc.). Plant pathology, Nemotology.
Louis McDonald, Ph.D. (U. Ky.). Soil chemistry.
James A. Thompson, Ph.D. (U. of Minn.). Agronomy. Soil science, Water resources.
Sven Verlinden, Ph.D. (Purdue U.). Horticulture.

**Assistant Professors**

Yong-Lak Park, Ph.D. (Iowa St. U.). Insect ecology, Pest management.
Eugenia M. Pena-Yewtukhiw, Ph.D. (U. of Ky.). Soil science.
Chandran Rakesh, Ph.D. (Va. Tech.). Weed management. IPM.

**Adjunct Faculty**

Tong-Man Ong, Ph.D. (Ill. St. U.). Genetics.
Thomas van der Zwet, Ph.D. (LSU). Plant pathology.
Paul F. Ziemkiewicz, Ph.D. (U. Br. Col.). Land reclamation

**Faculty Emeriti**

Robert E. Anderson, Ph.D. (U. Wisc.).
John A. Balasko, Ph.D. (U. Wisc.).
Bradford C. Bearce, Ph.D. (U. Calif.).
James L. Brooks, Ph.D. (U. Calif.).
Linda Butler, Ph.D. (U. Ga.).
Edward S. Elliott, Ph.D. (WVU).
Mannon E. Gallegly Jr., Ph.D. (U. Wisc.).
L. Morris Ingle, Ph.D. (Purdue U.).
Robert F. Keefer, Ph.D. (Ohio St. U.).
Joginder Nath, Ph.D. (U. Wisc.).
Oscar E. Schubert, Ph.D. (U. Ill.).
John C. Sencindiver, Ph.D. (WVU).
Rabindar N. Singh, Ph.D. (VPI & SU).
Charles B. Sperow Jr., M.S. (WVU).
Robert J. Young, Ph.D. (Ore. St. U.).
Richard K. Zimmerman, Ph.D. (WVU).

**Division of Resource Management**

**Agricultural and Extention Education**

**Professor**

Stacy A. Gartin, Ph.D. (Ohio St. U.). Communications, Program planning, Leadership development, Teaching methods.

**Associate Professors**

Deborah A. Boone, Ph.D. (Ohio St. U.). Extension education, Leadership development, Program evaluation and development.

**Assistant Professor**

Douglas D. LaVergne, Ph.D. (Tex. A&M). Diversity, Multiculturism, Technical education, Qualitative research.

**Agricultural and Resource Economics**

**Professors**

Jerald J. Fletcher, Ph.D. (U. Cal.). Resource economics.
Tim T. Phipps, Ph.D. (U. Cal.). Interim Director. Resource economics, Agricultural policy.
Peter V. Schaeffer, Ph.D. (U. Southern Cal.). Regional science, Applied microeconomics.

**Associate Professors**


**Assistant Professors**

Doolarie Singh-Knights, Ph.D. (WVU). Natural resource economics.
Michael Strager, Ph.D. (WVU). Spatial analysis of natural resources.
Landscape Architecture

**Associate Professors**
Ashley Kyber, M.S. (Clemson U.). M.F.A. (Cranbrook Academy of Art). Community design landscape/public art,
Environmental/green design.

**Assistant Professors**
Claudia Bernasconi, M.S. (Rome, Italy). Environmental aesthetics, Aesthetics of transportation, International
and interdisciplinary teaching.
Peter M. Butler, M.L.A. (Iowa St.). Cultural landscape planning and interpretation, Community design.

**Professors Emeriti**
P. Vernon Armbrester, M.S. (WVU).
Alfred L. Barr, Ph.D. (Okla. St. U.).
Dale K. Colyer, Ph.D. (U. Wisc.).
Gerald V. Eagan, Ph.D. (U. Tenn.).
Warren G. Kelly, Ed.D. (U. Mo.).
Marion L. Kimmons, Ph.D. (U. Mo.).
Walter C. Labys, Ph.D. (U. Nottingham).
Layle D. Lawrence, Ph.D. (L.S.U.)
George W. Longenecker, M.F.A. (U. Ill.).
Beryl B. Maurer, Ph.D. (Penn. St. U.).
Kenneth D. McIntosh, Ph.D. (U. Wisc.).
Leonard M. Sizer, Ph.D. (WVU).
Ronald L. Stump, M.S. (WVU).
Mary E. Templeton, M.S. (WVU).
Delmar R. Yoder, Ph.D. (U. Wisc.).

Eberly College of Arts and Sciences

**Biology**

**Professors**
Jonathan R. Cumming, Ph.D. (Cornell U.). Assistant Vice President for Graduate Education. Environmental plant
physiology, Ecophysiology of root-mycorrhizal-soil interactions, Urban ecology.
Keith Garbutt, Ph.D. (U.C.N., Wales). Dean, University Honors Program. Population genetics: Ecological genetics
and population biology of weedy plants.
Demography, Forest remote sensing.
change biology, Multiple resource limitations.

**Associate Professors**
Clifton P. Bishop, Ph.D. (U. Va.). Molecular genetics, Developmental biology, Forensic biology.
William T. Peterjohn, Ph.D. (Duke U.). Ecosystem ecology: Effects of global change on ecosystem dynamics,
Nitrrogen cycling in natural ecosystems.
Susan Studlar, Ph.D. (U. Tenn.). Adjunct. Bryology and botany.
Jeffrey D. Wells, Ph.D. (U. Ill. at Chicago). Chair, Molecular systematics, Forensic genetics, Insect evolution.

**Assistant Professors**
Carina Barth, Ph.D. (Heinrich Heine U.). Stress Physiology: Plant defense signaling in response to biotic and abiotic
stress.
Kevin C. Daly, Ph.D. (U. Az.). Sensory neurobiology, Neural coding, Brain-behavior interactions, Comparative
psychobiology.
Steven DiFazio, Ph.D. (Ore. St. U.). Plant genomics, Molecular ecology, Plant population genetics, Biotechnology
risk assessment.
Sarah M. Farris, Ph.D. (U. Ill.). Evolution and development of the insect brain, Neuroanatomy.
Genome biology.
Michelle D. Withers, Ph.D. (U. Az.). Biology education, Neurobiology.
Clinical Associate Professor

Clinical Assistant Professor
Jane Caldwell, Ph.D. (U. Wisc).

Teaching Assistant Professors
Kevin Lee, Ph.D. (Temple U. SoM).
Catherine Merovich, Ph.D. (WVU).

Senior Lecturers
Sue Rayman, Ph.D. (Bucknell U.).
Beth Thomas, M.S. (Clemson U.).

Professors Emeriti
Charles H. Baer, Ph.D. (U. Md.).
David F. Blaydes, Ph.D. (Ind. U.).
Roy B. Clarkson, Ph.D. (WVU).
William E. Collins, Ph.D. (U. of Wisc.).
Dorothy C. Dunning, Ph.D. (Tufts U.).
Ramsey H. Frist, Ph.D. (U. Pitt.).
Roland B. Guthrie, Ph.D. (WVU).
Joseph A. Marshall, Ph.D. (U. Md.).
Ethel C. Montiegel, M.S. (WVU).
Richard P. Sutter, Ph.D. (Tufts U.).
Leah A. Williams, Ph.D. (WVU).

Chemistry

Professors
Terry Gullion, Ph.D. (William and Mary). Chairperson. Physical chemistry, Solid state NMR, Biological materials, Polymers.
Charles Jaffe, Ph.D. (U. Colo.). Theoretical chemistry, Molecular dynamics, Nonlinear mechanics.
Fred L. King, Ph.D. (U. Va.). Analytical chemistry, Mass spectrometry, Trace elements, Gas-phase in chemistry.
Kenneth Showalter, Ph.D. (U. Colo.). Bennett Distinguished Professor. Physical chemistry, Chemical kinetics, Multistability and oscillating systems.
Björn Söderberg, Ph.D. (Royal Inst. of Tech., Sweden). Organic synthesis using transition metals.

Associate Professors
George O'Doherty, Ph.D. (Ohio St. U.). Carbohydrate and natural product synthesis.
Ronald B. Smart, Ph.D. (U. Mich.). Environmental analytical chemistry, Electrochemistry, Trace metals, Coal chemistry.
Alan M. Stoilzenberg, Ph.D. (Stanford U.). Inorganic chemistry, Bioinorganic chemistry, Organometallic chemistry.

Assistant Professors
Suzanne Bell, Ph.D. (New Mexico St. U.). Analytical chemistry, Forensic science.

Communication Studies

Professors
Melanie Booth-Butterfield, Ph.D. (U. Missouri). Interpersonal, nonverbal, health, and instructional communication.
Matthew M. Martin, Ph.D. (Kent St.). Chair. Instructional communication, Interpersonal and family communication, Personality.
Virginia P. Richmond, Ph.D. (U. Neb.). Emerita.

Associate Professors
Theodore A. Avtgis, Ph.D. (Kent St.). Organizational communication. Personality. Medical communication.
Scott A. Myers, Ph.D. (Kent St.). Instructional, small group, interpersonal, and family communication.
Brian R. Patterson, Ph.D. (U. of Okla.). Interpersonal communication, Communication theory, Communication and development.


John D Shibley, Ph.D. (Ohio St. U.). Film appreciation, Communication and nonviolence.


**Assistant Professors**

Maria Brann, Ph.D. (U. of Ky.). Health communication, Interpersonal communication, Qualitative methods.


**Computer Science Professors**


Powsiri Klinkhachorn, Ph.D. (WVU). Microprocessor applications, Computer architecture, Binary and non-binary logic.

Afzel Noore, Ph.D. (WVU). Fault-tolerant computing, Design for testability, VLSI design and testing, Software engineering, Consumer electronics.


Brian D. Woerner, Ph.D. (U. Mich.). Lane professor and chairperson. Communication systems, Multi-antenna communications techniques, Low power implementation of signal processing for communications.

**Associate Professors**

Donald A. Adjeroh, Ph.D. (Chinese U. of Hong Kong). Multimedia information systems (images, video, and audio), Distributed multimedia systems.


Elaine M. Eschen, Ph.D. (Vanderbilt U.). Design and analysis of algorithms, Graph theory, Combinatorics.


James D. Mooney, Ph.D. (Ohio St. U.). Operating systems, Computer architecture, Software portability.


K. Subramani, Ph.D. (U. of Md.). Design and analysis of algorithms, Complexity, Combinatorics.


Frances L. Van Scoy, Ph.D. (U. Va.). Programming languages and compilers, Software engineering, Parallel processing.

**Assistant Professors**


Vinod Kulathumani, Ph.D. (Ohio St.). Research, Distributed sensor networks, Networking.


Natalia Schmid, Ph.D. (St. Louis U.). Research, Statistical signal processing, Biometrics, Communications.
Lecturers
Camille Hayhurst, M.S.C.S. (WVU). Software development/engineering, Database.

Economics
Professors
Ronald J. Balvers, Ph.D. (U. of Pitt.). Financial economics, Macroeconomic theory.
Lewis C. Bell, Ph.D. (U. Ky.). Emeritus.
Thomas Campbell, Ph.D. (U. of Pitt.). Emeritus.
Victor Chow, Ph.D. (U. Ala.). Adjunct. Corporate finance, Portfolio management, Microeconomics.
Randall W. Jackson, Ph.D. (U. of Ill.). Adjunct. Geography, Regional research.
Patrick C. Mann, Ph.D. (Ind. U.). Emeritus.
Russell S. Sobel, Ph.D. (Fla. St.). Public economics, Public choice.
Tom S. Witt, Ph.D. (Wash. U., St. Louis). Econometrics, Energy economics, Regional economics.

Associate Professors
Santiago Pinto, Ph.D. (U. of Ill.). Microeconomic theory, Public economics, Urban economics.

Assistant Professors
Arabinda Basistha, Ph.D. (U. of Wash.). Open economy macroeconomics, Monetary economics.
Christopher J. Coyne, Ph.D. (George Mason U.). Economic development, Political economy.
Eran Guse, Ph. D. (U. of Oregon). Macroeconomics, Monetary economics.

English Language and Literature
Professors
Dennis Allen, Ph.D. (U. Minn.). Critical theory, Prose fiction.
Rudolph P. Almasy, Ph.D. (U. Minn.). Renaissance and Reformation studies, Composition.
Laura Brady, Ph.D. (U. Minn.). Eberly Family Distinguished Professor of Outstanding Teaching. Composition and rhetorical theory, Writing program administration.
Patick Conner, Ph.D. (U. Md.). Eberly College Centennial Professor in English. Old English literature, Anglo-Saxon studies, Paleography, Humanities computing.
Elaine K. Ginsberg, Ph.D. (U. Okla.). Emerita.
Donald E. Hall, Ph.D. (U. Md.). Chair. Jackson Family Distinguished Professor, Victorian literature, Gender theory.
Thomas Miles, Ph.D. (SUNY). Emeritus.
Kevin Oderman, Ph.D. (U. Cal. Santa Barbara). Creative Writing, Modern poetry, American literature.
Judith G. Stitzel, Ph.D. (U. Minn.). Emerita.
Timothy Sweet, Ph.D. (U. Minn.). American studies, Literature and environment, Native American literature.

Associate Professors
Sandy Baldwin, Ph.D. (NYU). Digital/media poetics, Critical theory, Experimental literature.
Anna Shannon Elfenbein, Ph.D. (CUNY). Shakespeare, Early modern literature, Post-colonial studies.
Lara Farina, Ph.D. (Fordham U.). Medieval literature and culture, History of sexuality and reading.
Marilyn Francus, Ph.D. (Columbia). Restoration and eighteenth century literature.
Ellesa C. High, Ph.D. (Ohio U.). Native American studies, Appalachian literature, Creative writing.
Adam Komisaruk, Ph.D. (U. Va.). British Romanticism, 18th-century British literature.
Russell C. MacDonald, Ph.D. (U. Penn.). Emeritus.
Susan Shaw Sailer, Ph.D. (U. Wash.). Emerita.
Dorothy Sedley, M.A. (Sonoma St. C.). Emerita.
David Stewart, Ph.D. (Oxford). Dean of Students. British romanticism, Literary theory.
Lisa Weihman, Ph.D. (NYU). Modern British and Irish literature and culture.
Assistant Professors
Ryan Claycomb, Ph.D. (U. Md.). 20th-century British literature, Drama, Gender studies.
Jay Dolmage, Ph.D. (Miami U.). Composition and rhetoric, Disability studies.
Winston Fuller, M.A. (U. Colo.). Emeritus.
Catherine Gouge, Ph.D. (WVU). Professional writing, Distance learning, Media studies.
Emily Mitchell, M.F.A. (Brooklyn Coll.). Creative writing, Fiction.
Margaret Racin, M.A. (WVU). Emerita.
Nathalie Singh-Corcoran, Ph.D. (U. Az.). Writing Center theory and practice, Writing program administration, Writing assessment.
Teaching Assistant Professors
Mary Angel Blount, M.F.A. (LSU). Composition, Creative writing.
Thomas Bredehoft, Ph.D. (Ohio St. U.). Compilition, Medieval studies.
Elizabeth Juckett, Ph.D. (Penn.). Composition, Victorian literature, Women writers.
Lisa Wellinghoff, Ph.D. (U. Tulsa). Composition, Contemporary american literature.
Teaching Instructor

Foreign Languages
Professors
Valerie Lastinger, Ph.D. (U. Ga.). 18th century French literature, French women writers.
Kathleen McNerney, Ph.D. (U. N.M.). Spanish, Catalan language and literature, Spanish literature and culture.
Associate Professors
Susan Braid, Ph.D. (U. Del.). ESL, Applied linguistics, Second language acquisition, Syntax.
Cynthia Chalupu, Ph.D. (Ohio St. U.). Fin-de-siécle German and Austrian literature, Poetry, Foreign language pedagogy.
Deborah Janson, Ph.D. (UCLA). German, 18th through 21st century German literature.

**Assistant Professors**
Lisa DiBartolomeo, Ph.D. (U.N.C. Chapel Hill). Russian, Russian and Polish language and literature, Slavic folklore, culture, and cinema; science fiction, the Holocaust. Teaching Assistant Professor.
Hannah Lin, Ph.D. (Ohio St. U.). Chinese, Chinese pedagogy and pragmatics. Clinical Assistant Professor.
Jennifer Orlkoff, Ph.D. (Rutgers U.). French, 16th, 18th, and 19th century French literature, Second language acquisition and methodology, Art history, Feminist criticism. Teaching Assistant Professor.
Annastella Vester, Ph.D. (UCLA). Italian, Contemporary Italian literature, 18th and 19th century Italian literature. Teaching Assistant Professor.

**Instructors**
Tracy Dingess, M.A. (WVU). Teaching English to Speakers of Other Languages (TESOL).
Stacy Fint, M.A. (WVU). Teaching English to Speakers of Other Languages (TESOL).
Beatrice Malvisi, M.A. (U. of Pitt.). Italian.

**Forensic and Investigative Science**

**Associate Professors**
Clifton Bishop, Ph.D. (U. Va.). Molecular genetics, Forensic biology.
Jeffery Wells, Ph.D. (U. Ill.). Forensic entomology, DNA identification.

**Assistant Professors**
Suzanne Bell, Ph.D. (N.M. S. U.). Forensic chemistry.

**Clinical Assistant Professor**
Keith Morris, Ph.D. (U. of Port Elizabeth, South Africa). Director, Trace evidence, Crime scene investigation, Forensic chemistry.

**Teaching Assistant Professors**
Patrick Buzzini, Ph.D. (U. Of Lausanne, Switzerland). Microscopy, Trace evidence analysis.
Tina Moroose, M.S. (Marshall U.) Forensic science, DNA analysis.

**Instructors**
Kenneth Bauer, Forensic photography.
Michael Bell, B.S. (W. N. M. U.). Forensic chemistry, Blood spatter analysis.
Russell M. Clawges Jr., J.D. (WVU). Court testimony.
Philip D. Morgan, B.S. (Fairmont St. U.) Fingerprint.

**Geology and Geography**

**Professors**
Timothy Carr, Ph.D. (U. Wisc.). Sedimentary and petroleum geology.
Trevor M. Harris, Ph.D. (U. Ill.). Department chairman. Geographic information science.
Randall W. Jackson, Ph.D. (U. Ill.). Director Regional Research Institute. Economic geography.
Ann M. Oberhauser, Ph.D. (Clark U.). Regional development, Gender studies.
John J. Renton, Ph.D. (WVU). Geochemistry.
Richard A. Smosna, Ph.D. (U. Ill.). Sedimentation and stratigraphy.
Thomas Wilson, Ph.D. (WVU). Geophysics.

**Associate Professors**
Robert Q. Hanham, Ph.D. (Ohio St. U.). Regional development.
Amy E. Hessl, Ph.D. (U. of Az.). Biogeography, Forest ecosystems.
J. Steven Kite, Ph.D. (U. Wisc.). Geomorphology.
Helen M. Lang, Ph.D. (U. Ore.). Associate chair for geography. Mineralogy, Petrology.
Brent McCusker, Ph.D. (Mich. St.). Land use change, Africa.
Jamie Toro, Ph.D. (Stanford). Structural geology and tectonics.
Assistant Professors
Karen Culcasi, Ph.D. (Syracuse U.). Political cartography, Middle East.
Jeremia Njeru, Ph.D. (U. Wisc.). Urban political ecology.
Dorothy Vespe, Ph.D. (Penn. St. U.). Geochemistry, Hydrogeology.

Research Assistant Professor
Rick Landenberger, Ph.D. (WVU). Remote sensing, Geosciences education.

History
Professors
Robert E. Blobaum, Ph.D. (U. Nebr.). Chairperson. Eberly Family Distinguished Professor. Modern Central and Eastern Europe, Poland, Social and political.
William T. Doherty, Ph.D. (U. Mo.). Emretius.
Emory L. Kemp, Ph.D. (U. Ill.). Emeritus.
Ronald L. Lewis, Ph.D. (U. Akron). Stuart and Joyce Robbins Chair. Modern U.S., West Virginia/Appalachia, Labor and social history.
Mary Lou Lustig, Ph.D. (Syracuse U.). Emerita.

Associate Professors
Katherine B. Aaslestad, Ph.D. (U. Ill.). Modern Europe, Germany, Cultural.
Matthew A. Vester, Ph.D. (UCLA). Early modern Europe, Italy.

Assistant Professors
Joseph Hodge, Ph.D. (Queen's U. Canada). Modern Britain, British Empire.
Barbara Rasmussen, Ph.D. (WVU). Public history, Cultural resource management.

Humanities
Associate Professor

International Studies
R. Scott Crichlow, Ph.D. (LSU). Advisor, Associate Professor of Political Science.
Karen Culcasi, Ph.D. (Syracuse, U.). Assistant Professor of Geography.
Christina Fattore, Ph.D. (U. of Fla). Advisor, Assistant Professor of Political Science.
Joe D. Hagan, Ph.D. (U. Ky.). Director and advisor; Barnette Professor of Political Science.
David M. Hauser, Ph.D. (U. Pitt.). Teaching Assistant Professor of Political Science.
Karleen Jones-West, Ph.D. (U. of Iowa). Advisor, Assistant Professor of Political Science.
Kenneth C. Martis, Ph.D. (U. Mich.). Associate chair, Professor of Geography.
William N. Trumbull, Ph.D. (U.N.C.). Associate Professor of Economics.

Mathematics
Professors
John Goldwasser, Ph.D. (U. Wisc.-Madison). Combinatorics, Graph theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Hong-Jian Lai, Ph.D. (Wayne St. U.). Graph theory, Matroid theory.

Dening Li, Ph.D. (Fudan U.). Partial differential equations.

Michael E. Mays, Ph.D. (Penn. St. U.). Number theory.


Sherman D. Riemenschneider, Ph.D. (Syracuse U.). Approximation theory, Wavelet theory.


Duane Smith, Ph.D. (U. of Chicago). Adjunct Professor. Statistical and applied physics, Fluids.

**Political Science**

**Professors**
Hong N. Kim, Ph.D. (Georgetown U.). Comparative politics, East Asia.
Kevin Leyden, Ph.D. (U. Iowa). Director, Institute for Public Affairs. American politics, Congress, Interest groups.
Sophia L. Peterson, Ph.D. (UCLA). *Emerita*.
James B. Whisker, Ph.D. (U. Md.). *Emeritus*.
Jeffrey S. Worsham, Ph.D. (U. Wisc.). Graduate Director. Public administration, Public policy (social welfare regulation).
Rodger D. Yeager, Ph.D. (Syracuse U.). *Emeritus*.

**Associate Professors**
R. Scott Crichtlow, Ph.D. (LSU). International politics, Foreign policy decision making.
Allan S. Hammond, Ph.D. (U. Va.). *Emeritus*.
Christopher L. Plein, Ph.D. (U. Mo.). Adjunct. Public administration.

**Assistant Professors**
Erin C. Cassese (Stony Brook—SUNY). Political psychology, Political behavior, Women and politics, Research methods.
Karleen Jones-West (U. Iowa). Comparative politics (developing areas), Latin American politics.
Jason MacDonald (George Wash.). American politics, Congress, Research methods.
Philip Michelbach (U. of San Diego, Calif.). Political theory.

**Psychology**

**Professors**
Barry A. Edelstein, Ph.D. (U. Memphis). Eberly Family Distinguished Professor of Clinical Psychology. Clinical geropsychology, Anxiety and medical decision making in older adults.
Kevin T. Larkin, Ph.D. (U. of Pitt.). Cardiovascular reactivity and its implication in the development of cardiovascular disorders and anxiety-related problems.
Kennon A. Lattal, Ph.D. (U. Ala.). Centennial Professor. Animal learning and behavior. Issues in the history and philosophy of psychology, Human-pet relations.
Daniel W. McNeil, Ph.D. (U. Ala.). Eberly Family Professor for Outstanding Public Service. Experimental psychopathology, Behavioral dentistry and behavioral medicine, Clinical research training and clinical supervision.


**Associate Professors**


B. Kent Parker, Ph.D. (U. Utah). Associate Professor Emeritus. Stimulus control, memory, and complex sequential learning in animals, Research design.


JoNell Strough, Ph.D. (U. Utah). Collaborative problem solving, Peer relationships, Gender issues.

**Assistant Professors**


Amy Fiske, Ph.D. (U. of So. Calif.). Late life depression and suicide.

Amy Gentzler, Ph.D. (Kent St. U.). Emotion regulation and coping in childhood, Adult attachment.


Elisa Krackow, Ph.D. (Binghampton U. SUNY). Psychology and law, Eye witness testimony, Childhood depression.

Hawley Montgomery-Downs, Ph.D. (U. of Conn.). Sleep and sleep disorders.

**Reignis Studies**

**Associate Professor**


**Social Work**

**Professors**

Marjorie H. Buckholz-Cleveland, Ph.D. (WVU). Emerita.

Karen V. Harper-Dorton, Ph.D. (Ohio St. U.). Division Chair, Grants Development Social administration, Child welfare.

Nancy L. Lohmann, Ph.D. (Brandeis U.). Social administration, Research measurement.

Roger Lohmann, Ph.D. (Brandeis U.). Nonprofit management, Rural social services.


**Associate Professors**

Linda Ferrise, M.S.W. (WVU). Clinical Associate Professor and B.S.W. Program Director. Undergraduate education, Mental health, Adoption.


Elizabeth Randall, Ph.D. (U. Ga.). Clinical social work, Mental health, Coordinator of Southern WV Off-Campus Programs.

Leslie Tower, Ph.D. (Barry U). Domestic violence, Health care administration.


**Assistant Professors**

Patricia Chase, Ed.D (WVU). Clinical Assistant Professor and Program Coordinator, Off-Campus Keyser MSW.

Helen Hartnett, Ph.D. (Ohio St. U.). Social administration, Social welfare policy.

Doris Nicholas, Ed.D. (WVU). Teaching Assistant Professor and Coordinator of Recruitment and Retention. Diversity.

Carrie Rishel, Ph.D. (U. Pitt.). Child mental health.


**Instructors**


Chatman Neely, M.S.W. (WVU). Program Coordinator, Off-Campus Wheeling MSW.

Debra Young, M.S.W. (WVU). Graduate education.

**Senior Lecturer**


**Sociology and Anthropology**

**Professors**


**Associate Professors**


**Assistant Professors**
Corey Colyer, Ph.D. (Syracuse U.). Sociology. People processing systems, Agencies of social control.


**Statistics**

**Professors**
Erdogan Gunel, Ph.D. (SUNY-Buffalo). Bayesian inference, Biostatistics, Categorical data analysis.

**Associate Professors**

**Assistant Professors**

**Visiting Assistant Professors**
Junfeng Liu, Ph.D. (U. of Conn.). Bioinformatics, Biostatistics, Bayesian statistics.

**Research Assistant Professor**
Desta Fekedulegn, Ph.D. (WWU). Ecological modeling, Nonlinear regression analysis, Multivariate modeling, Biostatistics, Biometry, Statistical consulting.

**Adjunct Professor**
Michael E. Andrew, Ph.D. (U. of Wy.). Experimental design and analysis, Epidemiological models, Statistical consulting.

**Research Associates**
Shengqiao Li, M.S. (WWU). Statistical computing, Biostatistics, Data management, Consulting.
Yan Ma, M.S. (WWU). Bioinformatics, Biometric systems, Statistical programming, Consulting.
Jun Tan, M.S. (WWU). Statistical programming, Database programming and development, Java programming, UNIX administration and support.

**Senior Lecturer**

**Women’s Studies**

**Professor**

**Assistant Professor**
J. Kasi Jackson, Ph.D. (U. Ky.). Biology and women’s studies.

**Faculty Associates**
Over 100 faculty members at all ranks from nearly all of the University’s departments, schools, and colleges are affiliated with the Center for Women’s Studies through their teaching, research, and service. Contact the center for a current list.

**Adjunct Faculty**
Cari M. Carpenter
W. Graeme Donovan
Ruth E. Kershner
S. Melissa Latimer
Kathleen E. McNerney
Shelly Barrick Parsons
Cynthia K. Stackpole
Carroll Wetzel Wilkinson
Perley Isaac Reed School of Journalism

**Professors**
George Esper, Honorary Ph.D. (WVU). Ogden Newspapers Visiting Professor in Journalism. Reporting, Writing on deadline, Feature writing, War correspondence.


**Associate Professors**
Joel Beeson, M.S.J. (U. Mo.). Photojournalism, Multi-media, Visual communications.
Christine M. Martin, M.A. (U. Md.). News and feature writing, Journalism history.

**Assistant Professors**
Sara Magee, Ph.D. (Ohio U.) Broadcast reporting and writing, journalism and media ethics.

**Teaching Assistant Professor**

**Visiting Assistant Professors**
Kelley Crowley, Ph.D. (Duquesne U.) Public relations writing and principles of advertising.

**Program Coordinators and Directors**
Rick Bebout, M.S.J. (WVU). IMC technology coordinator, Mass communication, Integrated marketing communications.
Jan Boyles, M.S.J. (WVU). Director of Advising. Orientation, News writing and reporting.
Kimberly Brown, M.A. (WVU). Director of Communications.
Chad Mezera, M.S.J. (WVU). IMC Program Director. Integrated marketing communications.
Shelly Stump, M.S.J. (WVU). IMC Student Advising Director. Integrated marketing communications.

**Professors Emeriti**
Paul A. Atkins, M.A. (U. Va.).
Jeffrey Coben, M.D. (U. Pitt.).
Geri Dino, Ph.D. (Kan. St.).
Edward J. Doyle, M.D. (George Wash.), M.Sc. (So. Calif.).
Alan Ducatman, M.D. (Wayne St.), MSc (City U. of New York). Department Chair.
James Helmkamp, Ph.D. (U. Pitt.).
George Kelley, D.A. (Middle Tenn. St.).
Peter Shaffron, Ed.D. (WVU).
Anoop Shankar, M.D., Ph.D. (Mahatma Gandhi U).

**School of Medicine**

**Community Medicine**

**Professors**
David Brown, Ph.D. (WVU). Emeritus.
Jeffrey Cohen, M.D. (U. Pitt.).
Geri Dino, Ph.D. (Kan. St.).
Edward J. Doyle, M.D. (George Wash.), M.Sc. (So. Calif.).
Alan Ducatman, M.D. (Wayne St.), MSc (City U. of New York). Department Chair.
James Helmkamp, Ph.D. (U. Pitt.).
George Kelley, D.A. (Middle Tenn. St.).

**Associate Professors**
Mary Carter, Ph.D. (Mass.-Boston).
Michael S. Hendryx, Ph.D. (Northwestern).
Gerry Hobbs, Ph.D. (Kan. St.).
Kimberly Horn, Ed.D. (WVU).

School of Dentistry  See the WVU Health Sciences Center Catalog
Christopher Martin, M.D. (Memorial), M.Sc. (Alberta).

Assistant Professors
Rachel Abraham, M.B., B.S. (Bangalore).
Robert Gerbo, M.D. (WVU).
Lan Guo, Ph.D. (WVU).
Chuanfang Jin, M.D. (ShanXi Medical).
Juhua Luo, Ph.D. (Karolinska Institute).
Michael McCawley, Ph.D. (NYU).
Priscah Mujuru, Dr.P.H. (U. Pitt.).
Nancy O’Hara Tompkins, Ph.D. (Md.).
Cecil Pollard, M.A. (WVU).
Kimberly Williams, Ph.D. (McMaster).
Motao Zhu, M.D., Ph.D.(SUNY at Albany).

Instructors
Stephanie J. Frisbee, M.Sc. (Guelph).
Candice Hamilton M.P.H. (WVU).
Toni Morris, M.S. (WVU).

Teaching Assistant Professor
Janet Hunt, MPH (Tenn.).

Department of Human Performance and Applied Exercise Science

Exercise Physiology

Professors

Associate Professors
W. Guyton Hornsby, Ph.D. (LSU). Diabetes and exercise, Strength and conditioning.

Assistant Professors
Dan Bonner, M.S. (WVU). Cardiopulmonary, Adult fitness.
Diana Gilleland, M.S., M.B.A. (WVU, Waynesburg Coll.). Cardiac rehab.
Michael Morissette, Ph.D. (U. of Calif., Harvad Med. Sch.). Cardiac hypertrophy, Myostatin and muscle growth.
Mark Olfort, Ph.D. (Loma Linda U. Calif.). Muscle adaptation, Pulmonary disease, Pulmonary ventilation.
David Williamson, Ph.D. (Ball St. U.). Molecular biology and signaling in muscle, Diabetes.
Hao Yanlei, Ph.D. M.D. (Taishan Medical Coll.). Muscle wasting, IGF1 in muscle.

Adjunct Faculty
Robert W. Brock, Ph.D. (U. of Western Ontario). Diabetes, Renal disease.
Robert G. Cutlip, Ph.D. (WVU). Muscle injury, Aging, Muscle mechanics
William Stauber, Ph.D. (U. of Ia.). Skeletal muscle dysfunction, Muscle injury.
S. Sendhil Velan, Ph.D. Localized magnetic resonance spectroscopy (MRS), Obesity.

Instructor
Beth Nardella, M.A. (WVU). Writing and research methods.

Occupational Therapy

Associate Professors
Anne Cronin, Ph.D., OTR/L, FAOTA (U. Fla.).
Randy P. McCombie, Ph.D., OTR/L (Loyola U. of Chicago). Chair.
Assistant Professors
Diana Davis, M.A., OTR/L (WVU).
Garth Graebe, M.O.T., OTR/L (WVU).
Amanda Kessler Rogers, M.S., OTR/L (WVU).
Stephen D. Wheeler, Ph.D., OTR/L (Va. Comm.).

Medical Technology
Darla Allen, M.S. (IUP). Adjunct assistant professor.
Anna August, B.S. (IUP). Adjunct assistant professor.
Cathy Browning, B.S. (WVU). Adjunct assistant professor.
Joyce Compton, M.S. (WVU). Adjunct assistant professor.
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Barbara J. Gutman, M.Ed. (U. Pitt.). Associate professor emerita.
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Beverly Harki, B.S. (WVU). Adjunct instructor.
Beverly Kirby, M.A. (WVU). Rural health coordinator, Assistant professor.
Martha J. Lake, Ed.D. (WVU). Director of Medical Technology, Professor.
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Lauren Sersen, B.S. (WVU). Instructor.
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School of Nursing
* Regular graduate faculty, * Associate graduate faculty.

Professors
*Laurie Badzek, J.D., M.S.N., R.N. (WVU). Director, Quality of Life Institute.
*June Larrabee, Ph.D., R.N. (U. of Tenn.).
*Nan Leslie, Ph.D., R.N. (U. of Pitt.). Coordinator WHNP track.
E. Jane Martin, Ph.D., R.N., F.A.A.N. (U. of Pitt.).
*Susan H. McCrone, Ph.D., R.N. (U. of Utah). Chair Department of Health Promotion.
*Cynthia Persily, Ph.D., R.N., F.A.A.N. (U. of Penn). Associate Dean for Academic Affairs, Southern Region, and Chair, Charleston.
*Mary Jane Smith, Ph.D., R.N. (NYU). Associate Dean for Graduate Academic Affairs.
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Research Professor
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Associate Professors
*K. Joy Buck, Ph.D., R.N. (U. of Va.).
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*Iliana Chertok, Ph.D., R.N. (U. of Wash.).
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Rhonda Sansone, M.S.N., R.N. (WVU).
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Alicia Renee Dobranski, B.S.N., R.N. (WVU).
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Cynthia A. Neely, M.S., R.N. (WVU).
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David Bougher, B.S.N., R.N., C.H.P.N. (West Liberty St. Coll.).
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Neil R. McLaughlin, B.S., M.E.D. (Penn. St.).

Dean Emerita
School of Pharmacy  See the WVU Health Sciences Center Catalog

**ROTC**

**Aerospace Studies/Air Force ROTC**
Rocco A. Blasi, Maj., Assistant professor.
James E. Briones, SSgt, Information Management NCOIC.
Raymond E. Dinsmore, Colonel, Professor.
John F. Moore, SSgt., Detachment NCOIC.
Joseph E. Robertson, Capt., Assistant professor.
Ronald E. Wilson, Capt., M.S., Assistant professor.

**Military Science/Army ROTC**
Joseph L. Cullinan, Captain, 1st Lieutenant, Assistant Professor of Military Science.
Donald Ferguson, Master Sergeant, Chief Instructor.
James M. Hennigan, Major, Recruiting Officer.
Jonathan B. Judy, 1st Lieutenant, Assistant Professor of Military Science.
Dawn J. McCracken-Bruce, 1st Lieutenant, Assistant Professor of Military Science.
Matthew R. Sampson, Colonel Lieutenant, Professor of Military Science.
Bridget M. Saunders, Assistant Professor of Military Science.
Wayne C. Sodowsky, Major, Assistant Professor of Military Science.