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 2007–2009 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. Copyright © West Virginia University, 2007.
West Virginia University Calendar 2007-08*

First Semester

Wednesday, Thursday, Friday, August 15, 16, 17 ................................. New Student Orientation
Friday, August 17 ................................................................................. General Registration
Monday, August 20 ............................................................................. On Campus First Day of Classes
Monday, August 20 ............................................................................. Late Registration Fee in Effect for All Students
Friday, August 24 ................................................................................ Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit

Monday, September 3 ......................................................................... Labor Day Recess
Thursday, September 13 ................................................................. Rosh Hashanah (Day of Special Concern)
Thursday, September 13 ................................................................. First Day of Ramadan (Day of Special Concern)
Saturday, September 22 .................................................................. Yom Kippur (Day of Special Concern)
Friday, October 5 ................................................................................ Mid-Semester
Tuesday, October 9 ........................................................................... Mid-Semester Reports Due
Saturday, October 13 ...................................................................... Eid-al-Fitr (Day of Special Concern)
Friday, October 26 ........................................................................... Last Day to Drop a Class
Monday, November 12 ................................................................. Birth of Baha’u’llah (Day of Special Concern)
Saturday, November 17 through Sunday, November 25 ....... Thanksgiving Recess
Thursday, December 6 ..................................................................... Last Day to Withdraw from University
Friday, December 7 ........................................................................... Last Day of Classes
Sunday, December 9 ........................................................................ December Convocation
Monday, December 10 through Saturday, December 15 ............. Final Examination Week
Sunday, December 16 ....................................................................... Winter Break Begins
Thursday, December 20 ................................................................. Eid-al-Adha (Day of Special Concern)
Thursday, December 27 ................................................................. Degree Conferring Date

Second Semester

Wednesday, Thursday, Friday, January 9, 10, 11 ..................................... New Student Orientation
Friday, January 11 ............................................................................ General Registration
Monday, January 14 ......................................................................... On Campus First Day of Classes
Monday, January 14 ......................................................................... Late Registration Fee in Effect for All Students
Friday, January 18 ........................................................................... Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
Monday, January 21 ......................................................................... Martin Luther King’s Birthday Recess
Thursday, February 7 ....................................................................... Chinese New Year (Day of Special Concern)
Friday, February 29 ........................................................................... Mid-Semester
Tuesday, March 4 ............................................................................. Mid-Semester Reports Due
Friday, March 21 ........................................................................... Last Day to Drop a Class
Friday, March 21 ........................................................................... Naw-Ruz (Day of Special Concern)
Friday, March 21 ........................................................................... Friday before Easter (Recess)
Saturday, March 22 through Sunday, March 30 ......................... Spring Recess
Sunday, April 20 ............................................................................... Passover (Day of Special Concern)
Monday, April 21 ............................................................................. Feast of Rivdan (Day of Special Concern)
Thursday, May 1 ............................................................................. Last Day to Withdraw from University
Friday, May 2 .................................................................................... Last Day of Classes
Monday, May 5 through Saturday, May 10 ........................................... Final Examination Week
Monday, May 12 .............................................................................. Grade Reports for all Graduates Due in Deans’ Offices
Wednesday, May 14 ................................................................. Deans’ Reports on Graduates Due in ARC
Saturday, May 17 ............................................................................ Alumni Day
Sunday, May 18 ............................................................................. Commencement

Summer 2008

12-Week Summer Session

Monday, May 19 .................................................................................. Registration
Monday, May 19 ............................................................................. On -Campus First Day of Classes
Monday, May 26 ............................................................................... Memorial Day Recess
Friday, June 27 .................................................................................. Final Exam for First Six-Week Session
Friday, July 4 ...................................................................................... Independence Day Recess
Thursday, August 7 .......................................................................... Final Exam for Second Six-Week Session and 12-Week Session
Friday, August 8 ............................................................................. Degree Conferring Date (No Ceremonies)

*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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West Virginia Higher Education Governance*

Joe Manchin III, Governor

West Virginia Higher Education Policy Commission
Michael S. Garrison, Morgantown, Chair
David Tyson, Huntington, Vice Chair
Richard M. Adams, Parkersburg, Secretary
Mary Clare Eros, Martinsburg
Elliot G. Hicks, Charleston
Kay Huffman Goodwin, Charleston, Ex-officio
J. Thomas Jones, Fairmont

Nelson B. Robinson Jr., Charleston, Ex-officio, Chair, WV Council for Community and Technical College Education
Steven L. Paine, Charleston, Ex-officio, Superintendent of Schools

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Robert Wells, Crofton, M.D., Vice Chair
Elizabeth E. (Betty) Chilton, Charleston, Secretary
Curtis H. (Hank) Barnette, Bethlehem, PA
Thomas S. Clark, Bruceton Mills
Linda Dickirson, Ripley
Thomas Dover, Institute
Stephen B. Farmer, Charleston
Russell L. Isaacs, Cottageville
Douglas J. Leech, Morgantown
Carolyn Long, Sutton
John T. (Ted) Mattern, Fairmont
Andrew Payne, Charleston
Parry G. Petroplus, Morgantown
Jason Gross, Morgantown, Student Representative
Michael Lastinger, Morgantown, Faculty Representative
Paul R. Martinelli, Morgantown, Staff Representative

*Corrected as of January 2007.

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
www.wvu.edu/~acadaff/

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

**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
www.wvu.edu/~graduate

**Housing and Residence Life**
Director, Housing and Residence Life
West Virginia University
P.O. Box 6430
Morgantown, WV 26506-6430
Phone: (304) 293-4491 Fax: (304) 293-4825
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
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
www.wvu.edu/~studlife
West Virginia University Administration

Officers of the University
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Associate Provost for Information Technology Sidney C. Morrision
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Associate Vice President for Health Sciences, Rural Health Hilda R. Heady
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Associate Vice President for Health Sciences, Charleston Division L. Clark Hansbarger
Associate Vice President for Health Sciences, Eastern Division C. Mitchell Jacques
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President, West Virginia University Staff Council Terry Nebel
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Special Assistant to the President and Provost Virginia J. Petersen
Executive Assistant to the President Sara Master

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College of Human Resources and Education, Anne Nardi
College of Law, John W. Fisher II
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Honors College, Keith Garbutt
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School of Medicine, John E. Prescott
School of Nursing, Vacant
School of Pharmacy, Patricia A. Chase
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University Honors College, Keith Garbutt
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Center for Black Culture and Research, Todd McFadden, Interim
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Parents Club, Sabrina Cave
Payroll & Tax Services & Interim Director of Treasury Operations, David Kosslow
Physical Plant HSC, Gary B. Miller
Planning Services, Rob Moyer
Printing Services, Geri Ireland
Procurement and Payment Services, Philip Charneskie
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Residential Education, Trish Cendena
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Student Health Services, Jan Palmer
Student Recreation Center, David H. Taylor
Telecommunications and Network Services, Timothy Williams
Television Productions, John E. Duvall
Undergraduate Academic Services Center, Anita Mayer
WVU Press, Patrick W. Conner

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Gerald G. Ashdown, James H. “Buck” and June M. Harless Professor of Law
Robert M. Bastress, John W. Fisher II Professor of Law
Chris Bise, Charles T. Holland Professor of Mining Engineering
Robert E. Blobaum, Eberly Family Distinguished Professor of History
Paula F. Bone, Nathan Haddad Professorship in Business Administration
Melanie Booth-Butterfield, Peggy Rardin McConnell Chair in Speech Communications
Laura Brady, Eberly Distinguished Professor of Outstanding Teaching in Eberly College of Arts and Sciences

James E. Brick, Dr. Edmund B. Flink Chair of Internal Medicine
Jim Brown, K-Mart Corporation Chair of Marketing
Vincent P. Cardi, Bowles, Rice, McDavid, Graff and Love Professor of Law
Linda M. Carson, Ware Distinguished Professor of Physical Education
William H. Carter, Warren Point Chair of Internal Medicine
Nigel N. Clark, George B. Berry Chair of Engineering
Franklin D. Cleckley, Arthur B. Hodges Professor of Law
Patrick Conner, Eberly College Centennial Professor of English
Robert Dailey, Davis-Michael Professor of Animal and Vet Sciences
Julio Davalos, Claude W. Benedum Professor for Outstanding Teaching
M. Yusoff Dawood, Margaret Sanger Chair of Family Planning and Reproductive Physiology
Robert DiClerico, Eberly Family Professor for Outstanding Teaching
Charles R. DiSalvo, Woodrow A. Potesta Professor of Law
Barry A. Edelstein, Eberly Family Distinguished Professor of Clinical Psychology
Boyd Edwards, The Ruth and Russell Bolton WVU Professor of Outstanding Teaching
John Ernest, Eberly Family Distinguished Professor of American Literature
Ali Feliachi, Electric Power Systems Chair Professor in Engineering
Donald C. Fidler, Dana L. and Peggy M. Farnsworth Chair in Educational Psychiatry
Mathis P. Frick, O. F. Gabriele Chair of Radiology
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Keith Garbutt, Eberly Family Professor for Outstanding Teaching
Robert L. Goodman, E. J. Van Liere Professorship
Rakesh K. Gupta, George and Carolyn Berry Professor of Chemical Engineering
Ludwig Gutmann, Hazel Ruby McQuain Chair of Neurological Research
Joseph Hagan, Barnette Professorship of Political Science in the Eberly College of Arts and Sciences

Donald E. Hall, Jackson Family Distinguished Chair of English
Trevor M. Harris, Eberly Family Professor of Geography
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Robert Hoeldtke, Charles E. “Jim” Compton Chair of Nutrition
Thomas Kammer, Eberly College Centennial Professor of Geology
Mark Koepeke, Robert C. Byrd Professorship
Kennon A. Lattal, Eberly College Centennial Professor of Psychology
Richard D. Layne, Grace Kenney Mead Chair of Geriatrics
Ronald L. Lewis, Stuart and Joyce Robbins Chair in History
John Linberg, Jane McDermott Shott Chair in Ophthalmology
Diana Knott Martinelli, Widmeyer Communications Professor of Public Relations
Robert S. Maust, Louis F. Tanner Distinguished Professor of Public Accounting
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Marjorie A. McDiarmid, Steptoe & Johnson Professor of Law and Technology
Gerald McGonigle, Mabel DeVries Tanner Endowed Professorship in Theatre and Dance
James McGraw, Eberly Family Professor of Biology
James A. McLaughlin, Robert L. Shuman Professor of Law
Daniel McNeil, Eberly Family Professor for Outstanding Public Service
George O'Dohery, Woodburn Professor of Eberly College of Arts and Sciences
John Parker, N. Leroy Lapp Professor of Pulmonary and Critical Care Medicine
Julie Patrick, Woodburn Professor of Eberly College of Arts and Sciences
Syd S. Peng, Charles E. Lawall Chair of Energy Resources
William P. Petros, Mylan Chair of Pharmacology
Christopher Plein, Eberly Family Professor for Outstanding Public Service
John Prescott, McGarvey Dean's Endowment
John Renton, Eberly Family Professor for Outstanding Teaching
Richard A. Riley, Louis F. Tanner Distinguished Professorship of Public Accounting
Terry L. Rose, Ernest L. Hogan Chair of Life Insurance
Mohindar Seehra, Eberly Family Professor of Physics
Kenneth Showalter, C. Eugene Bennett Chair of Chemistry
Russell S. Sobel, James Clark Coffman Distinguished Chair in Entrepreneurial Studies
Janice Spleth, Armand E. and Mary Singer Professorship in the Humanities—ECAS
Donley Studlar, Eberly Family Professor of Political Sciences
Stephen Wetmore, Romeo Lim & Maria Lim Chair of Otolaryngology
Brian D. Woerner, Stephanie and Raymond J. Lane Endowed Professor
John Zaniweski, Asphalt Technology Professor of Civil and Environmental Engineering
Forest J. Bowman, Jackson & Kelly Professor of Law, Emeritus
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 21:1. Enrollment in one of the University’s 14 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 2006 enrollment of 27,115 students, with all 55 counties of West Virginia, 50 states, and 86 other countries represented. WVU has produced 25 Rhodes Scholars, 17 Truman Scholars, 29 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, including Stalnaker Hall, have been restored and renovated.

The WVU’s Libraries on site collections include 1.8 million books and 31,735 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 15 thousand electronic journals. Through the Libraries’ membership in the Pennsylvania Academic Library Consortium, WVU students and faculty have access to over 27 million books in 69 member libraries. 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. West Virginia University at Parkersburg is a regional campus. See the WVU main Web page at www.wvu.edu. 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 at Parkersburg, WVU Institute of Technology, and the community and technical colleges at Parkersburg, Potomac State College of WVU, and WVU Tech enroll nearly 31,000 students. WVU has an annual budget in excess of $265 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 14 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 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 Broadcast News, News-Editorial, and Public Relations.
• 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, Ophthamology, 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.
• The School of Physical Education.

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, 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 Administration. 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 classification. 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 forty 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 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: Department of Health and Human Services (Appalachian Laboratory for Occupational Safety and Health), Forest Service (Forestry Sciences Laboratory), National Energy Technology Laboratory of the Department of Energy, 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, G-140 Lyon 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 juniors, seniors, and students age 21 or older, based on availability. Information about University-owned apartments is available by calling (304) 293-5840. Online at housing.wvu.edu.

Office of Information Technology

The Office of Information Technology (OIT) provides support for academic and research computing, 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 best-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, creed, color, sex, sexual orientation, marital status, age, handicap or disability, veteran status, or national origin.

The primary emphasis in admissions is 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 www.wvu.edu/futurestudents, or you may 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 example, pre-computer science in the Eberly College of Arts and Sciences requires two units of algebra, one unit of geometry, and one-half unit of trigonometry for a total of three and one-half units of mathematics. Upper-division admission to the College of Business and Economics, Division of Physical Therapy, and 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 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 measles and rubella immunization. When you graduate, request your counselor to send your final high school transcript verifying graduation to the Office of Admissions and Records.

General Credit Requirements

The following high school credits must be completed for freshman admission:

Required Units

- English (including courses in grammar, composition, and literature)
- Social studies (including U.S. history)
- College preparatory mathematics (algebra I, algebra II, and plane geometry)
- Science (two of the three units must be laboratory science. At least two units from coordinated and thematic science nine and ten, biology, chemistry, physics, and other courses with a strong laboratory science orientation).

It is strongly recommended that you complete a minimum of two consecutive units of a foreign language.

Elective Units

Areas such as computer science, fine arts, and humanities are recommended.

New Admission Requirements for students entering in the Fall Term of 2008

Effective August 2008:

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)
- 3 units of science (ALL units must be laboratory science.)
- 2 units of a foreign language, two units of the same language.
- 1 unit of fine arts
These new requirements are in addition to the GPA and test score criteria needed to review the applications, as noted above.

**Grade Averages and Test Scores**

Your high school grade point average and your comprehensive tests are the major factors used to determine your admission to WVU. We accept either ACT (American College Testing) or SAT (Scholastic Aptitude Test) scores. Beginning with the Fall 2006 class, the written component of the ACT/SAT examinations became an admission requirement.

As a high school graduate from West Virginia, you are eligible for admission if you have a 2.0 grade point average and either a composite ACT score of 19 or a total SAT score of 910. If you are a non-resident, you are eligible for admission if you have a 2.25 overall grade point average and either an ACT composite score of 20 or a total SAT score of 950. 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 the 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 225 (45) 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 would have graduated less 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 a financial aid counselor 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@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 get college-level credit if you submit a copy of your DD214 or a SMART or AARTS transcript to the Transfer Unit of Admissions and Records.

Health Sciences Center

The Admissions and Records Office at the WVU Health Sciences Center is responsible for admission to the dentistry, medicine, nursing, and pharmacy schools. The WVU Health Sciences Center Catalog contains complete information about these programs. If you have additional questions, you may write to: Admissions and Records, 1170 Health Sciences Center North, P.O. Box 9815, Morgantown, WV 26506-9815; phone: (304) 293-3521.

If you are an applicant for freshman admission (except for dental hygiene) you should use the regular application and apply for pre-health sciences programs. Dental hygiene applicants apply directly to HSC. To receive an application, please call or write to the address above.

Transfer Students: Intra-University

If you are a student at WVU at Parkersburg, you may transfer to the Morgantown campus if you meet admission requirements. You must also meet the requirements of the program that you wish to enter. If you are a student at Potomac State College of WVU, WVU Institute of Technology or the community and technical college of WVU Tech, 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 an accredited college or institution. All colleges must be accredited by the Higher Learning Commission for the North Central Association of Colleges and Schools or by other regional accrediting associations accepted by WVU. 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 have differing course requirements and higher grade point average requirements than those stated here.

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, 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 60 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 Web site at 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: 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 (summer sessions excluded) 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 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, page 53.)

**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.

**Measles and Rubella Immunization**

Immunization requirements will change beginning in Fall 2007. Finalized requirements will be posted on Admissions and Records’ Web site at: http://www.arc.wvu.edu/admissions/urequire_main.html.

**Campus Visits and Tours**

Prospective students and their families are encouraged to visit WVU. The WVU Visitors Resource Center is open from 8:00 a.m. until 5:00 p.m. Monday through Friday, and 9:00 a.m. until 4:00 p.m. on Saturday (excluding home football games). Guided tours are offered two times a day, six days a week; phone 1-800-344-WVU1, press 2; e-mail visit.wvu.edu. Transfer and graduate tours are offered Monday at 1:30 pm and Friday at 10:00 am.

The Visitor’s Center is closed on all university holidays.

We also sponsor open houses called Mountaineer Visitation Days. For more information, contact New Student Services at 1-800-344-WVU1, press 4.
Academic Information

Official Program Designations
Degree Program: an area of study approved as such by the institution and WV Higher Education Policy Commission (HEPC) 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 or 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

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<td>Management Information Systems</td>
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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. The form is available from the student’s major advisor or college advisement/records office. 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 if they wish to do so. 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.

Available Minors
Academic Affairs: Leadership Studies.
College of Business and Economics: business administration; entrepreneurship.
College of Creative Arts: art history; dance; music; theatre.
Davis College of Agriculture, Forestry, and Consumer Sciences: agribusiness management; environmental economics; environmental microbiology; environmental protection; family and consumer science; food science and technology; horticulture; pest management; rural community development; soil science; wildlife and fisheries resources; wood industries.
Eberly College of Arts and Sciences: Africana studies; communication studies; economics; English (including general, creative writing, and professional writing); foreign languages (including foreign languages in translation, French, German, linguistics, Italian studies, Russian, Spanish, and teaching English as a second language); geography, geology; history; international studies (including Africa and the Middle East, the Americas, Asia, Europe, and development studies); mathematics; Native American studies; philosophy; physics; political science (including American politics and policy, international and comparative politics, law and legal studies, political theory, and general); sociology and anthropology; statistics; women’s studies.
College of Engineering and Mineral Resources: computer science.
College of Human Resources and Education: speech pathology and audiology.
School of Journalism: advertising.
College of Physical Education: the personal trainer; sport and exercise psychology.
ROTC: aerospace studies (Air Force); military science (Army).

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 Academic Programs, Academic Affairs and Research, 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
As a University, WVU is committed to academic quality and has developed a plan for a comprehensive assessment of student learning outcomes. The plan enables the University to measure the improvement of the quality of academic programs of instruction.

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 Academic Services Center (UASC) advises the majority of freshmen pre-majors, many sophomore pre-majors, and all students in the Multidisciplinary Studies Program; 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 and 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' web sites; and make full use of academic advising and the UASC Web site at http://www.wvu.edu/~advising/.

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. This requirement applies to all students entering WVU in Fall 2002 or thereafter.

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. Total credits vary from 126 to 145. 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.

Second Degrees for WVU Students
To earn a second bachelor's degree, most majors will require a student to complete an additional 30 credit hours (up to 158 total) beyond the first degree. All requirements must be satisfied, departmental and otherwise, for the second degree, as well as all residence requirements. (See Residence Requirements, page 33.)
General Education Curriculum (GEC)

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.

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
1. Communication: students are expected to communicate effectively in English. 6 credits
Requirements
• Successful completion of English 101 and 102 or 103.
Courses fulfilling this objective: ENGL 101, 102, 103.
2. Basic Mathematical Skills and Scientific Inquiry: Students are expected to use quantitative and scientific knowledge effectively. 13–14 credits
Requirements
• Successful completion of one course in mathematics or statistics. This course may also satisfy major course requirements. Courses satisfying this requirement appear below in Group A. 3 credits
• Successful completion of two courses in the natural or physical sciences of which one course has a lab requirement. These courses may also satisfy major course requirements. Courses satisfying this requirement appear below in Group B. 7–8 credits
• Successful completion of either one additional course in mathematics or statistics, one course in the natural or physical sciences, or one course in the areas of natural resources and the environment. This course may also satisfy major course requirements. Courses satisfying this requirement may be selected from Groups A, B, or C. 3 credits
Courses Fulfilling This Objective:
Group A: ECON 225; MATH 121, 124, 126, 128, 129, 150, 155, 156, 218, 231; STAT 111, 211, 215.
Group C: ARE 187; CS 101; ENVM 341; ENVP 155; FOR 140; HN&F 171; MDS 124; PHYS 111; PLSC 105; SOCA 252; WDSC 100; WMAN 150; WDSC 100.
3. The Past and Its Traditions: Students are expected to apply knowledge, methods, and principles of inquiry to understanding the past. 3 credits
Academic Information

Requirement
• Successful completion of one course focused upon the historical, cultural, or intellectual development of society over time or on a particular period critical to that development. This course may also satisfy a major course requirement.

Courses Fulfilling This Objective
ARE 220; ART 101, 105, 106, 109, 110; BIOL 301; CLAS 101, 102, 203, 204, 231, 232; ENGL 225, 236, 251, 261, 262, 263, 272; HIST 101, 102, 104, 105, 106, 108, 124, 152, 153, 179, 180, 201, 203, 204, 205, 207, 217, 241, 255, 256, 257, 259, 264, 271, 272, 277, 281, 284, 316; HUM 107, 109; LARC 212; MATH 218; PHIL 140, 244, 248, 346, 351; POLS 101, 102, 210, 220, 271; RELG 102, 219, 222, 230, 231, 232, 303, 304; SOCA 258; THET 101; USAF 251, 252; WDSC 100. “Majors-Only Courses: FRCH 301; MUSC 270; SPAN 330, 340.”

4. Issues of Contemporary Society: Students are expected to apply knowledge, methods, and principles of inquiry to contemporary problems, ideas, and/or values. 3–4 credits.

Requirement
• Successful completion of one course focused upon methods of critical thought and principles of inquiry concerning contemporary issues, ideas, and/or values as seen from a humanistic or scientific perspective. This course may also satisfy a major course requirement.

Courses Fulfilling This Objective
ADV 201; AGEE 101, 220; ARE 150, 187, 220; ASP 220; BIOL 105, 106, 122; BN 215; CDFS 110; CHIN 101, 102, 203, 204; CHPR 365, 380; COMM 100, 102, 104, 105, 112, 122, 306, 308, 309, 410; COUN 230; CS 101; ECON 201, 202, 225, 301; EDUC 200; ENGL 255, 273; ENVM 341; ENVP 155; FIDP 201; FOR 140; FRCH 100, 101, 102, 200, 203; GEG 106, 107, 108, 110, 111, 205, 207, 209, 210, 240, 241, 243, 244; GEOL 101, 110, 111, 203; GER 100, 101, 102, 200, 203, 204; HIST 108, 209, 218, 221, 242, 261, 281; HN&F 171; ITAL 101, 102, 203, 204; JAPN 101, 102, 203, 204; LING 101; LARC 212; MUSC 170, 173; NAS 200; PHIL 100, 130, 170, 260, 301, 302, 306, 308, 310, 321, 323, 325, 331, 355; PLSC 105; POLS 101, 102, 107, 210, 220, 260, 271, 335, 357, 350, 351, 353, 354, 355, 356, 358, 361, 364, 366, 369; PSYC 101, 231, 233, 234, 241, 251, 281; RELG 105, 210, 222, 250; SEP 271, 272, 373; SOCA 101, 107, 221, 232, 235, 238, 255, 256; SOWK 105, 147; SPA 270; SEP 271, 272, 373; SPED 304; STAT 111, 211; UNIV 101; USAF 131, 132; WMAN 150; WMST 150, 170, 245, 340. “Majors-Only Courses: COMM 314; FRCH 302; MUSC 271; PHIL 496; SOCA 302, 334, 337, 358, 360.”

5. Artistic Expression: Students are expected to apply methods and principles of critical inquiry to the analysis of literary or artistic expression. 3 credits

Requirement
• Successful completion of one course focused upon critical inquiry in art, dance, literature, music, or theatre. This course may also satisfy a major course requirement.

Courses Fulfilling this Objective

6. The Individual in Society: Students are expected to develop an awareness of human experience, including both personal and social dimensions. 4 credits

Requirements
• University 101 or equivalent course. 1 credit
• Successful completion of one additional course addressing at least one of the following: personality motivation, cognition, behavior, social interactions, critical reasoning, ethical judgment, psychological and physiological growth and development, health, and well-being. This course may also satisfy a major course requirement. 3 credits
Courses Fulfilling This Objective
AGEE 220; ARE 150; CDFS 110; CHPR 365, 380; COMM 100, 102, 104, 105, 112, 122, 212, 306, 308, 309, 317, 410; COUN 230; EDUC 200; F&CS 282/580, 380, 385; FLIT 275, 276, 371; HUM 106; LING 101; MDS 120, 212; MILS 101, 102, 201, 202; MDS 120, 212; PHIL 100, 130, 170, 200, 301, 306, 310, 321, 323, 325, 331, 334; PSYC 101, 231, 232, 234, 241, 251, 281; RELG 105, 250; SEP 272; SPA 270; SOCA 221; SPA 270; SPED 304; USAF 131, 132, 251, 252; WMST 340. “Majors-Only Courses: COMM 304; PHIL 496.”

7. American Culture: Students are expected to develop knowledge critical to the understanding of the issues that shape the culture of the United States. 3 credits

Requirement
- Successful completion of one course that explores issues that have shaped the development of society in the United States including but not limited to issues pertaining to age, ethnicity, race, region, religion, or social class. This course may also satisfy a major course requirement.

Courses fulfilling this Objective
ADV 201; BIOL 122; ASP 220; COMM 105, 212, 305, 317; ENGL 154, 241, 242, 251, 254, 255; FLIT 214; GEOG 210, 240; HIST 152, 153, 255, 256, 257, 259, 261, 264; INDS 115; JRL 279; MUSC 175; POLS 335, 337; PSYC 232; SEP 271, 273; SOCA 101, 107, 232, 235, 238; SOWK 105, 147; WMST 150, 170, 225. “Majors-Only Courses: COMM 304; MUSC 475; SOCA 302, 334, 337, 360.”

8. Western Culture: Students are expected to analyze historical, cultural, and/or political issues of a Western nation in an international context. 3 credits

Requirement
- Successful completion of one course that explores historical, cultural, and/or political issues pertaining to a western nation in an international context. This course may also satisfy a major course requirement.

Courses Fulfilling This Objective
BN 215; CLAS 101, 102; COMM 316; ECON 201, 202, 301; FLIT 113, 125, 214, 261, 262, 273, 274; FRCH 100, 101, 102, 200, 203, 204; GER 100, 101, 102, 200, 203, 204; GEOG 102, 108, 207, 241; GER 100, 101, 102, 200, 203, 204; HIST 101, 102, 201, 203, 204, 205, 207, 209, 217, 218, 221, 271, 272, 277, 284; HIST 204, 316, 354; HUM 101, 102; ITAL 101, 102, 203, 204; JRL 101; MUSC 179; NAS 200; POLS 103, 250, 350, 354, 355; RELG 102, 222, 230, 302, 303, 304; RUSS 101, 102, 203, 204; SPAN 100, 101, 102, 200, 203, 204; SOCA 105. “Majors-Only Courses: FRCH 301, 302, 304, 331; GER 331, 332; SPAN 340, 341, 342.”

9. Non-Western Culture: Students are expected to analyze historical, cultural, and/or political issues of a non-Western area or nation. 3 credits

Requirement
- Successful completion of one course that explores historical, cultural, and/or political issues pertaining to a non-Western region or nation. This course may also satisfy a major course requirement.

Courses Fulfilling this Objective
AGEE 101, CHIN 101, 102, 203, 204; COMM 316; ENGL 139, 156, 226; FLIT 215, 266, 271, 272; FRCH 204; GEOG 102, 209, 243, 244; HIST 104, 105, 106, 124, 197, 180, 241, 242; HUM 107; JAPN 101, 102, 203, 204; JRL 101; MUSC 179; NAS 200; POLS 103, 250, 350, 354, 355, 356, 361, 368, 369; RELG 102, 222, 230, 232, 303, 304; RUSS 101, 102, 203, 204; SOCA 105, 255, 256, 257, 258; SPAN 100, 101, 102, 200, 203, 204; THET 170; WMST 215, 245. “Majors-Only Courses: COMM 314; FRCH 322; MUSC 477; SOCA 358; SPAN 330, 331, 332.”

“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 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
Athletic Coaching Education (ACE) 330
Athletic Training (ATTR) 424
Biology (BIOL) 312, 313, 351, 363
Biometric Systems (BIOM) 480
Chemical Engineering (CHE) 451
Chemistry (CHEM) 349
Communication Studies (COMM) 405, 408
Computer Sciences (CS) 480
Computer Engineering (CPE) 480
Counseling (COUN) 230
Dental Hygiene (DTHY) 302
Economics (ECON) 481
Education (EDUC) 100, 200
Electrical Engineering (EE) 480
Entomology (ENTO) 301
Environmental Protection (ENVP) 460
Exercise Physiology (EXPH) 370
Finance (FIN) 305
Forestry (FOR) 420
Geography (GEOG) 302, 412
Geology (GEOG) 311, 341, 400
History (HIST) 494
Industrial Engineering (IENG) 471
Journalism (JRL) 215
Landscape Architecture (LARC) 450
Management (MANG) 422, 450
Marketing (MKTG) 315
Mechanical and Aerospace Engineering (MAE) 471, 475
Medical Technology (MTEC) 381
Mining Engineering (MINE) 484
Multidisciplinary Studies (MDS) 492
Music (MUSC) 271
Nursing (NSG) 333
Occupational Therapy (OTH) 435
Petroleum Engineering (PNGE) 332
Philosophy (PHIL) 310, 321, 323, 494
Physical Therapy (PT) 419
Physical Education/Teaching (PET) 228
Physics (PHYS) 341
Psychology (PSYC) 301, 331, 342, 343, 345, 362, 363, 382, 423, 426, 474, 492, 495, 498
Social Work (SOWK) 494
Sociology and Anthropology (SOCA) 332, 389
Speech Pathology and Audiology (SPA) 362, 460
Sport and Exercise Psychology (SEP) 374
Textiles, Apparel and Merchandising (TA&M) 424
Theatre (THET) 361, 363, 364
Wildlife Management (WMAN) 431
Women’s Studies (WMST) 215, 449, 494
Wood Science (WDSC) 460

As additional courses are approved, The GEC and W course lists on academic advisors will be informed. The Admissions and Records Web site will be updated as courses are approved or deleted. Consult your advisor and the web site to determine which courses are available to you.

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

West Virginia University strongly encourages students to take part in a study abroad program as part of their educational experience. By studying abroad, students gain an understanding of other cultures and regions of the world. It enriches students’ academic background by providing them with new skills and knowledge that will extend beyond the classroom. In addition, study abroad can enhance students’ competitive edge for future employment and admission to graduate school.

The Office International Programs (OIP) advises students on finding programs that meet their academic and personal goals. Students can learn more about the study process by attending a Study Abroad 101 Seminar and individual advising sessions. In addition, OIP assists students during their pre-departure, time abroad, and re-entry needs. OIP has study options with varying lengths of time, ranging from ten days to multiple semesters. Knowledge of a foreign language is not a requirement for most programs; although, students are encouraged to gain some language skills before studying abroad in a foreign speaking country.

**Exchange Programs**

Exchange programs provide WVU students with the opportunity to study abroad by exchanging places with a student from one of our 29 partner institutions for a semester or year. Students pay tuition and fees to WVU. Room and board are paid either to WVU or the exchange institutions, 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, Trinidad and Tobago, Turkey, and Wales.

**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 to exchange places at member universities for a semester or a year. Students pay WVU tuition, fees, room, board, and an ISEP Fee to WVU.

**Faculty-Led Programs**

Faculty-led programs are study abroad programs developed and organized by WVU instructors in conjunction with OIP. These programs are available throughout the school year and past locations have included: Brazil, China, England, France, Germany, Italy, Mexico, and Spain. Contact the OIP or visit the Web site for a current listing of upcoming programs.
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.

Design in Italy/NABA
The Design in Italy programs provide students with the opportunity to study abroad in Milan, Italy at 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.

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, academic year, and summer. 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 can enroll in courses to fulfill requirements for their major, minor, or general elective credits (GEC). Any student is eligible to study abroad as long as they are in good academic and disciplinary standing. WVU requires a 2.5 GPA for studying abroad; however, an appeal can be made to OIP for special exceptions. Financial aid, WVU scholarships, and the WV PROMISE Scholarship may be used to study abroad. For more information, visit www.finaid.wvu.edu.

For more information, please see the OIP Web site at www.wvu.edu/~intlprog or visit the Study Abroad Resource Room in G-13 White Hall.

Residence Requirements
If you decide to transfer to WVU from another institution of higher learning, then you should transfer no later than the start of your 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, you can leave WVU at the end of your third year, and still receive your degree from WVU. You 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 you leave, you must apply to the Academic Standards Committee of your college to request permission to do the work of the fourth year, or a part thereof, at the other institution but still receive the degree from WVU. You will receive your degree when you present the proper records from the other school.

If you are a transfer student who has completed all of your undergraduate work in another school in the West Virginia system of higher education, then you must complete either your 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. If you are a transfer student whose undergraduate work has been completed outside the West Virginia system of higher education, then you must complete a total of 90 hours or at least the last 30 hours of work in residence at WVU. You may be required to earn up to 15 hours in your 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 you begin a course at WVU but fail to complete it due to illness or some other acceptable reason, you 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 done 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.
If you fail a course (receive a final grade of F) taken at WVU, you 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 you are enrolled may authorize an exception to this regulation. If so, then the dean should provide a letter to be placed in your folder authorizing the exception and explaining its basis.

You should be aware of the requirements for residence and your specific degree requirements described in the catalog when transferring credit from other institutions. If you are transferring credit from institutions outside the West Virginia state system of higher education, WVU will accept credit only for courses in which you 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**

If you decide to take a course or courses at another school, you must have written approval from your advisor, your dean, and the director of Admissions and Records or designee. To receive such approval, you must have an overall 2.0 average. All approved college-level work is accepted for transfer from accredited institutions, provided the above requirements have been met and you have an overall GPA of 2.0.

**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 34 shows the subject areas, the necessary test scores, and the WVU equivalent courses.

**College Level Examination Program (CLEP)**

If you apply for admission to WVU and you have gained a significant level of maturity through your life experiences, you may gain college credit for these 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 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 page 36 indicates the areas in which WVU grants credit based on the minimum score required. It should be noted that no student is eligible for CLEP credits after he or she has enrolled at WVU.

If you have at least one year of active military service, you may get college-level credit if you submit a copy of your DD214 or a SMART or AARTS transcript.
<table>
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<th>Examination</th>
<th>Minimum Score</th>
<th>Credit Hours</th>
<th>Course Equivalent</th>
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<td>Latin: Catullus-Horace</td>
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## College Level Examination Program (CLEP)

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<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 (6 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Mathematics</td>
<td>LSP C non-specified credit (4 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Natural Science</td>
<td>LSP C non-specified credit (6 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Social Science and History</td>
<td>LSP B non-specified credit (6 hr.)</td>
<td>50</td>
</tr>
</tbody>
</table>

### Subject Tests

<table>
<thead>
<tr>
<th>Subject Tests</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>44</td>
</tr>
<tr>
<td></td>
<td>FRCH 203 and 204 (6 hr.)</td>
<td>55</td>
</tr>
<tr>
<td>College German (levels 1 and 2)</td>
<td>GER 101 and 102 (6 hr.)</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>GER 203 and 204 (6 hr.)</td>
<td>54</td>
</tr>
<tr>
<td>College Spanish (levels 1 and 2)</td>
<td>SPAN 101 and 102 (6 hr.)</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>SPAN 203 and 204 (6 hr.)</td>
<td>54</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>
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 my 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 students' 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 (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>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 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>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>
<tr>
<td>Philosophy</td>
<td>3–5</td>
<td>PHIL 101</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>6–7</td>
<td>PHIL 101 and 3 hrs. of undesignated Philosophy credit (PHIL 000)</td>
<td>6</td>
</tr>
<tr>
<td>Physics HL</td>
<td>4–5</td>
<td>PHYS 105</td>
<td>4</td>
</tr>
<tr>
<td>Physics HL</td>
<td>6</td>
<td>PHYS 101</td>
<td>4</td>
</tr>
<tr>
<td>Physics HL</td>
<td>7</td>
<td>PHYS 101 and PHYS 102</td>
<td>8</td>
</tr>
<tr>
<td>Psychology SL</td>
<td>5–7</td>
<td>PSYC 101 and PSYC 202</td>
<td>6</td>
</tr>
<tr>
<td>Psychology HL</td>
<td>5–7</td>
<td>PSYC 101 and PSYC 202</td>
<td>6</td>
</tr>
</tbody>
</table>
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).

**Credit by Examination**

If you are currently enrolled, you may receive credit for a course or courses if you can demonstrate 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 you to prepare a self-evaluation statement. The purpose of the statement is to determine the competency you believe you have and the methods by which you achieved it. If you are interested in credit by examination, contact the dean in the college or school offering the course.

**Credit for Correspondence Work**

You may receive credit for correspondence work in non-laboratory courses. You have to meet certain conditions that govern this credit:

- A maximum of 30 hours is acceptable.
- The work must be from accredited institutions.
- The institution must accept the credit toward its own degrees.
- WVU must ordinarily accept that institution’s residence work.

**500-Level Courses**

**WVU student** If you are an undergraduate junior or senior in any class carrying a 500-level course number, you must have at least a 3.0 cumulative grade point average and have written approval on a special form from the instructor and your advisor. This form may also be obtained from the Office of Admissions and Records.

**Non-WVU student** If you are an advanced student and wish to take an off-campus course numbered 500–599, you must submit an undergraduate application for admission and have your official transcripts sent to the Office of Admissions and Records from all of the colleges and universities that you previously attended; the transcript cannot be one sent to you or a facsimile (fax) transcript. You 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 your advisor.

**Graduate Credit via Senior Petition**

You may begin graduate study early through the University’s senior petition policy. A senior petition form may be obtained from your advisor/department. You must have it signed by your advisor and the dean of the college granting your degree and the dean of the college of your 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 the information contained on the form is correct and the student has a cumulative 3.0 grade point average. The University has certain policies for you to enroll in a graduate course for graduate credit. The policies are:
• Senior petition applies only to courses numbered 400–599. You must be within 12 hours of receiving your bachelor’s degree, and your grade point average must be at least 3.0 on a 4.0 scale.
• You can receive only 12 graduate hours through the senior petition.
• You must have the proper signatures on your senior petition by the time you enroll in the petitioned courses.

Return the approved senior petition to the Office of Admissions and Records. It is kept on file so that you receive graduate credit for these courses on your permanent record. The dean of the college or school in which you are taking graduate courses must approve any exceptions to the policy. (Additional information click here.)

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, you must have permission in writing from your 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. You may not apply for credit by exam in a class in which you were a visitor.

Auditors
An auditor may register for courses and must pay full fees. You do not receive credit for the course. If you audit a course, you must let one semester pass before you enroll in the course for credit. You may change your 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.

You 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, consult the Summer Session Schedule of 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 require minimum standards of scholastic quality. Your 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 you 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. Your GPA is based on all work for which you received letter grades other than W, WU, and P. See D/F Repeat Policy, page 42.
You must make certain that you know your grade point standing. Obtain the necessary information concerning your grade point standing from the dean of your college or school. To determine your GPA, use 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.

Your 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 through the last semester, whichever GPA is higher. This calculation includes transferable baccalaureate-level college work attempted at all regionally accredited higher education institutions you have attended. Credit hours earned with a grade of P or S are not considered in the determination. 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 you have attended. Credit hours earned with a grade of P or S are not considered in the determination. Additionally, your GPA on WVU work must meet the requirements stated for the level of honors to be designated. If your 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 your 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 extend for two semesters. Credit is not awarded for a course if you do not attend the whole course. The only exception to this rule occurs if the Committee on Academic Standards decides to grant 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**

Your 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 you and your instructor to evaluate your progress. The University discourages evaluation by final examination only. You are responsible for all materials presented or assigned in scheduled instructional sections. If you do not complete all assigned work, you may earn an incomplete (I) or a failing grade (F).

**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 Schedule of Courses gives the dates and times for final examinations.

If you take a section of a multi-section course, you 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. 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 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 you to take elective courses not related to your degree concentration. Pass/fail grading also facilitates grading in competency-based courses which may be an integral part of your 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. You are limited to a total of 18 hours of pass/fail credit in your collegiate career. Unless otherwise indicated, courses in your 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).

If you elect a course on a pass/fail basis, you are graded as a regular student. 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 your grade point average whether it is a regular grade or a pass/fail grade.

You choose the option of pass/fail grading for a course during the registration period. Once the registration period has ended, you 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 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.

A     B     C     D     F     I     U
4     3     2     1     0     0     0

The grade point average is computed on all work for which you registered, 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. To remove the grade of I, you do not register for the course again; instead, you arrange to submit incomplete or supplemental work to the original instructor of the course. When you receive the grade of I and later remove the incomplete grade, the grade point average is calculated on the basis of the new grade. If you do not remove the I grade within the next semester in which you are enrolled, the grade of I is treated as an F (failure). The Academic Standards Committee of the appropriate college or school may allow you to postpone removal of the I grade if you can justify a delay.
- If you are working toward teacher certification, you are 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 like 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>Geology 101</td>
<td>3</td>
<td>C</td>
<td>2</td>
<td>3 x 2</td>
<td>6</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>Mathematics 126</td>
<td>3</td>
<td>A</td>
<td>4</td>
<td>3 x 4</td>
<td>12</td>
</tr>
<tr>
<td>Political Sci. 101</td>
<td>3</td>
<td>B</td>
<td>3</td>
<td>3 x 3</td>
<td>9</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>
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</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. If you earn a D or F in a course at WVU taken no later than the semester or summer term registration when you reach a cumulative total of 60 hours attempted, including transfer hours, you are eligible to “D/F repeat” that course by meeting with your academic advisor sometime during or prior to the semester in which you are repeating the course and filling out the appropriate forms. The course must be repeated at WVU, Potomac State College of WVU, WVU at Parkersburg, or WVU Institute of Technology. You will have only one opportunity to improve your original grade. The new grade becomes the grade that counts, even if your performance is worse than when you were originally graded.
When you have D/F repeated a course, the following happens:

1. The original grade is disregarded for the purpose of determining your overall GPA, it is marked as excluded (E) in the semester that you originally took the course.
2. The original grade is not deleted from your permanent record.
3. The second grade is entered on your transcript and marked as included (I) in the semester that you repeated the course.
4. You can exercise your right under the D/F repeat policy at any time before you receive your initial baccalaureate. If you get a grade of F in a course for academic dishonesty the grade is not eligible for change under the D/F repeat provisions. Such a failure is indicated on your permanent record by an UF and is calculated in your 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 and are not recorded on the student’s official transcript. These grades are sent first to the Office of Admissions and Records and then to the student, the student’s advisor, and the dean of the college or school in which the student is enrolled.

Final grades are to be entered on the Web within 48 hours after the end of the final examination. The instructor submits grades via the Web. 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 their 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 on the Web. If a grade mailer is to be mailed, the student must request it via the Web 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 spring semester. See 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 six dollars, payable by check, money order, or credit card. You may request, in person, an on-the-spot transcript at a cost of ten dollars. Priority 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.

If you owe money or have some other financial obligation to any unit of the University, you forfeit your right to claim a transcript of your record or your diploma until these financial obligations have been met.

When you apply for a transcript, you must furnish your last date of attendance and your student number. Be sure to indicate the full name under which you were enrolled and date of birth. Requests for transcripts must be made in writing to the Office of Admissions and Records. We cannot accept telephone requests because of the risk to the security of your record.

**Final Grade Appeals**

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. The primary intent of this procedure is to provide a mechanism whereby a student might appeal a failing grade or a grade low enough to cause the student to be eliminated from some program or to 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 15 calendar 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 which states the facts constituting the basis for the appeal within 30 calendar 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 15 calendar 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 15 calendar 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 is in disagreement 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 discipline.

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 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.

Absences

Importance of Class Attendance At WVU, class attendance contributes significantly to academic success. Students who attend classes regularly tend to earn higher grades and have higher passing rates in courses. Excessive absences may jeopardize students’ grades or even their ability to continue their courses.

Attendance Policies Instructors must set attendance policies that are appropriate for the goals and instructional strategies of their courses. Instructors may include attendance records in determining the final course grade. All attendance policies that affect students’ grades must be announced in writing within the first week of class. Moreover, instructors are responsible for keeping accurate enrollment records, and for keeping accurate attendance records when attendance is used in grading. Attendance policies thought to violate the statement on student attendance should be discussed with the instructor, then with the department chair, and finally the college dean, if necessary.

Class Absences Students who are absent from class for any reason are responsible for all missed work and for contacting their instructors promptly, unless the instructors’ policies require otherwise. However, instructors cannot require documentation of student illness from any medical provider as part of an attendance policy, since medical conditions are confidential and frequently not verifiable.

Make-Up Examinations Students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. Such make-up examinations should be of comparable difficulty to the original examination.

Students in courses with regularly scheduled evening examinations shall have the opportunity to make up these examinations if they miss them in order to attend a regularly scheduled class that meets at the same time. Such make-up examinations should be of comparable difficulty to the original examination.

Attendance at a regularly scheduled evening examination will not excuse a student from a regularly scheduled class that meets at the same time as the examination.

Days of Special Concern Instructors are urged not to schedule examinations or field trips on “days of special concern” that are identified in the Schedule of Courses.

Withdrawals From Individual Classes

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 published in the University Schedule of Courses each semester. If you follow all established University procedures and withdraw before the published deadline, you will receive a W on your transcript. Grade point averages are not affected in any way by this mark.

Procedures Before withdrawing from individual classes, consult your advisor to determine if:

• Your course load would be reduced below the minimal requirements set by your college or school. If so, you must get permission from the Committee on Academic Standards of your college or school.
• Your 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 you want to withdraw might be corequisite with other courses you are taking, or prerequisite to other courses required for the next term.

Withdrawal From All Classes for the Term

Deadlines You may withdraw from the University any time BEFORE the last day of a term on which regular classes are scheduled to meet. You will receive grades of W in all your courses for the term. There is a slight possibility that you may receive a grade of WU if a professor petitions the registrar due to some unforgivable situation.

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.
• Note: 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.

Financial Aid Refund and Repayment Policy

Federal regulations require that West Virginia University recalculate eligibility for financial aid 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% of the semester may be required to return a portion of federal financial assistance. The determination of 60% 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% of the term is completed, the percentage earned is considered to be 100%.

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 or bereavement, or military leave, may be granted during the semester. Please refer to the Admissions and Records Web site 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 for consideration. 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 which must be met.
Uniform Academic Suspension Regulations

The student whose cumulative GPA falls below 2.0 is subject to suspension. 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.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. 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 a minimum of one academic semester but will not exceed one calendar year from the date of a student's first suspension. 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 (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 preregistered 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. The college or school petitioned shall 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 shall, upon written application, be reinstated to the University and to the college or school in which the student was previously enrolled, unless the student petitions for admission to another college or school. The college which reinstates the student removes the student's suspension restriction in Admissions and Records and accepts the student.

A suspended student who is reinstated under the provisions above will be placed on academic probation unless the terms of probation agreed to by the student and that college stipulate otherwise. 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.

Procedures for Handling Academic Dishonesty Cases

For procedures regarding final grade appeals, appeal of dismissal from an academic program due to failure to meet academic requirements or performance standards, and the procedure for handling academic dishonesty cases students should consult the current WVU Student Handbook, The Mountie, at http://www.arc.wvu.edu/rightsa.html.
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 $40.

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 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) 40.00
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 30.00
   (Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)
Late Registration Payment 40.00
   (Not charged to students who complete registration during the regular registration days set forth in the University calendar.)
Reinstatement of Student Dropped from the Rolls 40.00
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

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, 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 graduates), 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.
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<td>$16800.00</td>
<td>$16800.00</td>
</tr>
<tr>
<td><strong>Nursing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Freshman</strong></td>
<td>$5356.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
<td>$5356.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
</tr>
<tr>
<td><strong>Junior</strong></td>
<td>$5356.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
</tr>
<tr>
<td><strong>Senior</strong></td>
<td>$5356.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
<td>$16800.00</td>
</tr>
</tbody>
</table>

*Note: tuition and registration costs are per semester; other costs are per year. All fees are subject to change without notice. These fees are accurate as of January 2007. Call the Office of Admissions and Records for current fees.*
## Semester Fees in Colleges and Schools

All fees are subject to change without notice.

These fees are accurate as of March 1, 2007. You are advised to check with the Office of Admissions and Records for the current fee schedule.

### Full-Time Undergraduate†

<table>
<thead>
<tr>
<th>Fee</th>
<th>System Capital Fee</th>
<th>Special Institutional Capitol Fee</th>
<th>Education and General Fee</th>
<th>Special Fee</th>
<th>Technology Fee</th>
<th>Library Fee</th>
<th>TOTAL**</th>
<th>Part-Time†† per credit hr. (including summer term)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>$215.00</td>
<td>$78.00</td>
<td>$1,388.00</td>
<td>$482.00</td>
<td>$40.00</td>
<td>$35.00</td>
<td>$2,238.00</td>
<td>$189.00</td>
</tr>
<tr>
<td>Non-resident</td>
<td>785.00</td>
<td>230.00</td>
<td>5,348.00</td>
<td>482.00</td>
<td>40.00</td>
<td>35.00</td>
<td>6,920.00</td>
<td>579.00</td>
</tr>
</tbody>
</table>

### Notes:
- †A full-time undergraduate student is one who is registered for 12 or more semester hours each semester of the regular academic year or summer session.
- ††A part-time undergraduate student is one who is registered for fewer than 12 semester hours per semester during the regular academic year or summer session.
- *Includes Athletics Fee, $71.00; Student Affairs Fee, $41.00; Daily Athenaeum Fee, $8.00; Health Counseling and Program Services Fee, $131.00; Transportation Fee, $67.00; Radio Station Fee, $5.00; Mountainlair Fee, $69.00; Recreation Fee, $90. These fees are prorated for part-time students.

Please refer to the *WVU Graduate Catalog* or *WVU Health Sciences Catalog* for fee information for the graduate and professional levels.
### Refund Schedules for Official Withdrawal from the University

**Fall and Spring Semesters**

<table>
<thead>
<tr>
<th>Refund Period</th>
<th>Refund Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Week</td>
<td>90%</td>
</tr>
<tr>
<td>2nd Week</td>
<td>90%</td>
</tr>
<tr>
<td>3rd Week</td>
<td>70%</td>
</tr>
<tr>
<td>4th Week</td>
<td>70%</td>
</tr>
<tr>
<td>5th Week</td>
<td>50%</td>
</tr>
<tr>
<td>6th Week</td>
<td>50%</td>
</tr>
<tr>
<td>7th Week</td>
<td>—</td>
</tr>
<tr>
<td>8th Week</td>
<td>—</td>
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<tr>
<td>9th Week</td>
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<td>10th Week</td>
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<td>11th Week</td>
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<tr>
<td>12th Week</td>
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<tr>
<td>13th Week</td>
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<tr>
<td>14th Week</td>
<td>—</td>
</tr>
<tr>
<td>15th Week</td>
<td>—</td>
</tr>
<tr>
<td>16th Week</td>
<td>—</td>
</tr>
</tbody>
</table>

Refunds for summer sessions are published in their respective *Schedule of Courses*.

### Cost of an Academic Year's Work

The Student Financial Aid Office estimates that the total cost of attending WVU for a nine-month academic year is $14,240 for single West Virginia residents living on campus, $14,392 for single West Virginia residents living off campus, and $9,996 for those living at home. The total cost for single non-residents living on campus is $23,604; for single non-residents living off campus, $23,756; and for non-residents living at home, $19,360. 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 twelve 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 militating 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. The president, again, may either uphold the original denial or overturn the decision of the council.

Residency appeals shall end at the institutional level.
College of Business and Economics
R. Stephen Sears, Ph.D., Dean
Cyril M. Logar, D.B.A., Associate Dean for Academic Affairs
C. G. Mancini, M.P.A., Associate Dean for Administrative Services
Susan R. Gustin, M.A., Assistant Dean for Assessment
www.be.wvu.edu

Degrees Offered
Bachelor of Science in Business Administration
Accounting
Finance
Management
Management Information Systems
Marketing
Bachelor of Science
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 International (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 will meet the evolving needs of its constituencies through teaching, research, and service. We will achieve this in a globally focused, student-centered, technology-enabled environment.

Vision
The College of Business and Economics will achieve its mission through the following activities:

• Creating a total academic environment for students to succeed;
• Fostering partnerships and collaborative relationships with public and private sectors to extend the reach and impact of our initiatives;
• Providing leadership to address the evolving needs of our constituents;
• Understanding and applying emerging technologies and their applications to decision-making, educational delivery, curriculum, and research methods;
• Integrating global education into the curriculum, making available international experiences, and fostering an environment that shows our global focus;
• Establishing a culture that encourages personal and professional growth and is attractive to highly valued faculty and staff;
• Conducting and communicating meaningful research to enhance the body of business and economic knowledge and to help decision makers;
• Expanding opportunities to generate external resources to increase self-reliance in supporting the attainment of our mission.
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 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 nationally 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.

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 B&E 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; Finance and Banking Club; Industrial Relations Student Association; MBA Association; MPA Association; MIS Association; Management 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 Web site at: www.bber.wvu.edu for details.

Entrepreneurship Center
Established in 2002, the WVU Entrepreneurship Center is a joint effort of the College of Business and Economics and the Davis College of Agriculture, Forestry, and Consumer Sciences. 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. The Entrepreneurship Center hosts the Statewide Student 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 internship program which provides students with real world experience. In 2005 the center launched a minor in entrepreneurship open to all WVU students. This 15-credit minor allows the student to develop key skills essential for success in entrepreneurship.

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 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 Web site 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) with a C grade or better.
• Three hours of college algebra (MATH 124) 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 129 with a C grade or better and MATH 155, or MATH 155 and MATH 156, can be used to satisfy the mathematics requirements.
• Six hours of composition and rhetoric (ENGL 101 and 102) with a passing grade.
• Four hours of computer applications (CS 101) with a passing grade.

To apply, students must also have at least a 2.5 GPA. 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 cyclic 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 admitted.

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, or marketing should seek admission into a pre-business and economics program through the Undergraduate Academic 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 Requirements</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><strong>Total</strong></td>
<td><strong>21</strong></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 college’s academic standards 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 credit 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 concentra-
tion (excludes required or elective courses in other disciplines in business or
economics).
• At least 30 hours of credit in business and economics courses in residence after
admission to the college.

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

Objective 1: Communication (English 101, English 102); Objective 2: Math and Sci-
ence (Math 124, 126, or 129, 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 semester hours
in 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 hours outside business and economics.
• 5–8 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, man-
agement information systems, or marketing) and in electives in business and
economics with a career emphasis. Degree requirements are presented in chart
form in subsequent sections.

Since students interested in business careers matriculate in the pre-business and
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 (in-
cluding 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.
Degree Requirements

Accounting, Finance, Management, Management Information Systems, and Marketing

Non-B&E Courses (freshman and sophomore years)

Objective 1: Communication

English 101 .................................................................................................... 3

English 102 .................................................................................................... 3

Objective 2: Math and Science

*Math 124, 126, or 129 with a grade of C or better ................................ 3–4

Computer Science 101 .............................................................................. 4

Natural Science ...................................................................................... 3–4

Natural Science (w/ Lab) ............................................................................ 4

Objective 3: The Past & Its Traditions ........................................................................... 3

Objective 4: Contemporary Society ........................................................................... 3

Objective 5: Artistic Expression ........................................................................... 3

Objective 6: The Individual in Society ........................................................................... 3

University 101 ............................................................................................ 1

Objective 7: American Cultural Diversity ....................................................... 3

Objective 8: Western Culture ........................................................................... 3

Objective 9: Non-Western Culture ........................................................................... 3

College Math Requirement: Math 150, 155, or 156 ................................... 3–4

Other Electives—non-business and economics ...................................... 8–11

Psychology 101 and Sociology 101 are required for the business administration degree and meet specific GEC Objectives.

Subtotal .................................................................................................................... 56

Unrestricted Electives Recommended for Juniors and Seniors

(see major program requirements) ................................................................. 5–8

Core courses in business and economics .................................................... 37

Core courses in area of concentration .......................................................... 27–30

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

*The mathematics requirement for all students seeking admission as a business student to the college is the completion of MATH 124 College Algebra-Applications 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 129 and a passing grade in MATH 155 or completion of MATH 155 and 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.

Required College Core Courses

Sophomore year

ACCT 201 and 202 Principles ................................................................. 6

ECON 201 and 202 Principles ................................................................. 6

ECON 225 Elementary Business and Economics Statistics ................ 3

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
**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 126 (or MATH 129) is acceptable in lieu of MATH 124. MATH 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 grade of B or better 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**

<table>
<thead>
<tr>
<th>Non-Business and Non-Economics Courses</th>
<th>Hrs.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1: Communication</td>
<td></td>
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<tr>
<td>ENGL 101</td>
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<tr>
<td>ENGL 102</td>
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<tr>
<td>Objective 2: Math and Science</td>
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</tr>
<tr>
<td>MATH 124, 126, or 129 with a grade of C or better</td>
<td>3–4</td>
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<tr>
<td>Computer Science 101</td>
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<tr>
<td>Natural Science</td>
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<tr>
<td>Natural Science (w/Lab)</td>
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<td>Objective 3: The Past &amp; Its Traditions</td>
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<td>Objective 4: Contemporary Society</td>
<td>3</td>
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<tr>
<td>Economics 201</td>
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<tr>
<td>Objective 5: Artistic Expression</td>
<td>3</td>
<td></td>
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<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>Economics 202</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Objective 9: Non-Western Culture</td>
<td>3</td>
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<tr>
<td>College Math Requirement: Math 150, 155 or 156</td>
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</tr>
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<td>Other Electives (non-Business and Economics)</td>
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<tr>
<td>Unrestricted Electives</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

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

- ACCT 201 and 202 Principles ................................................................. 6
- ECON 201 and 202 Principles................................................................. 3
- ECON 225 *Elementary Business and Economics Statistics* .................. 3
- ECON 301 *Intermediate Microeconomic Theory* .................................. 3
ECON 302 Intermediate Macroeconomic Theory ........................................... 3
ECON 481 American Economic History .................................................... 3 ....... 18

Elective Courses Required in the College
Economics ................................................................................................ 15
Business ..................................................................................................... 9
Economics or Business ............................................................................. 12 ....... 36
Grand Total ................................................................................................. 128

*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 also will 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 activities.
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, 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. The college of Business and Economics offers a master of professional accountancy (MPA) 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. Only 169 programs have 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:
Degree Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Hrs.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Non-B&amp;E Liberal Studies Program Requirements</td>
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<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 493 *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

<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>
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<td>ACCT 312</td>
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<tr>
<td>ACCT 321</td>
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<td>ACCT 322</td>
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<td>BCOR 315</td>
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<td>BCOR 330</td>
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<td>BCOR 360</td>
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<td>BCOR 340</td>
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<td>Outside Elective</td>
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</tr>
<tr>
<td>BCOR 370</td>
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<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></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>
</tr>
<tr>
<td>ACCT 441</td>
<td>3</td>
<td>ACCT 461 or 493</td>
<td>3</td>
</tr>
<tr>
<td>BCOR 320</td>
<td>3</td>
<td>BCOR 460</td>
<td>3</td>
</tr>
<tr>
<td>Unrestricted Electives</td>
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<td>BLAW 420</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>Unrestricted Electives</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

| Total           | **15**| **Total**       | **15**|

Economics

William N. Trumbull, Ph.D., 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 GEC courses 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.

Recommended Sequence of Courses

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tr>
<td>ECON 301</td>
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<td>B&amp;E Elective</td>
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<td>B&amp;E Elective</td>
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<td>Business Elective</td>
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<td>Outside Elective</td>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hrs.</th>
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<tr>
<td>Economics Elective**</td>
<td>3</td>
<td>Economics 481</td>
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<td>Economics Elective</td>
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<td>Economics Elective**</td>
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<td>B&amp;E Elective</td>
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<tr>
<td>Business Elective</td>
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<td>Outside Elective</td>
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<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
<td>15</td>
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</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 should take 21 hours of B&E electives of which no more than 12 hours may be additional economics courses.

Finance

William N. Trumbull, Ph.D., 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.

Recommended Sequence of Courses

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>BCOR 315</td>
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<td>BCOR 340</td>
<td>3</td>
<td>FIN 305</td>
<td>3</td>
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<tr>
<td>BCOR 370</td>
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<td>FIN 310 (spring only)</td>
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<td>FIN 330 (fall only)</td>
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<td>FIN 350</td>
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Total ........................................... 16

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<th>Fourth Semester</th>
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<tr>
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<td>BCOR 460</td>
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</tr>
<tr>
<td>FIN Elective</td>
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<td>FIN 470*</td>
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<tr>
<td>Total</td>
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</table>

* The prerequisite to FIN 470 is completion of 15 hours in finance, including FIN 305 (no exceptions). FIN 470 is to be taken during the final semester of the student’s undergraduate program.

Management

Jack A. Fuller, 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 (e.g., general manager, production manager, sales manager). Students who wish to focus on small business or entrepreneurship take electives that allow them to develop those particular areas of expertise for managerial positions such as small business manager, entrepreneur, or franchise owner. Students who wish to focus on human resource management take electives that allow them to develop expertise for careers such as compensation analyst, recruiter, training specialist, or human resource manager.

Management

Degree Requirements

<table>
<thead>
<tr>
<th>Degree Requirements</th>
<th>Hrs.</th>
<th>Totals</th>
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<tbody>
<tr>
<td>Non-B&amp;E General Education Core 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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<tr>
<td>Required Courses in Option:</td>
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<tr>
<td>ACCT 331 Managerial Accounting</td>
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<tr>
<td>MANG 360 International Business</td>
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<td>MANG 420 Business Information Systems</td>
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<td>MANG 422 The Individual and the Organization</td>
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<td>MANG 430 Personnel Management</td>
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<tr>
<td>MANG 434 Business Research Methods (spring only)</td>
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<td>Business and Economics Electives</td>
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### Recommended Sequence of Courses

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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOR 315</td>
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<td>BCOR 340</td>
<td>3</td>
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<tr>
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</table>

*MANG 434 Business Research Methods is offered in the spring semester only.

**Note:** Students who are interested in human resource management are advised to select business and economics electives such as Compensation, Collective Bargaining and Labor Relations, General Insurance, Employee Benefit Plans, Employment Law and Labor Economics.

**Note:** Students who are interested in entrepreneurship or small business management are advised to select business and economics electives such as Practicum in Small Business, Electronic Commerce, Entrepreneurship, Employment Law, and Management of Small Business.

### Management Information Systems

Jack A. Fuller, 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

<table>
<thead>
<tr>
<th></th>
<th>Hrs.</th>
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<tr>
<td>Non-B&amp;E General Education Core Requirements</td>
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<td>Unrestricted Electives (in or out of College of B&amp;E)</td>
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<td>Required College Core Courses</td>
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<td>MANG 352 Business Applications Programming</td>
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<td>MANG 420 Business Information Systems</td>
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<td>MANG 450 Systems Analysis</td>
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Recommended Sequence of Courses

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<tr>
<th>First Semester</th>
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<table>
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</tbody>
</table>

Marketing

Jack A. Fuller, 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

#### Hrs. Totals

- Non-B&E Liberal Studies Program Requirements .................................................... 56
- Unrestricted Electives (in or out of College of B&E) .................................................. 8
- Required College Core Courses .................................................................................. 37

### Marketing Major Requirements

<table>
<thead>
<tr>
<th>Course</th>
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<td>MKTG 310 <em>Marketing Research</em></td>
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<tr>
<td>MKTG 315 <em>Consumer Behavior</em></td>
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<tr>
<td>MKTG 330 <em>Distribution Channels</em></td>
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<tr>
<td>MKTG 350 <em>Product and Price</em></td>
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<td>MKTG 493G SPTP: <em>Integrated Promotional Strategies</em></td>
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<td>MKTG 493E SPTP: <em>Services Marketing</em></td>
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<td>MKTG 400 <em>Global Marketing</em></td>
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### Marketing Elective

- 3

### Business and Economics Elective

- 3

### Grand Total

- 128

### Recommended Sequence of Courses

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<thead>
<tr>
<th>Semester</th>
<th>First Semester</th>
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<td>MKTG 493E</td>
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</table>

*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

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, Music, and Theatre and Dance. The Divisions of Art, 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 appropriate division chairperson, College of Creative Arts, West Virginia University, P.O. Box 6111, Morgantown, WV 26506-6111, or telephone (304) 293-4841.

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 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, 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

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 Web site: 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>
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<th>Requirement</th>
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<td>Studio (12 credits in drawing; 30 credits in major area)</td>
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<tr>
<td>Art History (200/300 level)</td>
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<tr>
<td>GEC requirement (including ART 105 and ART 106)</td>
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</tr>
<tr>
<td>Open Electives</td>
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<tr>
<td>Total</td>
<td>129–131</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:
ART 111 Drawing ................................................................. 3
ART 112 Drawing ................................................................. 3
ART 199 Art Orientation ......................................................... 1
ART 121 Visual Foundation .................................................... 3
ART 122 Visual Foundation .................................................... 3
ART 105 Survey of Art 1 ........................................................ 3
ART 106 Survey of Art 2 ........................................................ 3
ART 211 Figure Drawing ....................................................... 3
ART 212 Advanced Drawing .................................................... 3
Studio Introductory 200-level courses .................................. 12
Total .................................................................................. 37

**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>
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<tbody>
<tr>
<td>ART 300/400 Studio Major</td>
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</tr>
<tr>
<td>ART 200/300 Art Electives</td>
<td>18</td>
</tr>
<tr>
<td>ART 200/300/400 Art History</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>48</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</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>Total</td>
<td>35–36</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>
<td>3</td>
<td>ART 112 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 105 Art History GEC #3</td>
<td>3</td>
<td>ART 106 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>
<td>1</td>
</tr>
<tr>
<td>GEC Objective</td>
<td>3</td>
<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>Total</td>
<td>16</td>
<td>Total</td>
<td>17</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>GEC Objective</td>
<td>3</td>
<td>ART 200/300 Art History</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective</td>
<td>3</td>
<td>Total</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>Total</td>
<td></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>ART 300 Studio Major</td>
<td>6</td>
<td>ART 300 Studio Major</td>
<td>6</td>
</tr>
<tr>
<td>ART Elective 200/300</td>
<td>3</td>
<td>ART Electives 200/300</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective</td>
<td>3</td>
<td>ART 200/300 Art History (W)</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>15–16</td>
<td><strong>Total</strong></td>
<td>15</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.

### Summary of Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio and Art Electives (includes Art Orientation)</td>
<td>73</td>
</tr>
<tr>
<td>Art History</td>
<td>12</td>
</tr>
<tr>
<td>LSP GEC Objectives</td>
<td>45–46</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>139–140</td>
</tr>
</tbody>
</table>

### 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–adult in West Virginia 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–adult 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>ART 105 GEC #3</td>
<td>3</td>
<td>ART 106 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>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16–17</td>
<td><strong>Total</strong></td>
<td>17</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 212 Drawing</td>
<td>3</td>
<td>ART 211 or 212 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 213/214 Painting</td>
<td>3</td>
<td>ART 230/231 Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART 226/227 Sculpture</td>
<td>3</td>
<td>ART 240/241 Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 GEC #1</td>
<td>3</td>
<td>ART 264 Intro. to Art Education</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective</td>
<td>3</td>
<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</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>ART 200 Studio Major</td>
<td>3</td>
<td>ART 300 Studio Major</td>
<td>6</td>
</tr>
<tr>
<td>ART 223/224 Graphic Design</td>
<td>3</td>
<td>ART 266</td>
<td>4</td>
</tr>
<tr>
<td>ART 265 or 200-level Art History</td>
<td>3–4</td>
<td>GEC Objective</td>
<td>3–4</td>
</tr>
<tr>
<td>EDUC 301 Learning I</td>
<td>3</td>
<td>MATH</td>
<td>3</td>
</tr>
<tr>
<td>PE or DANC 135</td>
<td>2</td>
<td>(art history minor)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14–15</strong></td>
<td><strong>Total</strong></td>
<td><strong>16–17 (20)</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>ART 300 Studio Major</td>
<td>6</td>
<td>ART 300 Studio Major</td>
<td>6</td>
</tr>
<tr>
<td>ART 265 or 200-level Art Hist. (W)</td>
<td>3–4</td>
<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td>SPED 304 or GEC Objective</td>
<td>3</td>
<td>RDNG 422</td>
<td>3</td>
</tr>
<tr>
<td>Creative Arts Elective</td>
<td>3</td>
<td>(art history minor)</td>
<td>3</td>
</tr>
<tr>
<td>(Art History Minor)</td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15–16</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15–16 (19)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Fifth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 200/300 Art History</td>
<td>3</td>
<td>ART 491D</td>
<td>12</td>
</tr>
<tr>
<td>ART 365 Art Education</td>
<td>3</td>
<td>C&amp;I 491</td>
<td>4</td>
</tr>
<tr>
<td>ART 400 Studio Project</td>
<td>6</td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>SPED 360.</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Grand Total</strong></td>
<td><strong>154–159 (165)</strong></td>
</tr>
</tbody>
</table>

Requirements subject to change depending on state requirements.

**Proposed course of study: Bachelor of Art in Visual and Performing Arts—Art History GEC**

### 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 or ART 121</td>
<td>3</td>
<td>ART 112 or ART 122</td>
<td>3</td>
</tr>
<tr>
<td>ART 105 GEC Objective #3</td>
<td>3</td>
<td>ART 106 GEC Objective #5</td>
<td>3</td>
</tr>
<tr>
<td>Cognate Foreign Language</td>
<td>3</td>
<td>Cognate Foreign Language II</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101 GEC Objective #1</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 #2 (plus lab)</td>
<td>4</td>
</tr>
<tr>
<td>UNIV 101 GEC Objective #6</td>
<td>1</td>
<td>ART 199 Orientation</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16–17</strong></td>
<td></td>
<td></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 History</td>
<td>3</td>
<td>Art History</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective #2 - MATH</td>
<td>3</td>
<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td>Classics/Humanities/History</td>
<td>3</td>
<td>Open Elective</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language III</td>
<td>3</td>
<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 GEC Objective #1</td>
<td>3</td>
<td>Foreign Language IV</td>
<td>3</td>
</tr>
<tr>
<td>GEC Objective</td>
<td>3</td>
<td>Literature/Theatre/Music</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>
</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>Art History</td>
<td>3</td>
<td>Art History</td>
<td>3</td>
</tr>
<tr>
<td>Art History</td>
<td>3</td>
<td>GEC Objective</td>
<td>3</td>
</tr>
<tr>
<td>Cognate Philosophy</td>
<td>3</td>
<td>Cognate Literature/Arts</td>
<td>3</td>
</tr>
<tr>
<td>Open Elective</td>
<td>3</td>
<td>Open Elective</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Anthro/History</td>
<td>3</td>
<td>Religion/Phil./Native American</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</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>GEC Elective</td>
<td>3</td>
<td>Art History</td>
<td>3</td>
</tr>
<tr>
<td>Art Seminar</td>
<td>3</td>
<td>Cognate Humanities</td>
<td>3</td>
</tr>
<tr>
<td>Art Theory</td>
<td>3</td>
<td>Open Elective</td>
<td>3</td>
</tr>
<tr>
<td>Art History Senior Seminar</td>
<td>3</td>
<td>Art History Sr. Research Project</td>
<td>3</td>
</tr>
<tr>
<td>Open Elective</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

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

#### Division of Music

David Bess, Ph.D., Chair  
Keith Jackson, D.M.A., Assistant Chair of Graduate Curriculum  
www.wvu.edu/~music

#### 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 44-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 Web site. 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 Cowser 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.

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

Presser Scholarship
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 325 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. Adult community members need not enroll.

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*, and travels extensively. 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 90–110 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* (Percussion 2000), *African Music and Dance Ensemble*, and the *New Music Ensemble*.

**General Requirements for the Bachelor of Music and Bachelor of Visual and Performing 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. In addition to fulfilling the proficiency level requirement in piano indicated in the curriculum, you are required to demonstrate proficiency in keyboard harmony and sightreading 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 Web site 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 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.

**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 492L 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 470–476.

**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 Web site or at the office of the departmental 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 National Teacher Examination 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 with no D or F in Music 384; and c) a GPA of 2.75 in professional education courses and music education methods courses (Music 180, 280, 281, 282, 283, 284, 380, 381, 382; Education 301; SPED 304, 360) 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 Music 281 (minimum of two brass instrument proficiencies) and guitar proficiency.

MUSC 381: MUSC 284 and MUSC 280 (minimum of two woodwind instrument proficiencies) and recorder proficiency or Music 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 Music 281 (minimum of two brass instrument proficiencies) and guitar proficiency.

The PPST requirement can be waived for students who have a composite score of 26 or above on a single administration of the ACT or a score of 1125 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, 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 with no D or F in MUSC 384; and c) a GPA of 2.75 in professional education courses and music education methods courses (MUSC 180, 280, 281, 282, 283, 284, 380, 381, 382; EDUC 301; Special Education 304, 360) with no Ds or Fs in these courses.

To be recommended for graduation, 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Education (13 Credits)</td>
<td></td>
</tr>
<tr>
<td>Education 301</td>
<td>4</td>
</tr>
<tr>
<td>SPED 304, 360</td>
<td>6</td>
</tr>
<tr>
<td>Curriculum and Instruction 491</td>
<td>4</td>
</tr>
<tr>
<td>Studies in Music (74–78 Credits)</td>
<td></td>
</tr>
<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>
</tbody>
</table>
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 grades 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 advisor designates 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>Major Area</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 106–126 Applied Music in a band, orchestra instrument, or guitar</td>
<td>32</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>
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>Hrs.</th>
</tr>
</thead>
<tbody>
<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><strong>Total</strong></td>
<td><strong>46</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 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><strong>Total</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

GEC Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</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><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td>Grand Total</td>
<td><strong>129–131</strong></td>
</tr>
</tbody>
</table>

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

**Major Area**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

**Total** 44

**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>
</tbody>
</table>

**Total** 22

**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>
</tbody>
</table>

**Total** 25

**GEC Requirements**

**Total** 35–37

**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>
</tbody>
</table>

**Total** 11

**Grand Total** 137–139

### 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.
GEC Requirements

| Total | 35–37 |

Electives

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber Music.</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>
</tr>
</tbody>
</table>

Grand Total

| Total             | 130–132 |

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.

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 112 Applied Music (Jazz)</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 118 Applied Music (Piano)</td>
<td>24</td>
</tr>
<tr>
<td>MUSC 285–286 Beginning and Advanced Improvisation</td>
<td>4</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>Chamber Music (must perform jazz piano)</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Music Supportive Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 189 Convocation (six semesters)</td>
</tr>
<tr>
<td>MUSC 177 Introduction to Music Listening</td>
</tr>
<tr>
<td>MUSC 270–271 Music Literature</td>
</tr>
<tr>
<td>MUSC 200 Conducting</td>
</tr>
<tr>
<td>MUSC 161 163, 261, 263 Aural Theory</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 Written Theory</td>
</tr>
<tr>
<td>Theory Electives</td>
</tr>
<tr>
<td>Music History Elective</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

GEC Requirements

| Total | 35–37 |

Electives

| Music Electives (from any area) | 5 |

Grand Total

| Total | 128–130 |

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.

<table>
<thead>
<tr>
<th>REQUIRED COURSES</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>8</td>
</tr>
<tr>
<td>(or 2 hr. in MUSC 183G–183H MUSC 147–149)</td>
<td>32</td>
</tr>
<tr>
<td>MUSC 127 Applied Music (Voice)</td>
<td>32</td>
</tr>
<tr>
<td>MUSC 169 Diction</td>
<td>6</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>Total</td>
<td>62</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

<table>
<thead>
<tr>
<th>Major Area</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

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 189 Convocation (six semesters)</td>
</tr>
<tr>
<td>MUSC 127 Introduction to Music Listening</td>
</tr>
<tr>
<td>MUSC 270–271 Music Literature</td>
</tr>
<tr>
<td>MUSC 200 Conducting</td>
</tr>
<tr>
<td>MUSC 161, 163, 261, 263 Aural Theory</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 Written Theory</td>
</tr>
<tr>
<td>MUSC 130–135 Piano Class</td>
</tr>
<tr>
<td>MUSC 265 and 266 Instrumentation, Orchestration, Arranging</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

GEC Requirements

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

Electives (9 Credits)

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory Electives</td>
</tr>
<tr>
<td>Music History</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
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</table>

Grand Total

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>137–139</strong></td>
</tr>
</tbody>
</table>
**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.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Area</strong></td>
<td></td>
</tr>
<tr>
<td>MUSC 106–127 <em>Applied Music</em></td>
<td>32</td>
</tr>
<tr>
<td>MUSC 285 <em>Intro to Jazz Improvisation</em></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 286 <em>Advanced Jazz Improvisation</em></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 488 <em>Recital</em></td>
<td>2</td>
</tr>
<tr>
<td>Chamber Music (must be in jazz ensembles)</td>
<td>5</td>
</tr>
<tr>
<td>Large Ensemble, or Music 149 <em>Chamber Accompaniment</em></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>46</td>
</tr>
<tr>
<td><strong>Music Supportive Courses</strong></td>
<td></td>
</tr>
<tr>
<td>MUSC 189 <em>Convocation</em> (six semesters)</td>
<td>0</td>
</tr>
<tr>
<td>MUSC 177 <em>Introduction to Music Listening</em></td>
<td>1</td>
</tr>
<tr>
<td>MUSC 270–271 <em>Music Literature</em></td>
<td>6</td>
</tr>
<tr>
<td>MUSC 200 <em>Conducting</em></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 161, 163, 261, 263 <em>Aural Theory</em></td>
<td>8</td>
</tr>
<tr>
<td>MUSC 162, 164, 262, 264 <em>Written Theory</em></td>
<td>8</td>
</tr>
<tr>
<td>MUSC 130–135 <em>Piano Class</em> (not required for keyboard performers)</td>
<td>8</td>
</tr>
<tr>
<td>MUSC 475 <em>History of Jazz</em></td>
<td>3</td>
</tr>
<tr>
<td>MUSC 480 <em>Arranging Small Jazz Ensemble</em></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 481 <em>Arranging Large Jazz Ensemble</em></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 468 <em>Jazz Harmony</em></td>
<td>2</td>
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<td><strong>Total</strong></td>
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<tr>
<td><strong>GEC Requirements</strong></td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>35–37</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
</tr>
</tbody>
</table>

**Grand Total**                                        **142–144**

**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. Another language may be substituted for the indicated French, German, or Italian with the approval of the coordinator of theory/composition. 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.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Area</strong></td>
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</tr>
<tr>
<td>MUSC 160 <em>Introduction to Composition</em></td>
<td>4</td>
</tr>
<tr>
<td>MUSC 265 <em>Instrumentation</em></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 266 <em>Orchestration and Band Arranging</em></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 460 <em>Upper Division Composition</em></td>
<td>8</td>
</tr>
<tr>
<td>MUSC 461–462 <em>Counterpoint</em></td>
<td>4</td>
</tr>
<tr>
<td>MUSC 463 or 464 <em>Analysis</em></td>
<td>4</td>
</tr>
<tr>
<td>MUSC 467 <em>Major Project in Composition</em></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 465–466 <em>Electronic Music</em></td>
<td>4</td>
</tr>
<tr>
<td>MUSC 488 <em>Recital</em></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>32</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
- MUSC 130–135 *Secondary Piano* (if piano is not principal) .................................... 4
- MUSC 183–183H, 100–105 or 140–149
  (at least 4 hrs. in 183, 183A, 100–105) ................................................................. 8
- MUSC 106–127 *Principal Performance Studies* ..................................................... 16
- MUSC 474 *Music of the Twentieth Century* .......................................................... 3

\[ \text{Total} \] .............................................................................................................. 56

GEC Requirements
- \[ \text{Total} \] .............................................................................................................. 35–37

Electives
- Music Electives (from any area) ................................................................................ 2
- Music History Elective ............................................................................................. 3

\[ \text{Total} \] .............................................................................................................. 5

Grand Total ............................................................................................................... 128–130

**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:

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hrs.</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></td>
</tr>
<tr>
<td>Total</td>
<td>.78–80</td>
</tr>
</tbody>
</table>

**Note:** No music courses may fulfill GEC objectives. Foreign language study, consisting of 12 credits in a single language, is in addition to GEC requirements. Every student must satisfy the foreign culture/gender/minority studies requirement.

**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

\[ \text{Total} \] ........................................................................................................... 26–29

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

\[ \text{Total} \] ......................................................................................................... 24

**Grand Total** .................................................................................................. 128–133

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 Music 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 Web site. 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

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

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.

Performances
The division annually produces four or five major productions in its three major performance spaces, the Gladys G. Davis Theatre, Lyell C. Clay Concert Theatre, and the Metropolitan 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 Vivian Michael Davis Laboratory Theatre produces five or six new or experimental works each year in the intimate 75-seat classroom theatre, free of charge.

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.

*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, design and technical theatre, 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.

**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 18 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 112 and THET 361, 362, or 363; (Performance: 3 cr.) THET 102 or 144; (Production: 3-4 cr.) THET 110, 111, 220, or 314; (Electives: 6 cr.) DANC 102, THET 143, 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.
Courses should be taken in the following order: DANC 102, or 121, 160, THET 314, DANC 131 or 132, 142 or 241, DANC 371, THET 242 or DANC 293/493.

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. Students who wish to participate in the Orchesis Dance Ensemble must be officially registered with the division as a dance minor.

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. For the theatre emphasis, the following course structure is required:

- **Foreign language:** 12 credits.
- **Non-theatre electives:** 18 credits required. Students will often take courses that support studies in theatre, or pursue a minor in the subject of their choice.
- **Theatre and dance studies:** 33 credits to include: DANC 102 *Intro. to Dance Tech.*, THET 112 *Orientation to Theatre*; 144 *Acting*; 113 *Stage Management*, 302 *Directing*; 314 *Production and Design*; 361 *Classic Theatre to 1650*; 362 *European and American Theatre to 1850*; 363 *Modern and Contemporary since 1850*, 461 *Creative Dramatics* or 462 *Puppetry*; and 401 *Capstone Experience*.
- **Practicum courses:** 4 credits to include THET 400 and other CREW/CAST assignments.
- **Theatre electives:** 12–13 credits. Recommended theatre electives include: THET 191C *Freshman Directing Workshop* (1 hr.), 491 *Professional Field Experience*, 245 *Advanced Acting Studio*.

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**

*Note:* Due to scheduling and availability, courses may not necessarily be offered in the sequence listed below. However, students are required to follow this course of study as closely as possible in order to complete the program in the outlined four-year period.

**Acting**

*First Year*

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>THET 110 <em>Stagecraft or</em></td>
<td>4</td>
</tr>
<tr>
<td>THET 111 <em>Costuming</em></td>
<td>4</td>
</tr>
<tr>
<td>THET 144 <em>Acting or</em></td>
<td>3</td>
</tr>
<tr>
<td>THET 143 <em>Frshmn. Direct. Wkshp and</em></td>
<td>1</td>
</tr>
<tr>
<td>DANC 102</td>
<td>2</td>
</tr>
<tr>
<td>THET 112 <em>Orientation</em></td>
<td>3</td>
</tr>
<tr>
<td>GEC Requirement</td>
<td>3</td>
</tr>
<tr>
<td>GEC Requirement</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 101</td>
<td>1</td>
</tr>
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<td><strong>Total</strong></td>
<td>17</td>
</tr>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>THET 111 <em>Costuming or</em></td>
<td>4</td>
</tr>
<tr>
<td>THET 110 <em>Stagecraft</em></td>
<td></td>
</tr>
<tr>
<td>THET 143 <em>Frshmn. Direct. Wkshp</em></td>
<td>1</td>
</tr>
<tr>
<td>DANC 102 (with THET 143 only)</td>
<td>2</td>
</tr>
<tr>
<td>THET 144 <em>Acting</em></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>GEC Requirement</td>
<td>4</td>
</tr>
<tr>
<td>GEC Requirement</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
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<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>THET 240</td>
<td>Vocal Techniques or</td>
</tr>
<tr>
<td>THET 242</td>
<td>Movement</td>
</tr>
<tr>
<td>GEC Requirement w/lab</td>
<td></td>
</tr>
<tr>
<td>THET 244 (or free elective)</td>
<td></td>
</tr>
<tr>
<td>THET 200</td>
<td>Sophomore Crew</td>
</tr>
<tr>
<td>GEC Requirement</td>
<td></td>
</tr>
<tr>
<td>ENGL 102</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>THET 240</td>
<td>Vocal Techniques or</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>THET 242</td>
<td>Movement</td>
<td></td>
<td></td>
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<tr>
<td>THET 221</td>
<td>Theatre Makeup</td>
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<tr>
<td>Free Elective (or THET 244)</td>
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<td></td>
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<tr>
<td>THET 200</td>
<td>SPTP: Sophom. Crew</td>
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<td>GEC Requirement</td>
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</tr>
<tr>
<td>Free Elective</td>
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<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>18</strong></td>
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<table>
<thead>
<tr>
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<th>Course Title</th>
<th>First Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>THET 340</td>
<td>Intermediate Vocal Techniques 1</td>
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<td>2</td>
</tr>
<tr>
<td>THET 342</td>
<td>Intermediate Stage Movement 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THET 344</td>
<td>Acting Studio 1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>THET 346</td>
<td>Studio Scene Study 1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>THET 230</td>
<td>Text Analysis</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>THET 302</td>
<td>Directing or Cluster C</td>
<td></td>
<td>3</td>
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<tr>
<td>THET 361</td>
<td>Classic Theatre to 1700</td>
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<tr>
<td>THET 400</td>
<td>Theat. Performance Rehearsal Lab</td>
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<td></td>
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**College of Creative Arts**
**Third Year**

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**Fourth Year**

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**Design and Technology**

**First Year**

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### Bachelor of Arts

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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14–16</strong></td>
<td><strong>Total</strong></td>
<td><strong>14–16</strong></td>
</tr>
</tbody>
</table>
College of Engineering and Mineral Resources
Eugene V. Cilento, Ph.D., Dean
Warren R. Myers, Ph.D., C.I.H., Associate Dean for Academic Affairs
Royce J. Watts, M.S., Associate Dean for Administration
www.cemr.wvu.edu

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 students to study under one of two distinct programs either general engineering or engineering. The objective is to match the student with a first year curriculum tailored to maximize the learning ability of student. Each program prepares freshmen for study in their intended major and is designed to help ensure their success.

Admission is based on a combination of high school grade point average (un-weighted 4.0 scale) and standardized test scores or math placement exam 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>ACT Math</th>
<th>SAT Total</th>
<th>SAT Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering West Virginia</td>
<td>2.00</td>
<td>19</td>
<td>26</td>
<td>910</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Engineering Out-of-State</td>
<td>2.25</td>
<td>20</td>
<td>26</td>
<td>950</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>General Engineering West Virginia</td>
<td>2.00</td>
<td>19</td>
<td>20</td>
<td>910</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>General Engineering Out-of-State</td>
<td>2.25</td>
<td>20</td>
<td>20</td>
<td>950</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>Pre-Biometrics West Virginia</td>
<td>2.00</td>
<td>19</td>
<td>20</td>
<td>910</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>Pre-Biometrics Out-of-State</td>
<td>2.25</td>
<td>20</td>
<td>20</td>
<td>950</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>Pre-Computer Science West Virginia</td>
<td>2.00</td>
<td>19</td>
<td>26</td>
<td>910</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Pre-Computer Science Out-of-State</td>
<td>2.25</td>
<td>20</td>
<td>26</td>
<td>950</td>
<td>600</td>
<td></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 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). To be admitted into the engineering program, a student must satisfy one of the following requirements:
- A math ACT score of at least 26 or a math SAT score of at least 600.
- Qualify to take the calculus course (MATH 155) based on the MATH placement exam.
Engineering Program

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 155 Calculus I</td>
<td>4</td>
<td>MATH 156 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 115 Fundamentals of Chem</td>
<td>4</td>
<td>CHEM 116 Fundamentals of Chem</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 101 Engr. Problem Solving I</td>
<td>2</td>
<td>or GEC Elective</td>
<td>4(3)</td>
</tr>
<tr>
<td>ENGR 199 Orientation to Engr</td>
<td>1</td>
<td>GEC Elective**</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101 Comp. and Rhetoric</td>
<td>3</td>
<td>ENGR 102 Engr. Problem Solving II</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective*</td>
<td>3</td>
<td>PHYS 111 General Physics</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td><strong>Total</strong></td>
<td>17–18</td>
</tr>
</tbody>
</table>

* Mining engineering and dual civil and mining engineering students should take GEOL 101 and 102 in place of one GEC elective. Dual mining engineering and geology students need to take GEOL 101, 102, 103, and 104 in place of both GEC electives. Petroleum and natural gas engineering students should take GEOL 101 in place of one GEC elective.

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

First-Year General Engineering Program Curriculum

Students whose math ACT score is less than 26 or whose math SAT score is less than 600 will be admitted to the general engineering program. The general engineering program 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 required to achieve a grade of C or better in each class to move into Math 155.

General Engineering Program

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 126 and Math 128</td>
<td>6</td>
<td>MATH 155 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>or Math 129</td>
<td>4</td>
<td>CHEM 115 Fundamentals of Chem</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 110 Intro. to Chemistry</td>
<td>2</td>
<td>ENGR 101 Engr. Problem Solving I</td>
<td>2</td>
</tr>
<tr>
<td>ENGR 199 Orientation to Engr</td>
<td>1</td>
<td>GEC Electives**</td>
<td>6</td>
</tr>
<tr>
<td>PHYS 110 Engineering Physics</td>
<td>3</td>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
<tr>
<td>ENGL 101 Comp. and Rhetoric</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16–18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mining engineering students should take GEOL 101 and 102. Petroleum and natural gas engineering students 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 their third semester will be required to transfer 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 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 (shown in the table) are eligible to transfer any time. Others must have completed at least one semester of college work and present evidence that they have met the prerequisites 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 for 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;
- 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 GEC courses.

**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 graduation delays.

**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 GPA (2.25 in mining engineering, and petroleum and natural gas engineering) in all courses completed within the student’s major department.
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 important chemical engineering problems, to solve problems in areas different from their training, and to develop new and valuable ideas.
• Graduates will be able to work in a variety of professional environments, as demonstrated by their abilities to work on teams, to work alone, to provide leadership, to mentor junior co-workers, and to communicate effectively.
• Graduates will possess professional character, as demonstrated by their ethical behavior, their pursuit of professional registration, and their commitment to life-long learning, safety, and their commitment to the environment.

The program outcomes of the chemical engineering curriculum are as follows:
• Graduates will understand and be able to analyze entire chemical processes.
• Graduates will be proficient in the oral and written communication of their work and ideas.
• Graduates will be proficient in the use of computers, 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, gather and analyze data, and 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 questionnaires plus follow-up questionnaires 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 earn a B.S. in chemical engineering, a student must take all of the courses indicated below and must obtain a GPA 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 the GPA. Chemical engineering courses used to satisfy technical or engineering electives are not considered in the GPA.) 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 B.S. degree program which completes degree requirements in four years is as follows.

**Chemical Engineering**

*First year*
Common first year as listed on the *middle* of page 102.

**Second Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 251 <em>Multivariable Calculus</em></td>
<td>4</td>
</tr>
<tr>
<td>CHEM 233 <em>Organic Chem</em></td>
<td>3</td>
</tr>
<tr>
<td>CHEM 235 <em>Organic Chem. Lab.</em></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 112 <em>General Physics</em></td>
<td>4</td>
</tr>
<tr>
<td>CHE 201 <em>Matrl. &amp; Energy Bal.</em></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 <em>Comp. &amp; Rhetoric</em></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 261 <em>Elem. Differential Equat.</em></td>
<td>4</td>
</tr>
<tr>
<td>CHE 202 <em>Matrl. &amp; Energy Bal.</em></td>
<td>3</td>
</tr>
<tr>
<td>CHE 230 <em>Numerical Methods</em></td>
<td>3</td>
</tr>
<tr>
<td>GEC Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

*Third Year*

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 310 <em>Proc. Fluid Mechanics</em></td>
<td>3</td>
</tr>
<tr>
<td>CHE 311 <em>Proc. Heat Trans.</em></td>
<td>3</td>
</tr>
<tr>
<td>CHE 320 <em>Che Thermodynamics</em></td>
<td>3</td>
</tr>
<tr>
<td>Advanced Science Elective</td>
<td>4</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 312 <em>Separation Process</em></td>
<td>4</td>
</tr>
<tr>
<td>CHE 315 <em>ChE Transport Analysis</em></td>
<td>3</td>
</tr>
<tr>
<td>CHE 325 <em>Chem. Reaction Eng.</em></td>
<td>3</td>
</tr>
<tr>
<td>CHE 326 <em>ChE Reaction Phenom.</em></td>
<td>3</td>
</tr>
<tr>
<td>Engineering Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

*Fourth Year*

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 435 <em>Chem. Process Control</em></td>
<td>3</td>
</tr>
<tr>
<td>CHE 450 <em>Unit Operations Lab. 1</em></td>
<td>2</td>
</tr>
<tr>
<td>CHE 455 <em>Chem. Process Design 1</em></td>
<td>4</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 451 <em>Unit Operations Lab. 2</em></td>
<td>2</td>
</tr>
<tr>
<td>CHE 456 <em>Chem. Process Design 2</em></td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>133</td>
</tr>
</tbody>
</table>
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 GPA in required chemical engineering courses is necessary before registering for CHE 310, 311, 320, 435, 450, or 455.

Department of Civil and Environmental Engineering

David Martinelli, Ph.D., Chair
625 Engineering Sciences Building
E-mail: david.martinelli@mail.wvu.edu
www.cee.cemr.wvu.edu

Degree Offered
Bachelor of Science in Civil Engineering

Curriculum in Civil and Environmental 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 GPA 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 GPA, 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 15 to 17 credit hours per semester.

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

### 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.

### Civil and Environmental Engineering

**First year**
Common first year as listed on the middle of page 102.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hrs.</th>
<th>Second Year</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>3</td>
</tr>
<tr>
<td>CE 201 Introduction to CE</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/CHM 116/ BIOL 115</td>
<td>4</td>
<td>Total</td>
<td>17</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>

**Third Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second 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 Microeconomics</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><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

`*` GEC Elective

`†` CE Design Elective

West Virginia University Undergraduate Catalog
Fourth Year
First Semester  Hrs.  
CE Design Elective ..........................3  
CE Open Elective†..........................3  
ENGR/MATH/Science Elective .......... 3  
Science Elective*..........................3  
Total ........................................15

Second Semester  Hrs.  
CE Open Elective†..........................3  
CE 479 Integrated Design ..............3  
GEC Elective*..............................3  
ENGR/MATH/Science/ Elective ........3  
Eng. Elective (outside CEE Dept.) ....3  
Total ........................................15  
Grand Total ................................132

* GEC elective and the science elective may be taken in assignment shown or swapped.  
** 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.

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 158 credit hours. A suggested schedule for the dual curriculum in civil engineering and mining engineering is shown below.

Civil Engineering/Mining Engineering (Dual)

First Year
Common first year as listed on the middle of page 102.

Second Year
Fall Semester  Hrs.  
CE 201 Introduction to CE................1  
MAE 241 Statics..........................3  
MATH 251 Multivariate Calculus ....... 4  
MINE 201 Mine Surveying ..............3  
MINE 205 Undergrd. Mining Syst. ....3  
MINE 261 Engineering CAD ............2  
Total ........................................16

Spring Semester  Hrs.  
ENGL 102 Comp. and Rhetoric ..........3  
MAE 242 Dynamics......................3  
MATH 261 Elem. Differential Equat. ...4  
MINE 206 Surface Mining Systems.....4  
PHYS 112 General Physics .............4  
Total ........................................18

Third Year
Fall Semester  Hrs.  
CE 321 Fluid Mechanics ................3  
GEOL 342 Structural Geology ..........3  
MAE 243 Mechanics of Materials .....3  
MAE 320 Thermodynamics .............3  
STAT 215 Statistics ....................3  
Total ..........................................15

Spring Semester  Hrs.  
CE Core* .....................................4  
CE Core* .....................................4  
MINE 331 Mine Ventilation ............3  
MINE 427 Coal Preparation ............4  
MINE 480 Interdis. Team Project ......1  
Total ..........................................16

Fourth Year
Fall Semester  Hrs.  
CE Core* .....................................4  
CE Core* .....................................4  
MINE 306 Mining Explor. & Eval. ....3  
MINE 382 Mine Power System .........3  
Total ..........................................14

Spring Semester  Hrs.  
CE Seminar ..................................1  
CE Design Elective† .....................3  
CE Design Elective† .....................3  
CE 322 Hydrotechnical Eng. ........3  
GEC Elective .............................3  
IENG 377 Engineering Economy .....3  
Total ..........................................16

College of Engineering and Mineral Resources
### Fifth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
<th>Hrs.</th>
<th>Course</th>
<th>Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEC Elective</td>
<td>Fall Semester</td>
<td>3</td>
<td>CE Technical Elective††</td>
<td>Spring Semester</td>
<td>3</td>
</tr>
<tr>
<td>GEC: ECON 201 Prin. of Microec.</td>
<td></td>
<td></td>
<td>CE 479 Integrated Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MINE 411 Rock Mech. &amp; Grd Cont.</td>
<td></td>
<td>4</td>
<td>GEC Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MINE 471 Mine &amp; Safety Mgmt.</td>
<td></td>
<td>3</td>
<td>GEC Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MINE 483 Mine Dsgn-Exploration.</td>
<td></td>
<td>2</td>
<td>MINE 484 Mine Dsgn-Rpt. (W)</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Total Credit Hours for the BS CE and MINE double major program: 158**

**Notes:**

1. Discipline substitutions are:
   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 Engr/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 at WVU Admissions and Records, http://www.arc.wvu.edu/.

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### 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
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

**Bachelor of Science 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 and 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 enabling 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.
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.

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.

Biometric Systems

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 115 Intro. to Biology*</td>
<td>4</td>
<td>CHEM 115 Fund. of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>MATH 155 Calculus I</td>
<td>4</td>
<td>MATH 156 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 101 Fresh. Design. Engr.</td>
<td>2</td>
<td>CS 110 Intro. to Comp. Science</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 199 Orientation to Engr.</td>
<td>1</td>
<td>PHYS 111 General Physics</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101 Comp. and Rhetoric</td>
<td>3</td>
<td>BIOL 493 DNA to Diversity</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>Total</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>17</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 111 Intro. to Data Structures</td>
<td>4</td>
<td>ENGL 102 Comp. and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>EE 221/222 Intro. Elec. Eng.</td>
<td>4</td>
<td>EE 223/224 Circuits*</td>
<td>4</td>
</tr>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td>MATH 261 Elem. Differential Equat.</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td>STAT 215 Prob. and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>CPE 271/272 Intro. Digital Log</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>18</td>
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</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE 310/311 Microproc. Systems</td>
<td>4</td>
<td>EE 465 Image Processing*</td>
<td>3</td>
</tr>
<tr>
<td>STAT 316 Forensic Statistics*</td>
<td>3</td>
<td>MATH 375 Applied Mod Algebra</td>
<td>3</td>
</tr>
<tr>
<td>EE 327 Signals &amp; Systems 1*</td>
<td>3</td>
<td>Assigned GEC Elective**</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 426 Biometric Systems</td>
<td>3</td>
<td>Emphasis Course 1</td>
<td>3</td>
</tr>
<tr>
<td>CS 350 Computer Syst. Concepts</td>
<td>3</td>
<td>Emphasis Course 2</td>
<td>3</td>
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<tr>
<td>Total</td>
<td>16</td>
<td>Total</td>
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<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOM 480 Senior Design Seminar</td>
<td>2</td>
<td>BIOM 481 Senior Design Project</td>
<td>3</td>
</tr>
<tr>
<td>EE 425 Bioengineering*</td>
<td>3</td>
<td>Emphasis Course 3</td>
<td>3</td>
</tr>
<tr>
<td>CS 465 Computer Security*</td>
<td>3</td>
<td>ECON 202 Macroeconomics</td>
<td>3</td>
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<td>ECON 201 Microeconomics</td>
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<td>GEC Elective</td>
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<td>GEC Elective</td>
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<td>Total</td>
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<tr>
<td>Free Elective</td>
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<td>Total</td>
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</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>Grand Total</td>
<td>133</td>
</tr>
</tbody>
</table>

*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 B.S. degree program which completes degree requirements in four years with a total of 133 hours is as follows.

**Computer Engineering**

**First year**
Common first year as listed on the middle of page 102.

**Second Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 221 Intro. to EE Lec.</td>
<td>3</td>
</tr>
<tr>
<td>EE 222 Intro. to EE Lab</td>
<td>1</td>
</tr>
<tr>
<td>CPE 271 Int. Dig. Logic Dsgn. Lec.</td>
<td>3</td>
</tr>
<tr>
<td>CPE 272 Digital Logic Lab</td>
<td>1</td>
</tr>
<tr>
<td>MATH 251 Multivar. Calculus</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 112 General Physics †</td>
<td>4</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 223 Electrical Circuits Lec.*</td>
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<tr>
<td>EE 224 Electrical Circuits Lab*</td>
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</tr>
<tr>
<td>EE 251 Digital Elect. Lec.*</td>
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<tr>
<td>EE 252 Digital Elect. Lab*</td>
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<tr>
<td>MATH 261 Elem. Diff. Equat.</td>
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<tr>
<td>ENGL 102 Comp. and Rhetoric †</td>
<td>3</td>
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<tr>
<td>CS 110 Intro. to Computer Sci.</td>
<td>4</td>
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<td><strong>Total</strong></td>
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**Third Year**

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<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
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<tr>
<td>EE 327 Signals &amp; Syst. 1 Lec.*</td>
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<tr>
<td>MATH 375 Applied Modern Algebra</td>
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<td>CPE 310 Micropr. Sys. Lec.</td>
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<td>EE 355 Analog Elec. Lec.*</td>
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<td>EE 356 Analog Elec. Lab.*</td>
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<td>CS 111 Intro. Data Structures</td>
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<tr>
<td>CPE 312 Mrcmp Strc/Intrfcng.*</td>
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<tr>
<td>CPE 313 Mrcmp Strc/Int Lab*</td>
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</tr>
<tr>
<td>STAT 215 Intro. Prob. &amp; Stat.</td>
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<tr>
<td>CS 230 Intro. Software Engr.</td>
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<td>ECON 201 Microeconomics</td>
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**Fourth Year**

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<thead>
<tr>
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<tr>
<td>ECON 202 Macroeconomics †</td>
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<td>Tech. Elective</td>
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<td>CPE 480 Senior Dsgn Seminar</td>
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<td>CS 450 Oper. Syst. Struct.</td>
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<tr>
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<tr>
<td>Engr. Science Elect.</td>
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*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).

Nature of the Program

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.

From WVU Admission to Completion of B.S.C.S. Degree

CEMR or ECAS Tracks

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 section Transfer Students on page 119.

1. WVU and College Admission

Admission to the pre-computer science program in the 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 track chosen. CEMR specifically lists additional high school credits and standardized test score requirements beyond WVU admission, while ECAS leaves that judgement to the department. 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 to the Lane Department of Computer Science and Electrical Engineering

At this point, all students have satisfied Section 1. Those pursuing a bachelor’s degree with a track through CEMR automatically become members of the pre-CS program. Those in the ECAS track also become members automatically provided they satisfy the following three requirements:

• 2.5 grade point average in high school.
• Mathematics ACT score of 26, or mathematics SAT score of 600.
• Composite ACT score of 20, or combined SAT score of 950.

ECAS students who do not meet these 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 all courses listed below, and each course (or transfer equivalent) must be completed with a grade of C or better.
   - CS 110
   - CS 111
   - CS 220
   - MATH 155
   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 tracks require 128 hours of coursework. The following shows suggested plans of study for track.

CEMR Degree Plan for B.S.C.S.

First Year
   First Semester  Hrs.  Second 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
   First Semester  Hrs.  Second Semester  Hrs.
   CPE 271/272 Dig Log Dsgn & Lab... 4  CPE 310/311 Microprocessor Sys .... 4
   PHYS 112 Gen. Physics................. 4  ENGL 102 Comp. and Rhetoric........ 3
   CS 210 Adv. Data and File Struct.... 4  CS 221 Analysis of Algorithms...... 3
   CS 220 Discrete Mathematics......... 3  CS 230 Intro. Software Engr......... 4
   GEC Elective............................ 3  GEC Elective............................ 3
   Total ..................................... 18  Total .................................... 17
### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310 Prin. Program Language</td>
<td>3</td>
<td>CS Technical Elective</td>
<td>3</td>
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<tr>
<td>CS 350 Comp. Sys. Concepts</td>
<td>3</td>
<td>CS Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>STAT 215 Intro. Prob. &amp; Stat</td>
<td>3</td>
<td>Elective</td>
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<td><strong>Total</strong></td>
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### Fourth Year

<table>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>CS 480 Sr. Design Seminar</td>
<td>2</td>
<td>CS 481 Sr. Design Project</td>
<td>3</td>
</tr>
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<td>CS Technical Elective</td>
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<td>CS Technical Elective</td>
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<td>Elective</td>
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<td><strong>Grand Total</strong></td>
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</table>

*128 hours are required.

**The electives need only to total 19 hours, not 21.

### ECAS Degree Plan for B.S.C.S.

#### First Year

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<tr>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>4</td>
<td>CS 111 Intro. Data Structures</td>
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</tr>
<tr>
<td>MATH 155 Calculus I</td>
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<td>MATH 156 Calculus II</td>
<td>4</td>
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<td>UNIV 101</td>
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<td>ENGL 101 Comp. and Rhetoric</td>
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<td>GEC Elective</td>
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#### Second Year

<table>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>CS 210 Data and File Structure</td>
<td>4</td>
<td>CPE 271/272 Dig Logic Dsgn &amp; Lab</td>
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<tr>
<td>CS 220 Discreet Mathematics</td>
<td>3</td>
<td>CS 221 Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Comp. and Rhetoric</td>
<td>3</td>
<td>CS 230 Intro. Software Engr.</td>
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<td>GEC Lab Science Elective</td>
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<td><strong>Total</strong></td>
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#### Third Year

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<th>Second Semester</th>
<th>Hrs.</th>
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<tr>
<td>CS 310 Prin. Program Language</td>
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<td>CS 350 Comp. Sys. Concepts</td>
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<td>STAT 215 Intro. Prob. &amp; Stat</td>
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<td>CS Technical Elective</td>
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<td>GEC Elective</td>
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<td><strong>Total</strong></td>
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#### Fourth Year

<table>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>CS or CPE 480 Sr. Design Seminar</td>
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<td>CS or CPE 481 Sr. Design Project</td>
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<td>CS Technical Elective</td>
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<td><strong>Grand Total</strong></td>
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</table>

*128 hours are required.

**The electives need only to total 29 hours, not 30
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 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, or 350.
• Pick two from: CS 221, 230, 310, or 330.
• 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.

This objective is met 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 material through oral presentation and interaction 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 EE 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 B.S. degree program which completes degree requirements in four years or a total of 131 hours is as follows

**Electrical Engineering**

*First year*
Common first year as listed on the middle of page 102.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tr>
<td>EE 221 Intro. to EE Lec.</td>
<td>3</td>
<td>EE 223 Electrical Circuits Lec.*</td>
<td>3</td>
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<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>CPE 271 Intro. Dig. Log. Design</td>
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<td>MATH 261 Elem. Differential Equat.</td>
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<td>CPE 272 Dig. Log. Lab</td>
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<td>MATH 251 Multivariable Calculus</td>
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<td>ENGL 102 Comp. and Rhetoric</td>
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<td>PHYS 112 General Physics</td>
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<td>EE 251 Digital Elect.*</td>
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### Third Year

**First Semester**

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<tbody>
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<td>EE 336</td>
<td>Elec. Energy Conv. Lab</td>
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<tr>
<td>EE 345</td>
<td>Engr. Electromagnetics*</td>
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<td>EE 327</td>
<td>Signals &amp; Systems 1*</td>
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<td>EE 355</td>
<td>Analog Elec.*</td>
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<td>EE 356</td>
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<td>STAT 215</td>
<td>Intro. Prob. &amp; Stat</td>
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**Second Semester**

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<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 329</td>
<td>Signals and Systems 2*</td>
<td>3</td>
</tr>
<tr>
<td>EE 328</td>
<td>Signals and Systems Lab*</td>
<td>1</td>
</tr>
<tr>
<td>CPE 310</td>
<td>Microprocessors Sys.</td>
<td>3</td>
</tr>
<tr>
<td>CPE 311</td>
<td>Microprocessors Lab.</td>
<td>1</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>Math/Science Elective</td>
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<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

*Offered once per year in semester shown

### Fourth Year

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 202</td>
<td>Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EE 480</td>
<td>Senior Design Seminar</td>
<td>2</td>
</tr>
<tr>
<td>GEC Elective</td>
<td></td>
<td>3</td>
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<td><strong>Total</strong></td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 481</td>
<td>Senior Design Project</td>
<td>3</td>
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<tr>
<td>GEC Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Free Elective</td>
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</table>

**Grand Total**

```
132
```

---

**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 158 credits and meet all the requirements for both degrees. A suggested schedule for the dual curriculum in electrical engineering and computer engineering is shown below.

**Electrical/Computer Engineering (Dual Major)**

**First Year**

Common first year as listed on the middle of page 102.

**Second Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 221</td>
<td>Intro. to EE Lec.</td>
<td>3</td>
</tr>
<tr>
<td>EE 222</td>
<td>Intro. to EE Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 112</td>
<td>General Physics</td>
<td>4</td>
</tr>
<tr>
<td>CPE 271</td>
<td>Intro. Dig. Log Design</td>
<td>3</td>
</tr>
<tr>
<td>CPE 272</td>
<td>Dig. Log Lab</td>
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</tr>
<tr>
<td>MATH 251</td>
<td>Multivariable Calculus</td>
<td>4</td>
</tr>
<tr>
<td>Free Elective ***</td>
<td></td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 223</td>
<td>Electrical Circuits Lec.*</td>
<td>3</td>
</tr>
<tr>
<td>EE 224</td>
<td>Electrical Circuits Lab*</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 102</td>
<td>Comp. and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>EE 252</td>
<td>Digital Elect. Lab*</td>
<td>1</td>
</tr>
<tr>
<td>EE 251</td>
<td>Digital Elect.*</td>
<td>3</td>
</tr>
<tr>
<td>CS 110</td>
<td>Intro. Comp Science**</td>
<td>4</td>
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**Third Year**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 327</td>
<td>Signals &amp; Systems 1*</td>
<td>3</td>
</tr>
<tr>
<td>CPE 310</td>
<td>Microprocessor Sys.</td>
<td>3</td>
</tr>
<tr>
<td>CPE 311</td>
<td>Microprocessor Lab.</td>
<td>1</td>
</tr>
<tr>
<td>MATH 375</td>
<td>Applied Mod Algebra</td>
<td>3</td>
</tr>
<tr>
<td>STAT 215</td>
<td>Intro. Prob. &amp; Stat.</td>
<td>3</td>
</tr>
<tr>
<td>CS 111</td>
<td>Intro. Data Structures**</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE 312</td>
<td>Micro. Struc. &amp; Interface*</td>
<td>3</td>
</tr>
<tr>
<td>CPE 313</td>
<td>Micro. Struc. &amp; Inter. Lab*</td>
<td>1</td>
</tr>
<tr>
<td>CS 350</td>
<td>Computer Sys. Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CS 230</td>
<td>Intro. Software Engr.</td>
<td>4</td>
</tr>
<tr>
<td>EE 329</td>
<td>Signals &amp; Systems II*</td>
<td>3</td>
</tr>
<tr>
<td>EE 328</td>
<td>Signals &amp; Systems Lab*</td>
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</tr>
<tr>
<td>ECON 201</td>
<td>Microeconomics</td>
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<tr>
<td><strong>Total</strong></td>
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### Fourth Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 355</td>
<td>Analog Elect. Lec.*</td>
<td></td>
<td>3</td>
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<tr>
<td>EE 356</td>
<td>Analog Elect. Lab*</td>
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<tr>
<td>EE 335</td>
<td>Elect. Enrgy Conv. &amp; Sys.*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EE 336</td>
<td>Elec. Enrgy Conv. Lab*</td>
<td></td>
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<tr>
<td>EE 345</td>
<td>Engr. Electromagnetics*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CS 450</td>
<td>Operating Sys. Structures</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CPE 480</td>
<td>Senior Design Seminar</td>
<td></td>
<td>2</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE 480</td>
<td>Senior Design Seminar</td>
<td></td>
<td>2</td>
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<tr>
<td>Technical Elective*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Engr. Science Elective</td>
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<td></td>
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<tr>
<td>GEC Elective</td>
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</tr>
<tr>
<td>ECON 202</td>
<td>Macroeconomics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
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**Total** ................................................ 17

### Fifth Year

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE 481</td>
<td>Senior Design Project</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Free Elective***</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Free Elective***</td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** ................................................ 18

Grand Total ............................................ 159

*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
www.imse.cemr.wvu.edu

**Degree Offered**

Bachelor of Science in Industrial Engineering

### Curriculum in 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 110 to 120 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 life-long 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 B.S. 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 GPA, 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 B.S. degree program that completes 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 102.

<table>
<thead>
<tr>
<th></th>
<th>First Semester</th>
<th>Hrs.</th>
<th></th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>MATH 251</td>
<td></td>
<td>4</td>
<td><strong>Multivariable Calculus</strong></td>
<td></td>
<td>4</td>
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<tr>
<td>CHEM 116 or PHYS 112</td>
<td></td>
<td>4</td>
<td></td>
<td><strong>Elem. Differential Equat.</strong></td>
<td></td>
</tr>
<tr>
<td>MAE 241</td>
<td></td>
<td>3</td>
<td><strong>Statics</strong></td>
<td><strong>Mech. of Materials</strong></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102</td>
<td></td>
<td>3</td>
<td><strong>Comp. &amp; Rhetoric</strong></td>
<td><strong>Engineering Statistics</strong></td>
<td>3</td>
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<tr>
<td>IENG 200</td>
<td></td>
<td>1</td>
<td><strong>Fundamentals of IE</strong></td>
<td><strong>Engineering Economy</strong></td>
<td>3</td>
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<td>IENG 220</td>
<td></td>
<td>3</td>
<td><strong>Re-Engineering</strong></td>
<td><strong>GEC Elective</strong></td>
<td>3</td>
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<td>16</td>
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<td><strong>Total</strong></td>
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<thead>
<tr>
<th></th>
<th>First Semester</th>
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<th></th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>ENGL 102</td>
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<td>3</td>
<td><strong>Comp. &amp; Rhetoric</strong></td>
<td><strong>Engineering Economy</strong></td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
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<td>3</td>
<td><strong>Microeconomics</strong></td>
<td><strong>Macroeconomics</strong></td>
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<tr>
<td>IENG 304</td>
<td></td>
<td>3</td>
<td><strong>Mechanical and Costing</strong></td>
<td><strong>Mfg. Processes</strong></td>
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<tr>
<td>IENG 350</td>
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<td>3</td>
<td><strong>Intro. Oper. Research</strong></td>
<td><strong>Ind. Quality Cont.</strong></td>
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<td>IENG 360</td>
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<td>3</td>
<td><strong>Human Factors Eng.</strong></td>
<td><strong>Computer Appl. IE</strong></td>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th></th>
<th>First Semester</th>
<th>Hrs.</th>
<th></th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 221</td>
<td></td>
<td>3</td>
<td><strong>Basic Electric Eng.</strong></td>
<td><strong>Design Prod. Systems</strong></td>
<td>3</td>
</tr>
<tr>
<td>EE 222</td>
<td></td>
<td>1</td>
<td><strong>Basic Electric Lab</strong></td>
<td><strong>Technical Elective</strong></td>
<td>3</td>
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<tr>
<td>IENG 455</td>
<td></td>
<td>3</td>
<td><strong>Simula. Digital Meth.</strong></td>
<td><strong>Plant Layout/Mat’l Hand</strong></td>
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<tr>
<td>IENG 471</td>
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<td><strong>Design Productive Sys.</strong></td>
<td><strong>Technical Elective</strong></td>
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<tr>
<td>GEC Elective</td>
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<td>3</td>
<td></td>
<td><strong>MAE 242 Dynamics</strong></td>
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<td></td>
<td><strong>MAE 320 Thermodynamics</strong></td>
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</tr>
</tbody>
</table>

|                |                | 15   |                | **MAE 331 Fluid Mechanics** | |
| **Grand Total**|                |      |                | **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

**Curriculum in 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 GPA 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 GPA.

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 B.S.A.E. degree program which completes degree requirements in four years is as follows.
Aerospace Engineering
First Year
Common first year as listed on the middle of page 102.

Second Year
First Semester           Hrs.  
MAE 215 Intro. to Aerospace Engr. ... 3  
MAE 241 Statics          ... 3  
MATH 251 Multivariable Calculus ... 4  
PHYS 112 General Physics ... 4  
ENGL 102 Comp. and Rhetoric ... 3  
Total                          ... 17

Second Semester           Hrs.  
MAE 242 Dynamics          ... 3  
MAE 243 Mechanics of Materials ... 3  
MAE 244 Dynam. and Strength Lab ... 1  
MATH 261 Elem. Differential Equat ... 4  
GEC Elective             ... 3  
Total                          ... 14

Third Year
First Semester           Hrs.  
MAE 320 Thermodynamics ... 3  
MAE 335 Incompressible Aerodyn ... 3  
MAE 343 Intermed. Mech. of Matls. ... 3  
EE 221 Basic Electrical Engr. ... 3  
EE 222 Basic Electrical Lab ... 1  
GEC Elective             ... 3  
Total                          ... 16

Second Semester           Hrs.  
MAE 316 Analy. of Engr. Sys ... 3  
MAE 336 Compress. Aerodyna ... 3  
MAE 345 Aerospace Structures ... 3  
MAE 365 Flight Dynamics ... 3  
GEC Elective             ... 3  
Total                          ... 15

Fourth Year
First Semester           Hrs.  
MAE 426 Flight Vehcl Propulsion ... 3  
MAE 434 Experimental Aerodyna ... 2  
MAE 456 CAD/Finite Elem. Anal. ... 3  
MAE 475 Flight Vehicle Design ... 3  
Technical Elective          ... 3  
Total                          ... 14

Second Semester           Hrs.  
MAE 423 Heat Transfer ... 3  
MAE 460 Automatic Controls ... 3  
MAE 476 Space Flight and Sys ... 3  
Technical Elective          ... 3  
GEC Elective             ... 3  
Total                          ... 15

Grand Total                     125

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.

Curriculum in 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 B.S.M.E. degree program which completes degree requirements in four years is as follows.

**Mechanical Engineering**

*First Year*

Common first year as listed on the middle of page 102.

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
<td></td>
</tr>
<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>MATH 261 Elem. Differential Equat.</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td>MAE 211 Mechtron. or GEC Elect.</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Comp. and Rhetoric</td>
<td>3</td>
<td></td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
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### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>First Semester Hrs.</th>
<th>Second Semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 331 Fluid Mechanics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 343 Intermed. Mech. Math.</td>
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<td></td>
</tr>
<tr>
<td>EE 221 Basic Electrical Engr.</td>
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<tr>
<td>EE 222 Basic Electrical Lab</td>
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</tr>
<tr>
<td>GEC Elective</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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### Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>First Semester Hrs.</th>
<th>Second Semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 454 Machine Design &amp; Mfg.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 456 CAD/Finite Elem. Ana. or</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 423 Heat Transfer</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 471 Prin. of Engr. Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GEC Elective</td>
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<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</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 12 hours of General Education Curriculum (GEC) courses must be selected to meet the University and college GEC requirements.

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**Curriculum for a 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.

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**Curriculum for a Dual Major in Aerospace and Mechanical Engineering**

**First Year**

Common first year as listed on the middle of page 102.

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>First Semester Hrs.</th>
<th>Second Semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 215 Intro. Aerospace Engr.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 251 Multivariable Calculus</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHYS 112 General Physics</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ENGL 102 Comp. and Rhetoric</td>
<td>3</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>First Semester Hrs.</th>
<th>Second Semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 211 Mechatronics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 242 Dynamics</td>
<td>3</td>
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<td>MATH 243 Mechanics of Materials</td>
<td>3</td>
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<td>MATH 261 Elem. Differential Equat.</td>
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### Third Year

<table>
<thead>
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<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 244 Dynam. &amp; Strength Lab</td>
<td>1</td>
<td>MAE 316 Analy. of Eng. Sys.</td>
<td>3</td>
</tr>
<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>MAE 336 Compressible Aero.</td>
<td>3</td>
</tr>
<tr>
<td>MAE 335 Incompressible Aerodyn.</td>
<td>3</td>
<td>MAE 342 Dynamics of Machines</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>EE 221 Basic Electrical Engr.</td>
<td>3</td>
<td>MAE 365 Flight Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>EE 222 Basic Electrical Lab.</td>
<td>1</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

**Total** | 18

### Fourth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 322 Thermal &amp; Fluids Lab</td>
<td>1</td>
<td>MAE 411 Advanced Mechatronics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 426 Flight Vehicle 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 475 Flight Vehicle Design</td>
<td>3</td>
<td>IENG 302 Mfg. Process</td>
<td>2</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td>IENG 303 Mfg. Process Lab</td>
<td>1</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

### Fifth Year

| First Semester | Hrs. | | | |
|----------------|------|-----------------|------|
| MAE 454 Machine Design & Mfg. | 3 | | |
| MAE 471 Prin. of Engr. Design | 3 | | |
| Technical Elective | 3 | | |
| Technical Elective | 2 | | |
| GEC Elective | 3 | | |
| **Total** | 14 | | |
| **Grand Total** | 155 | | |

**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**
Syd S. Peng, Ph.D., Chair
365-A Mineral and Energy Resources Building
E-mail: syd.peng@mail.wvu.edu
www.mine.cemr.wvu.edu

**Degree Offered**

*Bachelor of Science in Mining Engineering*

**Curriculum in Mining Engineering**

Mining engineering deals with discovering, extracting, beneficiating, 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. Graduates will meet the following objectives:
• Graduates are well prepared in 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. The student will be assigned an advisor who will assist in this phase of the program.

Local coal fields, mines, and preparation plants provide extensive opportunity for research, instruction, and field work in a real-world situation.

**Mining Engineering (B.S.M.E.)**

First Year
Common first year as listed on the middle of page 102.

Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINE 205 Undergrd. Mining Syst.</td>
<td>3</td>
<td>MINE 206 Surf. 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><strong>Total</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td><strong>Total</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>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 Composition &amp; Rhetoric</td>
<td>3</td>
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<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>MAE 243 Mech. of Materials</td>
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<tr>
<td>GEC Elective</td>
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<td>GEC Elective</td>
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<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
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</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>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 Mgmt</td>
<td>3</td>
<td>Mine 480 Multidis. Team Project</td>
<td>1</td>
</tr>
<tr>
<td>Technical Elective*</td>
<td>3</td>
<td>Eng/Sci Technical Elective**</td>
<td>3</td>
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<td>GEC Elective</td>
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<td>GEC Elective</td>
<td>6</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>134</strong></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 Web 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 158 credit hours. A suggested schedule for the dual curriculum in mining engineering and civil engineering is shown below.

### Mining Engineering/Civil Engineering (Dual)

#### First Year

Common first year as listed on the middle of page 102.

#### 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 Composition &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 Undgrd. Mining Sys</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><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td></td>
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</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*</td>
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<tr>
<td>GEOL 342 Structural Geology</td>
<td>3</td>
<td>CE Core*</td>
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<tr>
<td>MAE 243 Mechanics of Materials</td>
<td>3</td>
<td>MINE 331 Mine Ventilation</td>
<td>3</td>
</tr>
<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>MINE 427 Coal Preparation</td>
<td>4</td>
</tr>
<tr>
<td>STAT 215 Statistics</td>
<td>3</td>
<td>MINE 480 Interdis. Team Project</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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#### Fourth Year

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<th>Fall Semester</th>
<th>Hrs.</th>
<th>Spring Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE Core*</td>
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<tr>
<td>CE Core*</td>
<td>4</td>
<td>CE Design Elective</td>
<td>3</td>
</tr>
<tr>
<td>MINE 306 Mining Explor. &amp; Eval.</td>
<td>3</td>
<td>CE Design Elective*</td>
<td>3</td>
</tr>
<tr>
<td>MINE 382 Mine Power System</td>
<td>3</td>
<td>CE 322 Hydrotechnical Engr</td>
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<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>GEC Elective</strong></td>
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<tr>
<td></td>
<td></td>
<td>IENG 377 Engineering Economy</td>
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<td><strong>Total</strong></td>
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### 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>CE Technical Elective**</td>
<td>3</td>
</tr>
<tr>
<td>GEC: ECON 201 Prin. of Microecon</td>
<td>3</td>
<td>CE 479 Integrated Design</td>
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</tr>
<tr>
<td>MINE 411 Rock Mech. &amp; Grnd Cont</td>
<td>4</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>MINE 471 Mine and Safety Mgmt</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>MINE 483 Mine Design-Explor.</td>
<td>2</td>
<td>MINE 484 Mine Design-Report (W)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
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</table>

Total Credit Hours for the BS CE & MINE Double Major Program: **158**

**Notes:**
1. Discipline substitutions are:
   q. MINE requirement for AGRN 455 is fulfilled through CE 322 and CE 351.
   r. MINE 382 fulfills requirement of CE engineering elective outside CE.
   s. MINE 461 is fulfilled by CE 322.
   t. MINE 484 fulfills CE requirement of ENGL 305.
   u. CE 321 fulfills MINE requirement for MAE 331.
   v. MINE technical elective and MINE Eng/Sci technical elective requirements are fulfilled by any two of the following: CE 332, 347, or 361.
   w. GEOL 342 fulfills requirement of CE basic science elective.

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.

3. CE technical 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.

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 suggested schedule for the dual degree curriculum in mining engineering and geology is shown below.

### Mining Engineering/Geology (Dual)

#### First Year

Common first year as listed on the middle of page 102.

#### 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>GEOL 284 Mineralogy</td>
<td>3</td>
<td>CHEM 116 Fndmts. of Chemistry</td>
<td>4</td>
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<tr>
<td>MAE 241 Statics</td>
<td>3</td>
<td>GEOL 285 Introductory Petrology</td>
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<tr>
<td>MATH 251 Multivariate Calculus</td>
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<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>
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<td>PHYS 112 General Physics</td>
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</tr>
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<td>MINE 261 Engineering CAD</td>
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#### Third Year

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<tr>
<td>GEOL 341 Structural Geology</td>
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<td>GEC Elective</td>
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<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>GEOL 311 Stratigraphy and Sedimentation (W)</td>
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<td>MATH 261 Elem. Differential Equat.</td>
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<td>MAE 331 Mechanics of Materials</td>
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<td>MINE 461 App Minr Comp. Mthds</td>
<td>3</td>
<td>MINE 331 Mine Ventilation</td>
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<td>STAT 211 Elem. Statistical Inference</td>
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### Summer Hrs.
- GEOL 404 Geology Field Camp***... 6

**Total Hrs** ................................. 6

### Fourth Year

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<td>GEC Elective</td>
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<td>GEC Elective</td>
<td>3</td>
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<tr>
<td>GEC Elective (ECON 201 Principle of Microeconomics)</td>
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<td>GEOL 321 Geomorphology</td>
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<td>GEOL 331 Paleontology, or</td>
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<td>GEOL Elective*</td>
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<td>GEOL 454 Environmental and Exploration Geophysics</td>
<td>3</td>
<td>MAE 242 Dynamics</td>
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<td>MINE 483 Mine Design-Exploration</td>
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<td><strong>Total</strong></td>
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### Fifth Year

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<tr>
<td>GEOL 495 or MINE 495 Independent Study**</td>
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<td>MINE 411 Rock Mechanics &amp; Ground Control</td>
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<tr>
<td>MINE 471 Mine and Safety Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>MINE 484 Mine Design-Report (W)</td>
<td>4</td>
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<tr>
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</table>

**Total Credit Hours for the Geology and Mining Engineering Dual Major:** 158

**Notes:**
1. Discipline substitutions are:
   - w. GEOL 311 and other GEOL Upper-division elective course fulfill the requirements for MinE technical elective and Eng/Sci technical elective.
   - x. GEOL requirement for GEOL 341 is substituted for MINE requirement for GEOL 342.
   - y. MinE requirement of ARGN 455 is fulfilled through GEOL 321
   - z. MinE 205 and MinE 206 fulfill the requirement of GEOL upper-division technical electives.
   - aa. MinE 484W and GEOL 311W fulfill the requirement of writing course.
   - bb. 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.
3. **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.
4. ***GEOL 404 Summer Field Camp is GEOL capstone course.
5. For the most recent list of approved courses in the GEC program, visit the GEC Web site at WVU Admissions and Records.
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 in 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 to:

• 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 life-long 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, and 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 a bachelor's degree.

**Petroleum and Natural Gas Engineering**

*First Year*

Common first year as listed on the middle of page 102.

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 112 General Physics</td>
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<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>
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<td>MAE 241 Statics</td>
<td>3</td>
<td>MAE 331 Fluid Mech.</td>
<td>3</td>
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<tr>
<td>ENGL 102 Composition &amp; Rhetoric</td>
<td>3</td>
<td>IENG 213 or STAT 215</td>
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<tr>
<td>GEOL 101 Physical Geology</td>
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<td>PNGE 200 Intro. Pet. Engr.</td>
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<td><strong>Total</strong></td>
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<table>
<thead>
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<th>Second Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNGE 332 Pet. Prop./Phase Beh.</td>
<td>3</td>
<td>PNGE 310 Drilling Engr.</td>
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</tr>
<tr>
<td>EE 221 Basic Elec. Engr.</td>
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<td>PNGE 312 Drilling Fl. Lab</td>
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<tr>
<td>ECON 201 Microeconomics</td>
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<td>PNGE 333 Elem. Res. Engr.</td>
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<tr>
<td>GEOL 342 Struct. Geol.</td>
<td>3</td>
<td>GEOL Elective*</td>
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<tr>
<td>MAE 320 Thermodynamics</td>
<td>3</td>
<td>ECON 202 Macroeconomics</td>
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<td><strong>Total</strong></td>
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<table>
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<th>Fourth Year</th>
<th>Hrs.</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>PNGE 420 Production Engr.</td>
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<td>PNGE 400 Pet. Engr. Ethics</td>
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<td>PNGE 434 App. Res. Engr.</td>
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<td>PNGE 441 O&amp;G Property Eval.</td>
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<td>PNGE 432 Pet. Res. Lab</td>
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<td>PNGE 450 Formation Eval.</td>
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<td>PNGE 480 Pet. Engr. Design</td>
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<td>PNGE 470 Nat. Gas. Engr.</td>
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<td>Technical Elective**</td>
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<td><strong>Total</strong></td>
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<td><strong>Grand Total</strong></td>
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*Recommended geology electives are GEOL 365, 454, or 472.

**Recommended technical electives are PNGE 460, 471, 501, or 532.
Degrees Offered
- 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 on 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
Carol A. Markstrom, Ph.D., Program Coordinator, 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 which 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 who are 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 who are interested in working with older children, adolescents, and/or families in youth development or family development programs in community agencies.

Birth Through Pre-Kindergarten Early Childhood Education
The birth through pre-kindergarten early childhood education option focuses on the social, emotional, intellectual, and physical development of 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 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.

In collaboration with Fairmont State University, the program is also offering an early childhood director's credential. This credential is offered in three tiers, with the three-star credential requiring the greatest effort and the one-star credential requiring the least.

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, or sociology and anthropology.
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 2.0, he or she may be subject to academic probation and potentially suspension. A minimum cumulative GPA of 2.0 is required in order to graduate from WVU.

Career Opportunities

Graduates of CDFS may work with children in a variety of settings, such as public school early childhood education programs, Head Start, and child care centers. 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

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<td>Remaining Obj.</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Third year</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>EDUC 200 (Spr)</td>
<td>3</td>
</tr>
<tr>
<td>F&amp;CS 381</td>
<td>3</td>
</tr>
<tr>
<td>CDFS 212, 316, 491</td>
<td>9</td>
</tr>
<tr>
<td>C&amp;I 410, 411</td>
<td>6</td>
</tr>
<tr>
<td>PET 384 or 400</td>
<td>2</td>
</tr>
<tr>
<td>BUSA</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
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<td><strong>Total</strong></td>
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<table>
<thead>
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<tr>
<td>F&amp;CS 460</td>
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<td>CDFS 412, 413, 415</td>
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<td>F&amp;CS 491</td>
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<tr>
<td>CHPR 172</td>
<td>2</td>
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<tr>
<td>C&amp;I 414 (Spr) or THET 461</td>
<td>3</td>
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<tr>
<td>BUSA</td>
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<tr>
<td>SPA 278 or SPED 350</td>
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<tr>
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<td><strong>Total</strong></td>
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College of Human Resources and Education

137
### Suggested Curricula—Family and Youth Studies

<table>
<thead>
<tr>
<th>First year</th>
<th>Hrs.</th>
<th>Second year</th>
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<tr>
<td>ENGL 101</td>
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<td>ENGL 102</td>
<td>3</td>
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<tr>
<td>MATH 121 or 124</td>
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<td>SOCA 105</td>
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<td>F&amp;CS 101 (F)</td>
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<td>PSYC 101</td>
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<td>SOCA 101</td>
<td>3</td>
<td>CS 101</td>
<td>4</td>
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<td>COMM 100 &amp; 102</td>
<td>3</td>
<td>HN&amp;F 171</td>
<td>3</td>
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<tr>
<td>BIOL 101 &amp; 103</td>
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<td>F&amp;CS 265</td>
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<td>CDFS 110, 112</td>
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<td>CDFS 210, 211</td>
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Courses to fill

Obj. 3, 5, 8, or 9 .......... 9

Total ........................................ 32

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<thead>
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<th>Fourth year</th>
<th>Hrs.</th>
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<td>EDUC 200</td>
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<td>F&amp;CS 460</td>
<td>3</td>
</tr>
<tr>
<td>F&amp;CS 381</td>
<td>3</td>
<td>CDFS 412, 413, 415</td>
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<tr>
<td>CDFS 212</td>
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<td>CDFS 320 (F), 321 (Spr)</td>
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<tr>
<td>CHPR 172</td>
<td>2</td>
<td>F&amp;CS 491 (F)</td>
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<td>SOWK 105</td>
<td>3</td>
<td>F&amp;CS 491 (Spr)</td>
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<td>MDS 122 (F)</td>
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<td>Electives</td>
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<tr>
<td>MDS 212</td>
<td>3</td>
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<td>SOCA 221 (Spr)</td>
<td>3</td>
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<tr>
<td>Electives</td>
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<td></td>
</tr>
</tbody>
</table>

Total ........................................ 31

Key: F = Fall      Spr = Spring      Obj. = GEC Objective

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### Speech Pathology and Audiology

Lynn R. Cartwright, Ed.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.
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.

3. Overall GPA of 2.75.

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 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.
Teacher Education
Judy A. Abbott, Ph. D., Assistant Dean for Teacher Education
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
Students preparing to teach secondary education may select approved combinations of specializations in the following subjects and grade levels.

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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<tbody>
<tr>
<td>One</td>
<td>EDUC 100 <em>Education Colloquium</em></td>
<td>Volunteering requirement**</td>
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<td>EDUC 100* Volunteering Req. **</td>
<td>EDUC 200 <em>Professional Inquiry</em></td>
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<tr>
<td>Two</td>
<td>EDUC 301 <em>Learning I</em></td>
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<tr>
<td></td>
<td>EDUC 311 <em>Practicum I</em></td>
<td>EDUC 312 <em>Practicum II</em></td>
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<tr>
<td>Four</td>
<td>EDUC 400 <em>Instruct. Design &amp; Eval.</em></td>
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<tr>
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<td>EDUC 410 <em>Practicum III</em></td>
<td>EDUC 401 <em>Managing &amp; Organizing Learning Environments</em></td>
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<tr>
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<td>Educ 411 <em>Practicum IV</em></td>
<td>Educ 411 <em>Practicum IV</em></td>
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<tr>
<td>Five</td>
<td>EDUC 612 <em>Prof. internship</em>****</td>
<td>Prof. development semester***</td>
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<tr>
<td></td>
<td>EDUC 602 <em>Prof. Id.: Teacher as Leader</em></td>
<td>Educ 601 <em>Context of Education</em></td>
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<td></td>
<td>Educ 678 <em>Instructional practicum</em></td>
<td>Educ 600 <em>Teacher as Researcher</em></td>
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<tr>
<td></td>
<td>Educ 687 <em>Instructional practicum</em></td>
<td>Educ 600 <em>Teacher as Researcher</em></td>
</tr>
</tbody>
</table>

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*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 may 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 *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, (304) 293-2169, 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 HR&E Advising Center at (304) 293-2169 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 5–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 HR&E Advising Center at (304) 293-2169 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 5–adult, French in grades 5–adult, and German in grades 5–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 HR&E Advising Center at (304) 293-2169 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 5–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 HR&E Advising Center at (304) 293-2169 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 9–adult, chemistry 9–adult, physics 9–adult, or general science 5–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 HR&E Advising Center at (304) 293-2169 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 5–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 HR&E Advising Center at (304) 293-2169 for more information about this program and its requirements.
Davis College of Agriculture, Forestry, and Consumer Sciences
Cameron R. Hackney, Ph.D., Dean, Director of the Agricultural and Forestry Experiment Station
Dennis K. Smith, Ph.D., Associate Dean, Academic Affairs
John C. Sencindiver, Ph.D., Assistant Dean, Academic Affairs
William E. Vinson, Ph.D., Associate Director, Agricultural and Forestry Experiment Station
Paul E. Lewis, Ph.D., Director, Division of Animal and Veterinary Sciences
Barbara S. McFall, Ph.D., Division of Family and Consumer Sciences
Joseph F. McNeel, Ph.D., Director, Division of Forestry
Barton S. Baker, Ph.D., Director, Division of Plant and Soil Sciences
Timothy T. Phipps, Ph.D., Interim Director, Division of Resource Management

www.caf.wvu.edu

Degrees Offered
Bachelor of Science
Bachelor of Science in Agriculture
Bachelor of Science in Family and Consumer Sciences
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; Family and Consumer Sciences; Forestry and Natural Resources; Plant and Soil Sciences; and Resource Management. There are 16 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) and a 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 Veterinary Sciences; Biochemistry; Human Nutrition and Foods

Division of Family and Consumer Sciences
Interior Design; Textiles, Apparel, and Merchandising

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

Nature of Program
Students in the college study in programs that emphasize: the biological sciences, including the study of animals, nutrition, plants, trees, or soils; the area of applied management including fashion merchandising and agribusiness management; the social sciences, including recreation, child development, and family studies; the creative arts, including the innovative and functional design of landscapes and interiors; and the environmental sciences, including economic policy, conservation, and resource management. The college and its
curricula stress the environment, the production and distribution of agricultural and forestry products, and relationships among humans as they live and work in various environments. Our majors are intended to foster the wise management, utilization, and conservation of our soil, water, forests, wildlife, domestic animals, food, and fiber.

The college is also the site of the West Virginia Agricultural and Forestry Experiment Station. Extensive research programs are supported in such areas as child development, family studies, agronomy, soil quality, wildlife protection, forest utilization and management, horticulture, geographic information systems, dairy, livestock and poultry production, natural resources, and rural development. The University maintains extensive lands, including farms and forests, to support the University’s land-grant mission. Students and professors use these areas for both instruction and research, and the information generated at these sites is shared in the classroom and throughout the state.

**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.

**Honoraries 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.

**Assigned/Special Topics**

A maximum of 12 credit hours for courses titled Assigned or Special Topics or Directed or Independent Study may be counted toward fulfilling the requirements for a bachelor’s degree in the college.

**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. 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.

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 colleges. 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, 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 enough to 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 job.

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  
**Hrs.**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition and Rhetoric (GEC objective #1)</td>
<td>6</td>
</tr>
<tr>
<td>(or conformity with University English requirements)</td>
<td></td>
</tr>
<tr>
<td>GEC Requirements (objectives 3–9)</td>
<td>22</td>
</tr>
<tr>
<td>Natural Sciences (GEC objective #2)</td>
<td></td>
</tr>
<tr>
<td>(must elect a minimum of eight credits in biology; eight credits in chemistry; three credits in college algebra or equivalent)</td>
<td>24</td>
</tr>
<tr>
<td>Courses in Agriculture</td>
<td>45</td>
</tr>
<tr>
<td>Elect a minimum of a three-credit course, excluding Assigned Topics, in each of the following categories:</td>
<td></td>
</tr>
<tr>
<td>1. Animal science</td>
<td></td>
</tr>
<tr>
<td>2. Plant science</td>
<td></td>
</tr>
<tr>
<td>3. Soil science</td>
<td></td>
</tr>
<tr>
<td>4. Agricultural economics</td>
<td></td>
</tr>
<tr>
<td>Elect additional courses to obtain a total of 45 hours in the college.</td>
<td></td>
</tr>
<tr>
<td>Free Electives</td>
<td>31</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>128</strong></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  
**Hrs.**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition and Rhetoric</td>
<td>6</td>
</tr>
<tr>
<td>(or conformity with University English requirements)</td>
<td></td>
</tr>
<tr>
<td>GEC Requirements (objectives 3–9)</td>
<td>22</td>
</tr>
<tr>
<td>Natural Sciences (GEC objective #2)</td>
<td>40</td>
</tr>
<tr>
<td>(A minimum of two courses in each of biology, chemistry, physics, and calculus are required. You may substitute advanced chemistry courses for calculus to meet degree requirements. This ordinarily means organic chemistry and/or biochemistry.)</td>
<td></td>
</tr>
<tr>
<td>Courses in Agriculture</td>
<td>24</td>
</tr>
<tr>
<td>Free Electives</td>
<td>36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>128</strong></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  
**Hrs.**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition and Rhetoric (GEC objective #1)</td>
<td>6</td>
</tr>
<tr>
<td>(ENGL 101 and 102 or conformity with University requirements)</td>
<td></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>
</tbody>
</table>
Physics 101 and 102, or Physics 111 and 112 .......................................................... 8
Biology 115, 117, 219, and 310 ............................................................................... 18
Chemistry 115, 116, 233, 234, 235, and 236 ........................................................... 24
Concentration Area ...................................................................................................... 30
  30 hours of coursework beyond the biochemistry core
  selected from courses in Agriculture, Forestry, and
  Consumer Sciences or Biochemistry (Med. School)
Electives ...................................................................................................................... 11
Total .......................................................................................................................... 128

Bachelor of Science: Human Nutrition and Foods Major
This is a nationally accredited four-year curriculum that meets the academic require-
ments 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 biochem-
istry, advertising, writing, and exercise physiology.

Curriculum Requirements

<table>
<thead>
<tr>
<th>Course</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>ENVM 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>Total</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>
<tr>
<td>CHEM 115, 116, 233, 234, 235, 236</td>
<td></td>
</tr>
<tr>
<td>F&amp;CS 265, 460 or AGEE 421</td>
<td></td>
</tr>
<tr>
<td>F DST 200</td>
<td></td>
</tr>
<tr>
<td>HN&amp;F 171, 271, 348, 350, 353, 460, 461, 472, 474, 494</td>
<td></td>
</tr>
<tr>
<td>PHYS 101, 102</td>
<td></td>
</tr>
<tr>
<td>PSYC 101, 251</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>128</td>
</tr>
</tbody>
</table>

Pre-Professional Programs (Veterinary Medicine, Human Medicine, and Allied Health professions)
The bachelor of science programs in animal and nutritional sciences and biochemistry
are designed to provide students with the academic requirements for entry into profes-
sional schools or colleges of veterinary medicine. WVU has agreements with Ohio State
University and the Southern Regional Education Board. 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 Family and Consumer Sciences**

Barbara McFall, Ph.D., Director

**Programs of Study**

The Division of Family and Consumer Sciences is evolving to further enhance the quality of living by our creative efforts. For over a century, our disciplines have been dedicated to improving the interaction between people and their environments. Specifics have varied from era to era, but the goal of improved interaction has remained unchanged. Currently, our programs at WVU employ two primary processes toward this end—design and merchandising.

To better understand the importance and positioning of design as a unique form of inquiry, consider that formal investigation normally begins with science, which objectively explores "what is." The arts and humanities evaluate the human experience by asking "what does that mean to me." Design completes the cycle by envisioning "what might be better." This ability to ask, answer, and consistently act on the question of "what might be better" often is cited as the defining trait of modern humans.

Design also may refer to the product or products of the creative process. The diversity of products arising from design inquiry gives rise to merchandising. Merchandising is defined as the process of selection, offering, and trade of products that assures interested and qualified people access to appropriate resources at the right place, time, and price. Qualified clients perceive a need and are willing and able to trade. Merchandisers facilitate a match.

If you have an interest in creating and sharing extraordinary products and experiences, we invite you to join us as we grow. You will be learning in lectures and studios as well as through internships and site visits. You will be invited, and in some programs required, to study abroad. At the time of this writing, our programs include interior design, fashion design, and fashion merchandising. There may be additional opportunities by the time you read this. Please come see us when considering your options.

**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.
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 Family and Consumer Sciences

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 ID 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>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 100</td>
<td>1</td>
<td>ID 125</td>
<td>3</td>
</tr>
<tr>
<td>ID 110</td>
<td>3</td>
<td>ID 230 or 260</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
<td>Foreign language</td>
<td>3</td>
</tr>
<tr>
<td>Art (drawing)</td>
<td>3</td>
<td>Art (drawing)</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 105</td>
<td>3</td>
<td>ENG 102</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 106</td>
<td>1</td>
<td>GEC/Program Requirements</td>
<td>3</td>
</tr>
<tr>
<td>GEC/Program Requirements</td>
<td>3</td>
<td>Total*</td>
<td>18</td>
</tr>
</tbody>
</table>

At end of this semester, students will continue in the program based on GPA ranking in interior design and then on overall GPA.)
Second Year

First Semester Hrs. | Hrs.
-----------------|------------------
ID 155..............| 3
ID 200..............| 3
ID 293A............| 3
ID 270 or 420......| 3
BiOL 106...........| 1
GEC/Program Requirements...| 3
Total*..................| 16

Second Semester Hrs. | Hrs.
-----------------|------------------
ID 225.............| 3
ID 235.............| 3
ID 230 or 260......| 3
ID 293B............| 2
GEC/Program Requirements......| 6
Total*..................| 17

Third Year

First Semester Hrs. | Hrs.
-----------------|------------------
ID 325.............| 2
ID 375.............| 3
ID 270 or 420......| 3
GEC/Program Requirements...| 9
Total*..................| 17

Second Semester Hrs. | Study Abroad
-----------------|------------------
Total*..................| 15

Fourth Year

First Semester Hrs. | Hrs.
-----------------|------------------
ID 355.............| 3
GEC/Program Requirements...| 13–15
Total*..................| 16

Second Semester Hrs. | GEC/Program Requirements
-----------------|------------------
ID 450.............| 1
ID 455.............| 3
GEC/Program Requirements......| 12
Total*..................| 16

*Note: 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 sophomore, junior, and senior 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 230, and a minimum grade of B in 125.

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 on 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 above 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.

Textiles, Apparel, and Merchandising
Bachelor of Science in Family and Consumer Sciences

Students in the textiles, apparel and merchandising (TA&M) program obtain a broad-based education. They may pursue a fashion merchandising or an apparel design option; both curricula consist of a minimum of 128 credit hours. Minors are available in areas such as business, advertising, foreign languages, communication studies, sociology, history, or art history.

All TA&M 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 term and fall semester only.

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 TA&M 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

Positions in retailing include buying, allocating/planning, managing, e-commerce, visual merchandising, product development, coordinating, and promoting fashion goods. Placement may be found with specialty stores, mass merchandisers, discount operations, and small and large department store organizations. Within the fashion industries, sales, allocating/planning, design, product development, sourcing, wholesale marketing, management, and promotion positions are available.

All TA&M 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 TA&M program as first-semester freshmen.
   1. Enrollment in first-year courses is not limited. The following courses have open enrollment: TA&M 120 and TA&M 140.
   2. Second-level and above courses are limited to TA&M majors.

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 TA&M students must earn a C or above in TA&M 120, TA&M 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 TA&M 293 *Special Topics: Design Concepts of Dress*, and TA&M 293 *Special Topics: Figure and Fabric Drawing*, to remain in this option.
   4. Successfully complete ART (101 or 105 or 106), ENGL 101, MATH 126, PSYC 101, and SOCA 101.

Second-, Third-, and Fourth-Year Levels

I. GPA Requirement

A. All TA&M students must 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.

C. Students will be given one semester to bring their GPA to 2.25 or above; after this period, they will be advised into another program.

II. Grade Requirements

A. All TA&M students are required to earn a C or above in all required TA&M courses. Students' grades in TA&M courses will be monitored each semester.

B. Any student who has earned a grade of D or lower in any of the TA&M courses will be notified of the problem.

C. Students who have received a grade of D or lower for one of the required TA&M courses may correct the problem by repeating the course the next time it is offered, space permitting, and earning a C or above. Please note that many TA&M courses are offered only once per academic year.

D. Fashion design students are required to earn a grade of B or above in TA&M 230 in order to remain in the fashion design option.

III. Course Sequence

A. The TA&M 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 before their second year, ENGL 102 fall semester of their second year, and ECON 201 and ACCT 201 before TA&M 320.

IV. Business, Division, and Theatre Requirements

A. All TA&M students are required to take MATH 126, ECON 201, CS 101, ACCT 201, ADV 215, ENGL 304, BUSA 320, and BUSA 330.

B. Fashion merchandising students are required to take finance (BUSA 340 or ARE 461).

C. All TA&M 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 course in a work setting and gain experience. It is offered through WVU fall semester and summer only. The summer practicum is six weeks long 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. Approval of the site ahead of time 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 TA&M 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 TA&M 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 to nine weeks long and spans both summer terms; students must register and pay for three credits during each 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 TA&M 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 TA&M 420 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.

TA&M Block Schedule—Fashion Merchandising
First Year
First Semester
TA&M 120 Textile and Apparel Complex or
TA&M 140 Introductory Textiles
Second Semester
TA&M 120 Textile and Apparel Complex
TA&M 140 Introductory Textiles
Second Year
First Semester
TA&M 220 Social-Psyc Aspects of Dress
TA&M 231 History of Costume
TA&M 230 Apparel Construction and Fitting

Second Semester
TA&M 221 Visual Merchandising
TA&M 293 History of Contemporary Dress
Study Abroad—Optional, summer after 1st or 2nd yr.

Third Year
First Semester
TA&M 320 Merchandise Buying and Management 1
TA&M 293 Practicum, or summer after 2nd yr.

Second Semester
TA&M 420 Merchandise Buying and Management 2

Fourth Year
First Semester
Semester Study Abroad Optional
TA&M 491 Internship, or summer after 3rd yr.

Second Semester
TA&M 340 Textiles and Apparel Global
TA&M 321 Study Tour, or spring of 3rd yr., elective
TA&M 493 Portfolio, elective

TA&M Block Schedule—Fashion Design
First Year
First Semester
TA&M 120 Textile and Apparel Complex
TA&M 293 Design Concepts of Dress

Second Semester
TA&M 140 Introductory Textiles
TA&M 293 Figure and Fabric Drawing

Second Year
First Semester
TA&M 220 Social-Psyc Aspects of Dress
TA&M 231 History of Costume
TA&M 230 Apparel Construction and Fitting

Second Semester
TA&M 221 Visual Merchandising
TA&M 293 History of Contemporary Dress
Study Abroad Optional, summer after 2nd yr.

Third Year
First Semester
TA&M 320 Mer. Buying and Mgmt. 1
TA&M 433 Design and Illustration (1)

Second Semester
TA&M 420 Mer. Buying and Mgmt. 2
TA&M 332 Flat Pattern Design (2)

Fourth Year
First Semester
TA&M 433 Design and Illustration (2)
TA&M 491 Internship, or summer after 3rd yr.

Second Semester
TA&M 340 Textiles and Apparel Global
TA&M 321 Study Tour, or spring of 3rd yr.
TA&M 493 Portfolio, elective, 3rd yr.

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 TA&M program: ENGL 101, ENGL 102, CS 101, MATH 126, ART (101 or 105 or 106), 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, HUM, HIST, PSYC (beyond 101), SOCA (beyond 101), SPAN, FRCH, ITAL, or CDFS 110. Selected courses from these disciplines may be used to fulfill requirements for a minor. CDFS 110 may be used to fulfill both the GEC and division requirements.
General Education Curriculum
Objective Course Requirements (Required*) Hrs.
Communication ENGL 101*, ENGL 102* ............................................6
Basic Math & Science CS 101*, MATH 126*, Lab Science* (4 hr.), Science* (3 hr.) ....................................................14
The Past & Its Traditions ART (101 or 105 or 106), ............................................3
Contemporary Society ECON 201 ..................................................................3
Artistic Expression HUM 101 or 102 ..........................................................3
The Individual in Society UNIV 101* or equivalent,
                        PSYC 101 .............................................................4
American Culture SOCA 101 .....................................................................3
Western Culture ECON 202, FRCH, HUM 101 or 102, ITAL, .................3
              SPAN, SOCA 105
Non-western COMM 316, FRCH, HIST, SOCA, SPAN, JRL 101....3
Total Minimum number of credits for TA&M ..................42

Division of Forestry
Joseph F. McNeel, Ph.D., Director
John R. Brooks, Forest Resources Management Coordinator
Steve Selin, Recreation, Parks, and Tourism Resources Coordinator
Kyle Hartman, Wildlife and Fisheries Coordinator
James P. Armstrong, 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 cur-
riculum 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, re-
search, 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, and Ohio, into the Division of
Forestry and Natural Resources programs.
Accreditation of Forestry Programs

The recreation, parks, and tourism resources program is accredited by the National Recreation and Park Association as a professional preparation program.

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 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 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. 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 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

Freshman Year
ENGL 101 Composition and Rhetoric .................................................................3
BIOL 101 General Biology ...........................................................................3
CHEM 111/115 Fundamentals of Chemistry ...............................................4
FOR 101 Careers-Natural Resources Management ......................................1
MATH 124/126 College Algebra ..................................................................3
PLSC 206 Principles of Plant Science ............................................................4
MATH 150/155 Introduction to Calculus/Calculus 1 .....................................3
ENGL 102 Composition and Rhetoric ..........................................................3

Sophomore Year
FOR 205 Dendrology ................................................................................3
STAT 211 Elementary Statistical Inference ................................................3
CE 200 Land Surveying .............................................................................3
FOR 203 Careers and Natural Resources .....................................................1
FMAN 222 Forest Mensuration ..................................................................4
ECON 201 Principles of Microeconomics ..................................................3
FMAN 212 Forest Ecology ........................................................................3
WMAN 493 SPTP-Forest, Wildlife, Management .......................................3
FMAN 400 Forest Resource Management Field Practice ............................6
FOR 326 Remote Sensing of Environment ................................................3
WDSC 100 Forest Resources in U.S. History 
or GEC Obj. # 3 ................................................................................3

Junior Year
FMAN 311 Silvicultural Systems ................................................................4
WDSC 223 Wood Anatomy and Structure ................................................3
ECON 202 Principles of Macroeconomics ................................................3
AGEE 421 Agricultural/Natural Resource Communications 
or Approved COMM Elective ................................................................3
FMAN 330 Principles of Forestry Economics .............................................4
AGRON 202 Principles of Soil Science .......................................................3
AGRON 203 Principles of Soil Science .......................................................1
WDSC 232 Primary Conversion and Grading .............................................3
FOR 438 Human Dimensions of Natural Resources Management ............3

Senior Year
FMAN 433 Forest Management .................................................................3
ENTO 470/PPTH 470 Forest Pest Management .........................................3
FHYD 444 Watershed Management ............................................................3
FMAN 434 Forest Resources Management Planning ..................................3

Additional GEC requirements, not elsewhere covered .............................12
Electives ..................................................................................................10
Total ...................................................................................................128

Career Opportunities
Our graduates find a variety of career opportunities. Many are professional forest-
ers with governmental agencies, such as the U.S.D.A. Forest Service and state forestry
departments, and many others are employed by private wood industries such as lumber
and wood products companies and pulp and paper companies. Some of our graduates work in
private forestry consulting or have established their own businesses. 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, and social 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 Web site at www.forestry.caf.wvu.edu/wvu%5Fparks/ or email the program coordinator at sselin@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>Freshman Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
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<tr>
<td>BIOL 101</td>
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<tr>
<td>BIOL 103</td>
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</tr>
<tr>
<td>FOR 101</td>
<td>1</td>
</tr>
<tr>
<td>RPTR 142</td>
<td>2</td>
</tr>
<tr>
<td>RPTR 242</td>
<td>3</td>
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<tr>
<td>WMAN 150</td>
<td>3</td>
</tr>
<tr>
<td>MATH 124</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 101</td>
<td></td>
</tr>
<tr>
<td>WDSC 100</td>
<td>3</td>
</tr>
<tr>
<td>FOR 140</td>
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<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>BIOL 105/106 or CHEM 111 or GEOL 110/111</td>
<td>4</td>
</tr>
<tr>
<td>SOC 101</td>
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<tr>
<td>FOR 203</td>
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<td>FOR 205</td>
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</tr>
<tr>
<td>RPTR 239</td>
<td>3</td>
</tr>
<tr>
<td>PE elective</td>
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<tr>
<td>ENGL 102</td>
<td>3</td>
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<tr>
<td>SPA 270</td>
<td></td>
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<tr>
<td>FOR 240</td>
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</table>
Elective..........................................................................................................................3
RPTR Advanced Elective ..........................................................................................3
RPTR 493D ..................................................................................................................3

**Junior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>STAT 211</td>
<td>3</td>
</tr>
<tr>
<td>POLS 240</td>
<td>3</td>
</tr>
<tr>
<td>Artistic Expression elective</td>
<td>3</td>
</tr>
<tr>
<td>FOR 438</td>
<td>3</td>
</tr>
<tr>
<td>RPTR 433</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 111 or 201</td>
<td>3</td>
</tr>
<tr>
<td>Non-western Culture elective</td>
<td>3</td>
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<tr>
<td>Elective</td>
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<tr>
<td>ARE 220</td>
<td>3</td>
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<td>RPTR 485</td>
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<tr>
<td>RESM 493F Applied GIS Env. Mgmt</td>
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<tr>
<td>RPTR 481</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FOR 470A</td>
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<tr>
<td>ENVP 460</td>
<td>3</td>
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<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>FOR 421</td>
<td>3</td>
</tr>
<tr>
<td>RPTR Advanced Elective</td>
<td>3</td>
</tr>
<tr>
<td>AGEE 421</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>RPTR 450</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>128</strong></td>
</tr>
</tbody>
</table>

**Professional Preparation and Areas of Emphasis**

The professional preparation program in recreation, parks, and tourism resources 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 communications, entrepreneurship, and 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.

**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 our 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 and free 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.
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 ............................................................................................................ 9

FOR 101 Careers in Natural Resources Management .................................................. 1
FOR 203 Careers in Natural Resources ............................................................................. 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

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
GEC Objective # 6 ........................................................................................................... 3
ECON 111 or 201 (or GEC #8) ......................................................................................... 3
SOCA 105 or POLS 103 (or GEC #9) ............................................................... 3

MATH 124 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
AGRN 202/203 (Principles of Soil Science) ................................................................. 4
Oral Communication (e.g. AGED 421, SPA 270) ............................................................ 3
ANPH 301 Animal Physiology ......................................................................................... 3

Total ................................................................................................................................. 129

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 WVVDNR 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.

College of Agriculture and Forestry
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, 313, 431, 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 1.6 million people nationwide according to the 2000 Census. 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 40 hours of coursework, to supplement 88 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.

### Curriculum Requirements (Core Courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 101</td>
<td>Professional Orientation, or equivalent</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>Composition and Rhetoric</td>
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<tr>
<td>ENGL 102</td>
<td>Composition and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101</td>
<td>Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 103</td>
<td>Biology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 111</td>
<td>Chemistry</td>
<td>4</td>
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<tr>
<td>MATH 155</td>
<td>Calculus</td>
<td>4</td>
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<tr>
<td>PHYS 101</td>
<td>Introductory Physics</td>
<td>4</td>
</tr>
<tr>
<td>STAT 211</td>
<td>Elementary Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>FOR 203</td>
<td>Careers in Natural Resources</td>
<td>1</td>
</tr>
<tr>
<td>FOR 205</td>
<td>Dendrology</td>
<td>3</td>
</tr>
<tr>
<td>FOR 222</td>
<td>Forest Mensuration</td>
<td>4</td>
</tr>
<tr>
<td>FOR 240</td>
<td>Computer Applications for Natural Resources</td>
<td>3</td>
</tr>
</tbody>
</table>
FOR 438 Human Dimensions of Natural Resource Management.................................3
ECON 201 Principles of Economics........................................................................3
ECON 202 Principles of Economics........................................................................3
WDSC 100 Forest Resources in U.S. History, or equivalent \(^1\).................................3
GEC Objective 5 Elective (Artistic Expression).........................................................3
GEC Objective 6 Elective (The Individual in Society)...............................................3
GEC Objective 7 Elective (American Culture).........................................................3
GEC Objective 9 Elective (Non-Western Culture)....................................................3
WDSC 223 Wood Anatomy and Structure...............................................................3
WDSC 340 Physical Properties of Wood...................................................................3
WDSC 341 Wood Mechanics..................................................................................3
WDSC 413 Wood Chemistry....................................................................................3
WDSC 232 Timber Procurement and Grading..........................................................3
WDSC 362 Forest Products Decision-Making...........................................................4
WDSC 422 Forest Products Harvesting..................................................................3
WDSC 465 Wood-Based Composite Materials.......................................................4
WDSC 494 Seminar.................................................................................................1

<table>
<thead>
<tr>
<th>Professional Area of Emphasis in Wood Processing</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of Emphasis Based Upon a Minor or Previous Major</td>
<td></td>
</tr>
<tr>
<td>WDSC 330 Wood Machining..................................................3</td>
<td></td>
</tr>
<tr>
<td>WDSC 351 Forest Products Protection............................3</td>
<td></td>
</tr>
<tr>
<td>WDSC 337 Wood Adhesion and Finishing............................3</td>
<td></td>
</tr>
<tr>
<td>WDSC 460 Plant Layout for Wood Industries (^4)...............4</td>
<td></td>
</tr>
<tr>
<td>WDSC 491 Professional Field Experience.........................3</td>
<td></td>
</tr>
</tbody>
</table>

University-approved minor or at least 15 hours of core courses
in an approved discipline \(^5\) ........................................15

Restricted electives \(^6\) ..................................................10

<table>
<thead>
<tr>
<th>Area of Emphasis in Forest Utilization</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 200 Land Surveying.................................3</td>
<td></td>
</tr>
<tr>
<td>FOR 326 Remote Sensing of the Environment...............................................2</td>
<td></td>
</tr>
<tr>
<td>FHYD 444 Forest Hydrology.............................3</td>
<td></td>
</tr>
<tr>
<td>FMAN 212 Forest Ecology.................................3</td>
<td></td>
</tr>
<tr>
<td>FMAN 311 Silvicultural Systems.........................4</td>
<td></td>
</tr>
<tr>
<td>FMAN 433 Forest Management.............................3</td>
<td></td>
</tr>
<tr>
<td>WDSC 423 Forest Roads (^4) ........................................4</td>
<td></td>
</tr>
<tr>
<td>WDSC 491 Professional Field Experience...............3</td>
<td></td>
</tr>
<tr>
<td>WMAN 234 Forest Wildlife Management..................3</td>
<td></td>
</tr>
<tr>
<td>Writing (W) course.............................................3</td>
<td></td>
</tr>
</tbody>
</table>

Restricted electives \(^6\) ....................................................9

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\(^1\) 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 WS&T 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 1.6 million people nationwide. Yet only 22 American universities provide 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

<table>
<thead>
<tr>
<th>General Education Curriculum</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives 1 and 3–9</td>
<td>28–29</td>
</tr>
<tr>
<td>Objective 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>
<tr>
<td>Courses in agriculture</td>
<td>45</td>
</tr>
</tbody>
</table>
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 .................................................................31–32
Total .............................................................................................................128

Specific requirements of reach 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 any two additional minors offered through the Division of Plant and Soil Sciences. Those minors include environmental microbiology, environmental protection, horticulture, and pest management. Other required courses include: AGRL 111; AGRN 202, 203; AGRN/ENVP 425; A&VS 251; CHEM 111, 112; ENVM 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; BIOL 350; CHEM 115, 116; ENGL 305; ENTO 404; ENVM 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 410; AGRN 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, ENVM 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; ENVP 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; ENVM 401; ENVM/AGRN 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 ENVM 341; HORT 220, 420, 441, 445, 491 or 493; MATH 126; PLSC 206; PPTH 401.

Landscape Management Area of Emphasis  LARC 105; HORT 260; HORT 493; 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) CHEM 233, 234, 235, 236; AGBI 410; PHYS 101, 102; AGRN 202, 203; PLSC 206; GEN 371; PPTH 401; ENVM 341, 401 (Capstone)
Restricted Electives for Major: (minimum of 18 hours) AGBI 514; BIOL 312; ENVM 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; ENVM 341; ENVP 155; PLSC 206; PHYS 101,102; SPA 170, 270; and two of the following courses: ENTO 404, GEN 371, PPTH 401.

Restricted Electives for Major (minimum of 15 hours) AGRN 125, 410, 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 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, ENVM/ENVP 401, ENTO/ENVP 412, AGRN/ENVP 425, AGRN/ENVP 451, AGRN/ENVP 455.

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 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 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/ENVM/ENVP 420, AGRN 430, AGRN/ENVP 455.

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, biodeterioration, 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: ENVM 341 General Microbiology (4 hr.), and PPTH 401 General Plant Pathology (4 hr.).

Minimum of seven hours selected from the following: ENVM 401 Environmental Microbiology (4 hr.) ENVM 420 Soil Microbiology (3 hr.), ENVM 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.).

*Maximum of four hours of special topics courses (ENVM 493 or PPTH 493) can be applied toward the 15 hour total and requires approval of the division director.

Division of Resource Management
Timothy T. Phipps, Ph.D., Interim 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.

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

(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

Total ..................................................................................20–23

Total ..................................................................................128

Minor in Agribusiness Management

Principles pertaining to agribusiness management requires 15 credit hours including: ARE 110, 204, 431, and 461. The remaining three credit hours must be chosen from: ARE 406, 420, 435 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, including production and technical agriculture positions 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.

Curriculum Requirements

Hrs.
Communications.............................................................6
Basic Mathematical Skill and Scientific Inquiry....................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
Courses in the College....................................................45
Restrictive Electives........................................................43
Option Requirements and Electives.................................135

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.

Agricultural courses required of all agricultural and extension education majors: AGEE 110, 220, 250, 421, 440, 454 Practica, 494 Reflective Learning, AGRN 202, 203, ARE 204, A&VS 251, PLSC 206.


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 in Environmental and Natural Resources Economics

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.

Course Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<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>
</tr>
<tr>
<td>Artistic Expression</td>
<td>3</td>
</tr>
<tr>
<td>The Individual in Society</td>
<td>4</td>
</tr>
<tr>
<td>American Culture</td>
<td>3</td>
</tr>
<tr>
<td>Western Culture</td>
<td>3</td>
</tr>
<tr>
<td>Non-Western Culture</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42</strong></td>
</tr>
</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.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>

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.)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

Free Electives

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>23–25</strong></td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>****</td>
<td><strong>128</strong></td>
</tr>
</tbody>
</table>

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).
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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Communications</td>
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<tr>
<td>Basic Mathematical Skill and Scientific Inquiry: (Including MATH 126,</td>
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<td>MATH 128, and BIOL 101 and 103)</td>
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<td>The Past and Its Traditions</td>
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<td>Contemporary Society</td>
<td>3-4</td>
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<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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<td>American Culture</td>
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<tr>
<td>Western Culture</td>
<td>3</td>
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<tr>
<td>Non-Western Culture</td>
<td>3</td>
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<td>Option Requirements and Electives</td>
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<td>CE 200</td>
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<td>Studio Art Courses</td>
<td>6</td>
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<tr>
<td>Courses in Landscape Architecture*</td>
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<td>Electives</td>
<td>21–23</td>
</tr>
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</tr>
</tbody>
</table>

* 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. Timely completion of MATH 126 and 128 and of CE 200 is also critical for advancement in the program of study.

Of the 63 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, 260, 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
- Biology
- Chemistry
- Communication Studies
- Criminology and Investigations
- Economics
- English
- Environmental Geoscience
- Foreign Languages
- Geography
- History
- Individualized Major
- International Studies
- Liberal Arts and Sciences
- Mathematics
- Multidisciplinary Studies
- Philosophy

**Bachelor of Science**
- Biology
- Chemistry
- Computer Science
- Forensic and Investigative Science
- Geology
- Industrial Mathematics and Statistics
- Mathematics
- Physics
- Psychology

**Bachelor of Multidisciplinary Studies**

**Bachelor of Social Work**

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 over 1,000 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 450 faculty members are actively engaged in research and scholarship, publishing approximately 400 articles and 25 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 203 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 www.as.wvu.edu/forlang, 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.

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. Satisfactorily completion of MATH 155 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.

Course satisfying the B.S. science requirement are the following:

BIOL 115 and BIOL 117
CHEM 111 and CHEM 112 or
CHEM 115 and CHEM 116 or
CHEM 117 and CHEM 118
CS 110 and CS 111 or
CS 110 and CS 201 (for students with programming experience) or
CS 110 and CS 250 (for students with programming experience)
GEOL 101/102 and (GEOL 103/104 or GEOL 201* or GEOL 203* or GEOL 230*)
or
GEOL/GEOG 110/111 and (GEOL 103/104 or GEOL 201* or GEOL 203* or
GEOL 230*)
MATH 156 and MATH 251
MATH 156 and (STAT 211* or STAT 215*)
(STAT 211* or STAT 215*) and (STAT 312* or STAT 331* or STAT 421*)
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. Individualized department requirements may be more directive than the college’s core B.A. and 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 to receive credit for it.

**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. See specific departments for admission requirements.

Academic Minors

Most departments in the Eberly College of Arts and Sciences offer formal academic minors. In addition, minors are available in Africana studies, Italian 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.

A student should declare his or her intention to complete a minor when formally requesting admission to a major program. It is the student’s responsibility to obtain information about the minor and to complete the required courses. At the time of application for graduation, the student must indicate that he or she wishes to be certified for the minor.

Application for Graduation and Diploma

All candidates for degrees in the Eberly College of Arts and Sciences must fill out an application for graduation and diploma in 221 Armstrong Hall. Candidates should make such application during the second semester of their junior year in order to have their records evaluated as to college and University requirements. Application must be made during the
first month of the semester or session in which the candidate expects to be graduated. 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 be graduated without application.

Africana Studies Program
Robert Maxon, Coordinator

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 hrs.), 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, GEOG 293, HIST 427, 428, 429, 430, 433, 434, 451, 452; MUSIC 175, 477, 492B; POLS 335; SOCA 235 or any ASP offerings (e.g. ASP 293, 493). Grades of C or higher must be earned in all courses applied for the minor. Students are encouraged to work with an area ASP advisor 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
Jonathan Cumming, Biology Chair
Harry O. Finklea, Chemistry Chair

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): Orientation to Biochemistry; MATH 155 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): BIOC 339 or 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, 337, 339, 411, 422, 441, 491, 497, 514, 531; 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
Jonathan Cumming, Chair
Jeffrey Wells, Associate Chair for Undergraduate Studies

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, Statistics (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, and 415.
- **Group IV. Integrative Biology:** PHYS 293 Medical Physics, AGBI 410 Agricultural Biochemistry, BIOC 339 Introduction to Biochemistry, and BIOL 302 Biometry.

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, 493, and 793 Independent Study, 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 and MATH 156 or MATH 150 and Statistics (STAT) 211.
• Physics (PHYS) 101 or 111 and 102 or 112 are required.
• 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, 337, 338, 350, 410, 411, 412, 413, 414, 415, 436, 437, 438, 439, 440, 441, 450, 461, 462, 463, 493 (sections B and up).

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, 493A, and 793A do not satisfy the required 15 hours of electives in biology. They can serve as general electives.

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.

Pre-Medical Bachelor of Science Requirements in Biology

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: Biology 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, ENVM 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 293 (medical physics).

Note: Students may only count two of AGBI 410, BIOC 339, ENVM 341, or PHYS 293 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: Biology 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 ENVM 341.

Note: Students may only count one of AGBI 410, BIOC 339, ENVM 341, or PHYS 293 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.
### Suggested Biology (B.A.) Curriculum

#### First Year

<table>
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<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tr>
<td>BIOL 115</td>
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<td>BIOL 117</td>
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<td>CHEM 115</td>
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<td>CHEM 116</td>
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<td>MATH 155</td>
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#### Second Year

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<th>Second Semester</th>
<th>Hrs.</th>
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<td>3</td>
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<tr>
<td>CHEM 233</td>
<td>3</td>
<td>BIOL 321</td>
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<td>CHEM 235</td>
<td>1</td>
<td>CHEM 234</td>
<td>3</td>
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<tr>
<td>PHYS 101</td>
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<td>CHEM 236</td>
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<td>PHYS 102</td>
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#### Third Year

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<td>BIOL Elective</td>
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#### Fourth Year

<table>
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<th>Hrs.</th>
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| **Total Hours** | 128 |

### Suggested Biology (B.S.) Curriculum

#### First Year

<table>
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<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>BIOL 115</td>
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<td>BIOL 117</td>
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<td>CHEM 116 (or 118)</td>
<td>4 (or 5)</td>
</tr>
<tr>
<td>MATH 155</td>
<td>4</td>
<td>STAT 211</td>
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<td>GEC Electives</td>
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#### Second Year

<table>
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<th>Hrs.</th>
<th>Second Semester</th>
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<tr>
<td>BIOL 219</td>
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<td>BIOL 221</td>
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<tr>
<td>CHEM 233, 235</td>
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<td>BIOL 321</td>
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<tr>
<td>PHYS 101 (or 111)</td>
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<td>CHEM 235, 236</td>
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<td>ENGL 102</td>
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<td>PHYS 102 (or 112)</td>
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<td><strong>Total</strong></td>
<td>16</td>
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</table>

| **Total Elective** | 6 |
| **Total Hours**    | 128 |
Third Year
First Semester Hrs. | Second Semester Hrs.
--- | ---
BIOL Elective.........................3 (or 4) | BIOL Elective.........................4
GEC Electives ..........................6 | BIOL Elective.........................3
General Electives .......................6 | GEC Elective ..........................3
Total ...................................15 (or 16) | General Elective .......................6

Fourth Year
First Semester Hrs. | Second Semester Hrs.
--- | ---
BIOL Electives .......................6 (or 7) | BIOL Electives .......................6 (or 7)
General Electives .......................6 | GEC Elective ..........................6
GEC Electives ..........................6 | General Elective .......................3
Total ...................................18 (or 19) | Total ....................................15 (or 16)
Total Hours ................................128

Bennett Department of Chemistry
Harry O. Finklea, Chair
Jeffrey L. Petersen, Associate Chair

Degrees Offered
Bachelor of Arts, Bachelor of Science

Nature of Program
The Bennett Department of Chemistry offers three degree programs: the bachelor of science (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 (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: Chemistry (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, 156, 251; Physics (PHYS) 111, 112. The six hours of approved chemistry electives must be selected from the following courses: CHEM 312, 339, 411, 441, 450, 460, 493, 496, 497, 514, 531, 532, 541; subject to the restriction that only three hours of CHEM 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 112, MATH 156, and MATH 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, (capstone requirement) 403 plus seven hours of approved chemistry electives; MATH 155, 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, 441, 460, 493, 496, 497, 514, 531, 532, 541 subject to the restriction that only three hours of CHEM 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 102, and MATH 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 a student should consult the associate chairperson.

Suggested Chemistry (B.A.) Curriculum
First Year
First Semester   Hrs.   Second Semester   Hrs.
CHEM 115 (or 117) ............... 4 (or 5)   CHEM 116 (or 118) ............... 4 (or 5)
MATH 115 (or 126) .......... 4 (or 3)   MATH 156 (or 128) .......... 4 (or 3)
GEC Elective ...................... 3   ENGL 101 ......................... 3
Non-Chemistry Elective* ........... 4   Non-Chemistry Elective* ........... 4
Total ............................. 15 (or 16)   Total ............................. 15 (or 16)
### Second Year

<table>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
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<td>3</td>
<td>CHEM 234</td>
<td>3</td>
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<tr>
<td>CHEM 234</td>
<td>1</td>
<td>CHEM 235</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 101</td>
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<td>PHYS 102</td>
<td>4</td>
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<td>Foreign Language</td>
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<td>Foreign Language</td>
<td>3</td>
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<tr>
<td>GEC Elect. (or MATH 155)</td>
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<td>GEC Elect. (or MATH 156)</td>
<td>3 (or 4)</td>
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<td>ENGL 102</td>
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<td>GEC Elective</td>
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<tr>
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<td><strong>Total</strong></td>
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### Third Year

<table>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>CHEM 215 (if 117 and 118 were not taken)</td>
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<td>CHEM 341</td>
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<td>GEC Elective or Foreign Lang. (if necessary)</td>
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<tr>
<td>General Elective</td>
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<td>CHEM Elective</td>
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<td><strong>Total</strong></td>
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### Fourth Year

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<td>GEC Elective (if needed)</td>
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*May consider BIOL 115 and 117.

### Suggested Chemistry (B.S.) Curriculum

#### First Year

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<th>Hrs.</th>
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<tbody>
<tr>
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<td><strong>Total</strong></td>
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#### Second Year

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<th>Hrs.</th>
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<th>Hrs.</th>
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<tr>
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<td>4</td>
<td>CHEM 234</td>
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<td>CHEM 233</td>
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<td>PHYS 112</td>
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<td>PHYS 111</td>
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<td>MATH 251</td>
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<td>ENGL 102</td>
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#### Third Year

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<td>AGBI 410</td>
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### Fourth year

<table>
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<td>CHEM 422</td>
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<tr>
<td>General Electives</td>
<td>6</td>
<td></td>
<td></td>
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<tr>
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<td><strong>Total</strong></td>
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<tr>
<td><strong>Total Hours</strong></td>
<td><strong>128</strong></td>
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### Communication Studies

Matthew M. Martin, Chair
Andrea Weber, Undergraduate Coordinator

**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; have completed COMM 200 and 201 with a combined GPA of 3.0; and have 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 over 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. Additional decisions involving elective coursework to fulfill this 21 hour requirement will be made in consultation with a communication studies advisor.

**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 2.5 GPA in all communication studies classes of 2.5; have completed COMM 200 and 201 with a combined GPA of 2.5; and have completed at least 30 hours of coursework.

The applied communication studies area of emphasis requires 128 hours, of which students must complete a minimum of 36 hours in communication studies that includes COMM 200, 201, 403, and 491. While students may take over three credits of COMM 491...
Field Experience, only three credits of 491 will count toward the necessary 36. Students must complete 15 hours from the following: COMM 105, 202, 306, 307, 308, 309, 316, 317, 404, 405, 406, and 408. An additional three hours are selected from the following: COMM 212, 303, 304, 305, and 314. 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 and STAT 111. The department 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 maintain 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

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 or 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. CEMR specifically lists additional high school credits and standardized test score requirements beyond WVU admission, while ECAS leaves that judgment to the department. 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:

- 3.0 grade point average in high school.
- Mathematics ACT score of 26, or mathematics SAT score of 600.

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 degree programs. Typically, students complete pre-CS during their first two years, at which time they become CS degree candidates beginning their junior year.

Pre-CS consists of all courses listed below, and each course (or transfer equivalent) must be completed with a grade of C or better.

Courses separated by/are sequence courses:

- CS 110/111
- CS 220
- Math 155 (calculus)
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.

**ECAS Degree Plan**
- MATH 156, 251
- STAT 215
- CPE 271/272
- CS 210, CS 221, CS 230, 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)

**CEMR Degree Plan**
- MATH 156, 251
- STAT 215
- CPE 271/272
- CS 210, CS 221, CS 230, CS 310, CS 350
- CPE 310/311
- Pick four technical electives (12 hrs.): CS 400-level course
- CS 480, CS 481 (Capstone series)

5. Suggested Four-Year Plan of Study

Both degree plans (CEMR or ECAS) require 128 hours of coursework. The following shows suggested plans of study for each.

**CEMR Degree Plan for B.S.C.S.**

**First Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 110 Intro. Computer Science</td>
<td>4</td>
<td>CS 111 Intro. Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>MATH 155 Calculus I</td>
<td>4</td>
<td>MATH 156 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 115 Fundamentals Chem</td>
<td>4</td>
<td>PHYS 111</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101 Comp. and Rhetoric</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 101/199 Fr. Engr. Design</td>
<td>3</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
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**Second Year**

<table>
<thead>
<tr>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 251 Multivar. Calculus</td>
<td>4</td>
<td>CPE 271/272 Dig. Logic Dsgn &amp; Lab</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 112 Gen. Physics†</td>
<td>4</td>
<td>ENGL 102 Comp. and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>CS 220 Discrete Mathematics</td>
<td>3</td>
<td>CS 230 Intro. Software Engr.</td>
<td>4</td>
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<tr>
<td>GEC Elective</td>
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<td>GEC Elective</td>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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**Third Year**

<table>
<thead>
<tr>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE 310/311 Microprocessor Sys</td>
<td>4</td>
<td>CS 310 Prin. Program Language</td>
<td>3</td>
</tr>
<tr>
<td>CS 350 Comp. Sys. Concepts</td>
<td>3</td>
<td>CS Technical Elective (CS 4XX)</td>
<td>3</td>
</tr>
<tr>
<td>CS 221 Analysis of Algorithms</td>
<td>3</td>
<td>Elective*</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>GEC Elective (3-9)</td>
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</tr>
<tr>
<td>GEC Elective</td>
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<td>GEC Elective</td>
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<td><strong>Total</strong></td>
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### Fourth Year

<table>
<thead>
<tr>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 480 <em>Sr. Design Seminar</em></td>
<td>2</td>
<td>CS 481 I</td>
<td>3</td>
</tr>
<tr>
<td>CS Technical Elective (CS 4xx)</td>
<td>3</td>
<td>CS Technical Elective (CS 4xx)</td>
<td>3</td>
</tr>
<tr>
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<tr>
<td>Elective*</td>
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<td>Total</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>

*Free electives must satisfy the following: At least 9 credits must be at the 200 level or above. At least 6 credits in one discipline.

### ECAS Degree Plan for B.S.C.S.

#### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 155 <em>Calculus I</em></td>
<td>4</td>
<td>MATH 156 <em>Calculus II</em></td>
<td>4</td>
</tr>
<tr>
<td>UNIV 101</td>
<td>1</td>
<td>ENGL 101 <em>Comp. and Rhetoric</em></td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
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<td>GEC Elective</td>
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</tr>
<tr>
<td>GEC Elective</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
<td>17</td>
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### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 210 <em>Data and File Structure</em></td>
<td>4</td>
<td>CPE 271/272 Dig Logic Dsgn &amp; Lab.</td>
<td>4</td>
</tr>
<tr>
<td>CS 220 <em>Discreet Mathematics</em></td>
<td>3</td>
<td>STAT 215 <em>Intro. Prob. &amp; Stat</em></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 <em>Comp. and Rhetoric</em></td>
<td>3</td>
<td>CPE 230 <em>Intro. Software Engr.</em></td>
<td>4</td>
</tr>
<tr>
<td>Lab Science Elective†</td>
<td>4</td>
<td>Lab Science Elective†</td>
<td>4</td>
</tr>
<tr>
<td>MATH 251 <em>Multivariable Calculus</em></td>
<td>4</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td><strong>Total</strong></td>
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### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 221 <em>Analysis of Algorithms</em></td>
<td>3</td>
<td>Lab Science Elective†</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
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<td>GEC Elective (3-9)</td>
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</tr>
<tr>
<td>GEC Elective</td>
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<td>Elective**</td>
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</tr>
<tr>
<td><strong>Total</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>CS or CPE 480 <em>Sr. Dsgn. Seminar</em></td>
<td>2</td>
<td>CS or CPE 481 <em>Sr. Design Project</em></td>
<td>3</td>
</tr>
<tr>
<td>CS Tech Elect., Theroy (CS 4xx)*</td>
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<td>CS Tech Elect. (CS 4xx or CpE 4xx)</td>
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<tr>
<td>Elective**</td>
<td>3</td>
<td>Elective**</td>
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<tr>
<td>Elective**</td>
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<td>Elective**</td>
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<tr>
<td><strong>Total</strong></td>
<td>14</td>
<td><strong>Total</strong></td>
<td>15</td>
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<tr>
<td><strong>Grand Total</strong></td>
<td>128</td>
<td><strong>Grand Total</strong></td>
<td>128</td>
</tr>
</tbody>
</table>

†A two-semester sequence in a laboratory science and a third laboratory science course chosen from the following: BIOL 115 and BIOL 117; CHEM 115 and CHEM 116 or CHEM 117 and CHEM 118; GEOL 101/102 and GEOL 103/104 or GEOL 110/111 and GEOL 103/104 or GEOG 110/111 and GEOL 103/104; PHYS 111 and PHYS 112.

*Students must pick one from each of: theory, systems, and applications.

**Free electives must satisfy the following: At least nine credits must be at the 200 level or above. At least nine credits must be in one discipline.
**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, CS 220, CS 230.
- CS 310 and 350.
- At least one CS 400-level course.

**Economics**

William N. Trumbull, Chair

**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: acid rain, support for the poor, international trade, unemployment, capital punishment, education, the deficit, the third world, 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 each of the following courses with a grade of C or better and a grade of B or better in at least one of the courses: Economics (ECON) 201 and 202. Completion of Economics (ECON) 225 with a grade of C or better.
- Completion of English (ENGL) 101 and 102.
- A semester of calculus (MATH 150 or 155) 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 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 27 upper-division course hours 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 circumstances.

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

Timothy Dow Adams, Chair
Timothy Sweet, Associate Chair

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 appropriate 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 English 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 English 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 must earn a grade of C or better in all courses that are counted toward the major plus English 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**
English majors may obtain a concentration in professional writing and editing by fulfilling the requirements for a minor in professional writing and editing.

**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 C 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 Department of English Creative Writing Committee, ENGL 418.

One additional course from among those listed in category 1 (which may be taken at any time) or category 2 (which must be taken after the completion of one of the courses in category 1).

**Minor in Professional Writing and Editing**
Any student admitted to a degree program other than English may take a minor in professional writing and editing. Such a minor consists of 15 credit hours as follows: ENGL 201 or 303 (three hours); ENGL 302, 304, 305, and 491A (12 hours). To earn this minor, students must earn a grade point average of 3.0 or higher across ENGL 302, 304, 305, and 201 or 303. Students must successfully complete at least nine hours in the minor before being eligible to take ENGL 491A.

**Certificate in Professional Writing and Editing**
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 professional writing and editing, 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 302, 304, 305, and either English 201 or English 303. Students will need to complete successfully at least nine credit hours in this program before being eligible to take English 491 (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.

Maddening Loop, an online literary magazine.

NASSR-L, an electronic discussion group, is devoted to scholarship in British Romantic studies.

**Foreign Languages**  
Donald Hall, Chair  
Susan Braidi, Associate Chair

**Degree Offered**  
*Bachelor of Arts*  
*Majors: French, German, Spanish*

**Nature of Program**  
Coursework is offered in foreign literatures and cultures, linguistics, and languages, including Chinese, French, German, Italian, Japanese, Latin (Classics), Russian, and Spanish. Literature courses taught in English are designated as Foreign Literature in Translation (FLIT) 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 receive back credit for all courses in the 101, 102, 203, and 204 sequence out of which they placed. 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.

**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.

**Graduation Requirements**  
Students may select from three areas of emphasis (French, German, and Spanish) 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 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 then 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 then 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 then Spanish).

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 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.

**Residency Requirements**

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.

**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.

**Program Overview**

<table>
<thead>
<tr>
<th>Non-Business and Economics Courses</th>
<th>Hrs.</th>
<th>Total</th>
</tr>
</thead>
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<td>English 101</td>
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</tr>
<tr>
<td>English 102</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Objective 2: Math and Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Math 124, 126, or 129 with a grade of C or better</td>
<td>3–4</td>
<td></td>
</tr>
<tr>
<td>Computer Science 101</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Natural Science</td>
<td></td>
<td>3–4</td>
</tr>
<tr>
<td>Natural Science (w/Lab)</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Objective 3: The Past &amp; Its Traditions</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Objective 4: Contemporary Society</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Objective 5: Artistic Expression</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Objective 6: The Individual in Society</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>University 101</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Objective 7: American Cultural Diversity</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Objective 8: Western Culture</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Objective 9: Non-Western Culture</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

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Eberly College of Arts and Sciences

197
College Math Requirement: Math 150, 155, or 156 ........................................ 3–4
Psychology 101 and Sociology 101 are required for the business administration degree and meet specific GEC Objectives.
Foreign Language 203 and 204 meet specific GEC Objectives.
Subtotal .................................................................................................................. 45–48

Required Business Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore year</td>
<td></td>
</tr>
<tr>
<td>ACCT 201 and 202 Principles</td>
<td>6</td>
</tr>
<tr>
<td>ECON 201 and 202 Principles</td>
<td>6</td>
</tr>
<tr>
<td>ECON 225 <em>Elementary Business and Economics Statistics</em></td>
<td>3</td>
</tr>
<tr>
<td>Junior/Senior year</td>
<td></td>
</tr>
<tr>
<td>BCOR 315 <em>Professional Development</em></td>
<td>1</td>
</tr>
<tr>
<td>BCOR 320 <em>Legal Environment of Business</em></td>
<td>3</td>
</tr>
<tr>
<td>BCOR 330 <em>Information Systems and Technology</em></td>
<td>3</td>
</tr>
<tr>
<td>BCOR 340 <em>Business Finance</em></td>
<td>3</td>
</tr>
<tr>
<td>BCOR 350 <em>Principles of Marketing</em></td>
<td>3</td>
</tr>
<tr>
<td>BCOR 360 <em>Operations Management</em></td>
<td>3</td>
</tr>
<tr>
<td>BCOR 370 <em>Managing Individuals and Teams</em></td>
<td>3</td>
</tr>
<tr>
<td>BCOR 460 <em>Contemporary Business Strategy</em></td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
</tr>
</tbody>
</table>

Required Major Core Courses

(Varies by major; see major requirements under College of B&E) ................................ 27–30

Foreign Language Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 311</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language 301</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language 302</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language 303</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language 304</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language required culture course</td>
<td>3</td>
</tr>
<tr>
<td>FRCH 431 or FRCH 432</td>
<td></td>
</tr>
<tr>
<td>GER 341 or GER 441</td>
<td></td>
</tr>
<tr>
<td>SPAN 330 or SPAN 340</td>
<td></td>
</tr>
<tr>
<td>Foreign Language required literature course</td>
<td>3</td>
</tr>
<tr>
<td>FRCH 331 or FRCH 332</td>
<td></td>
</tr>
<tr>
<td>GER 331 or GER 332</td>
<td></td>
</tr>
<tr>
<td>SPAN 331 or SPAN 332 or</td>
<td></td>
</tr>
<tr>
<td>SPAN 341 or SPAN 342</td>
<td></td>
</tr>
<tr>
<td>Foreign Language electives in the major</td>
<td>9</td>
</tr>
<tr>
<td>Foreign Language capstone experience (PR: 21 hrs. of coursework in the foreign language major beyond the intermediate level (204 or the equivalent))</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship (or substitution course work)</td>
<td>10–16</td>
</tr>
<tr>
<td>Minimum total hours for the degree</td>
<td>158</td>
</tr>
</tbody>
</table>

*Although the College of Business and Economics requires MATH 124 and 150, students are encouraged to substitute MATH 155 and 156 or MATH 129 and 155 for MATH 124 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 literature in translation (FLIT). The outside course may be upper or lower division. No more than nine hours of lower-division course work 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.
Programs Abroad

The Department of Foreign Languages regularly offers language courses abroad. Currently, summer courses are offered in Brazil, France, Germany, and Spain. 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 2007–2009.

Minor

Students may complete an academic minor in foreign literature and translation (FLIT), French, German, linguistics, Italian studies, Russian, Spanish, and teaching English as a second language (TESL).

Requirements for the minors in French, German, Russian, 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 number 200, 203, and 204). LING 311 may also be used as three of the additional nine hours. 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).

The minor in foreign literature in translation requires a selection of 15 hours of FLIT courses, nine of which must be on 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 Italian studies requires 15 credit hours beyond ITAL 204 (prerequisite for the minor). The minor must include ITAL 303 and 304, and three other courses chosen from the following: ART 105, 106, 245, 246, 248, 249; CLAS 231, 232; HIST 201, 204, 205, 330, 331, 400, 480, 481; ITAL 293, 493, 496; occasional special topics courses in various fields (upon approval of coordinator). Of the 15 hours, at least nine must be upper-division level. No more than two of the following may be counted toward the minor: ART 105, 246; HIST 201, 205, 480, 481.

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, provide beginning work in understanding, speaking, reading, and writing the languages, with emphasis on communicative competence. The vocabulary is limited to words of high frequency.

- 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 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.

- Students who present two or more units of high school credit in a foreign language may satisfy the foreign language requirement of the Eberly College of Arts and Sciences by taking courses 203 and 204, or other approved courses on the same or higher level, in that language.
The Department of Foreign Languages offers a credit by examination program for elementary and intermediate classes in French, German, Italian, Russian, and Spanish only. Information about the program is available in the Department of Foreign Languages.

Forensic and Investigative Science
Suzanne Bell, Director
Keith Morris, Assistant Director

Degree Offered
Bachelor of Science

Nature of Program
The Forensic and Investigative Science (FIS) program comprises three areas of emphasis (forensic examiner, DNA-biology, and chemistry/toxicology.) 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 admissions 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 required course. 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 is required. Following the submission of all appropriate data, the Forensic Identification 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 FIDP 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 Court Testimony (FIDP 406), Evidence and Law (FIDP 404), Introduction to Microscopy (CHEM 310), Laboratory Quality Assurance (FIDP 480), Technical Writing for Forensic Science (FIDP 305) or Technical and Scientific Writing (ENGL 305), Forensic Journal Club (FIDP 408), and the Forensic Capstone (FIDP 410) course. A four-year plan of study for each area of emphasis is available from the academic advisor.
Required Pre-Program Coursework

Pre-program courses include: BIOL 115, 117, and 219; CHEM 115, 116, 233, 234, 235, 236; ENGL 101 and 102; MATH 155 and 156; PHYS 101 and 102 or PHYS 111 and 112; SPA 270; STAT 215; and FIDP 201. Students interested in the forensic chemistry option are strongly encouraged to take the PHYS 111/112 series.

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 placement coordinator, working with the assistant director, 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 anticipated length of internships will be 12 weeks or a minimum of 460 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 grades on the S/U 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 or S in courses offered on a satisfactory/unsatisfactory 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 identification 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. The information contained herein is presented as a general guide to assist students in preparing their course of study. Students should work closely with the program’s advisor when registering for courses to assure that program requirements are being met.

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>BIOL 115</td>
<td>4</td>
<td>BIOL 117</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 115</td>
<td>4</td>
<td>CHEM 116</td>
<td>4</td>
</tr>
<tr>
<td>MATH 155</td>
<td>4</td>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>SPA 270</td>
<td>3</td>
<td>MATH 156</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
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<td>GEC Elective</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>18</td>
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</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>BIOL 219</td>
<td>4</td>
<td>CHEM 234</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 233/235</td>
<td>4</td>
<td>CHEM 236</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 101/111</td>
<td>4</td>
<td>FIDP 201</td>
<td>3</td>
</tr>
<tr>
<td>STAT 215</td>
<td>3</td>
<td>PHYS 112 or 102</td>
<td>3</td>
</tr>
<tr>
<td>GEC Elective</td>
<td>3</td>
<td>ENGL 102</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>GEC Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

Third- and fourth-year courses are determined by the student’s selected area of emphasis (forensic examiner, forensic biology, or forensic chemistry and toxicology. Students interested in the chemistry and toxicology track are strongly encouraged to take the calculus-based physics series (PHYS 111/112).
Geology and Geography
Trevor M. Harris, Chair
Thomas Wilson, Associate Chair in Geology
Kenneth C. Martis, Associate Chair in Geography

Degrees Offered

Bachelor of Arts

Majors: Geography, Environmental Geoscience

Bachelor of Science

Major: Geology

Geology

The bachelor of science degree 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.

Candidates for the bachelor of science are required to take a total of 40 hours of geology courses. 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.

Instructional facilities and equipment include laboratories for mineralogy, petrology, geochemistry, sedimentology, paleontology, geophysics, geomorphology, mineral and fuel resources, and structural geology. 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. Other recent field classes have focused on stratigraphy in Spain and Ireland and the geomorphology, structural geology, and petrology of the American and Canadian Rockies. 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.

Bachelor of Science Requirements

A total of 128 hours is required including 40 hours of geology courses (excluding GEOL 203 and 351).

Required Courses for a B.S. with a major in geology: GEOL 101, 102, or 110, 111 (or GEOG 110, 111), 103, 104, 284, 285, 311*, 321, 331, or 454, 341, 404, 463, and five 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 and GEOL 351, or MATH 155 and 156.

Recommended electives: GEOL 455, 470, 472, 473; GEOG 205, 207, 350, 452, 455; CS 101; AGRN 202 and 203; additional biology, chemistry, physics, soil science, or mathematics courses.

An average of at least 2.0 must be attained in required upper-division geology courses.

*Used to fulfill the college writing course requirement.

Admission Requirements

Admission to the program requires at least a cumulative GPA of 2.0 and an average of at least 2.0 in lower-division geology courses.
Minor in Geology

Anyone interested in a geology minor is urged to contact the department.

Requirements for the minor: sixteen 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 P/F 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.

Geography

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 (GIS), planning and development, natural resources and environment, and international area studies. 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 World Regions, 106 Physical Lab and 107 Physical, 108 Human, 199 Orientation, and 240 U.S. and Canada.

Core elective requirements (3 hours) 205 Natural Resources, 209 Economic Geography, 210 Urban Geography.

Methods and applications (3 or 4 hours) 350 Introduction to GIS, 462 Digital Cartography, 455 Remote Sensing, 407 Environmental Field Geography.

Capstone Course (3 hours) 491 Professional Field Experience, 495 Independent Study, 496 Senior Thesis, 499 Honors Thesis.

Areas of Emphasis

Geographic Information Science (GIS)

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 science (GIS), image processing of remotely sensed data, and geographical models. The GIS 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, 361, 362, 415, 452, 453, and 455. Suggested courses in other disciplines: FOR 140, 326; MATH 155, 156, 251, 261; STAT 211, 215, 312, 331, 421, 445; CS 101, 110, 111, 220, 210, 330, 415, 440, 470; HIST 284; ART 111, 112, 223; IMSE 350; 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; ENGL 305; FOR 140, 326; HIST 284; MATH 128; POLS 336, 338; STAT 101; CS 101.

Planning and Development
The development and planning 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 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 economic development, sustainable development and policy, third world planning, urban social planning, gender studies, rural planning, and policy formation. Students are exposed to issues such as social equity vs. efficiency, new Urbanist planning techniques, community development, uneven development, gentrification and urban revitalization, 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, 491, and a regional course from any of the following 240, 241, or 243. 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.

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 comprise no more than six hours of Geography 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 (GIS), 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
Robert E. Blobaum, Chair
Steven M. Zdatny, Associate Chair and Director of Graduate Studies
William S. Arnett, Director of Undergraduate Studies
Katherine Aaslestad, Phi Alpha Theta Advisor
Elizabeth Fones-Wolf, Curriculum Coordinator

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 History 494 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 level. 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 offered as prescribed by that department or college.
• History majors must maintain a cumulative 2.2 GPA for all courses in the department to 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

Degree Offered

Bachelor of Arts
Major: Interdepartmental Studies

The individualized major provides the undergraduate student an opportunity to arrange an individually tailored program when the educational aims of the student fall between established department or program boundaries. This major is administered directly by the associate dean for undergraduate education 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 associate 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 associate 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**
Sherman D. Riemenschneider, Mathematics Chair
E. James Harner, Statistics Chairperson

**Degree Offered**
*Bachelor of Science*
*Major: Interdepartmental Studies*

**Nature of the Program**
The curriculum in industrial mathematics and statistics (IMS) will provide students 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 the 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 industrial mathematics and statistics 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 industrial mathematics and statistics curriculum includes the following required background courses (19 hours): MATH 155, 156, 251, 261, and STAT 215. The IMS program has the following core courses (12 hours) that all students must take: MATH 441 and *Mathematical Modeling* (the proposed MATH 463); STAT 312 and 461.

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

**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 fol-
lowing courses: ENG 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 valu-
able 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 course-
work 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. 18 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 241; 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, 432, 461, 462, 534, 535, 635, 636; GEOG 241, 411; GER 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, 418, 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, 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 SOCA 311; 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. Nine hours (three courses) from the following courses: FRCH 461, 462; GEOG 240, 241, 243, 309, 411, 412, 466; GER 361, 362; 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; SPAN 461, 462.


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, 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:

**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 treated 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.
Italian Studies
Annastella Vester, Coordinator

The minor in Italian studies is an interdisciplinary program managed by the Department of Foreign Languages and including courses offered by the Departments of Foreign Languages and History (Eberly College of Arts and Sciences) and by the Division of Art (College of Creative Arts). The minor program permits students who have taken four semesters of Italian languages courses to continue their study of Italian culture. It recognizes students’ successful completion of coursework focusing on the rich heritage of literature, art history, civilization, and history of the Italian peninsula, and of Italians abroad, with the award of an academic minor degree.

Requirements for the Minor
Students must take 15 credit hours of courses, including ITAL 303 and 304 (ITAL 204, or four semesters of Italian language, is a prerequisite for these two courses). Additional courses may be chosen from the following: 15 credit hours beyond ITAL 204 (prerequisite for the minor). The 15 hours must include ITAL 303 and 304, and three other courses chosen from the following: ART 105, 106, 245, 246, 248, 249; CLAS 231, 232; HIST 201, 204, 205, 330, 331, 400, 480, 481; ITAL 293, 493, 496; occasional special topics courses in various fields (upon approval of coordinator). Of the 15 hours, at least nine must be upper-division (300–400) level. No more than two of the following may be counted toward the minor: ART 105, 246; HIST 201, 205, 480, 481.

Liberal Arts and Sciences Major
Carol Zwickel, Advisor

Degree Offered
Bachelor of Arts
Major: Interdepartmental Studies

Nature of Program
The acceptance of liberal arts and sciences graduates into graduate and professional schools, and in government, commerce, and industry, is growing. This recent upsurge in the popularity of liberal arts and sciences graduates is based on the recognition that their program of study prepares them to master new knowledge quickly and to integrate that knowledge into a broad existing knowledge base.

In order to gain a broad knowledge base and develop skills in learning, critical thinking, and effective communication, majors in liberal arts and sciences take extensive coursework in all three traditional areas: natural and mathematical sciences, social sciences, and arts and humanities. Majors also complete an upper-division concentration in an area of their choice, and they meet all University and college requirements.

Admission Requirements
Students may apply for admission to the liberal arts and sciences major after they complete 58 hours of coursework, including MDS 103 Library Science, with an overall grade point average of at least 2.0.

Degree Requirements
The liberal arts and sciences major requires a minimum of 30 semester hours in each of the three basic cluster areas:

Humanities and Fine Arts At least six hours of the following courses must be at the 300 or 400 level. Coursework in these areas must have as its subject matter the understanding, appreciation, or history of the relevant disciplines. Credit will not be given for studio, performance, workshop, or craft courses.

Group I: art, music, theatre, humanities, English literature, foreign literature in translation—15 hours of courses.
Group II: history, philosophy, religious studies, foreign languages—15 hours of courses. 
(Courses used to satisfy the Eberly College foreign language requirement may not be used to fulfill this requirement.)

Social and Behavioral Sciences At least six hours of the following courses must be at the 300 or 400 level:
Group I: communications studies, psychology, sociology and anthropology—15 hours of courses.
Group II: economics, geography, political science—15 hours of courses.

Natural Sciences and Mathematics At least 12 hours of the following courses must be at the 200 level or above.
Group I: mathematics, computer science, statistics—15 hours of courses.
Group II: physics, chemistry, geology, biology—15 hours of courses.

Concentration
Fifteen hours of coursework, chosen in consultation with a liberal arts and sciences advisor, must be completed. At least 12 of those hours must be at the 300 or 400 level. The courses may be part of a traditional arts and sciences minor; a cluster of courses in another college such as business, journalism, or education; or an individually designed concentration. Courses used to complete the concentration may not also be used to fulfill other requirements for the major.

Capstone Course Requirement
A capstone course must be completed. This course will either be Humanities 492 Directed Studies, when offered as the liberal arts and sciences capstone experience, or a capstone course offered by another program or department and approved by the student’s advisor. The capstone course will normally be a component of a student’s concentration. Students wishing to use Humanities 492 in order to satisfy the liberal arts and sciences capstone requirement must enroll for this course in their senior year.

Mathematics
Sherman Riemenschneider, Chair

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, 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, 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, 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 215 and STAT 461.

**Track Two**
- MATH 155, 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 MATH 283, STAT 215, and 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, on the departmental placement examination, or by suitable ACT/SAT math scores. The placement examination is given during orientation for freshman and transfer students. It is also given on the Saturday before classes begin each semester. Students
intending to take the placement examination on the Saturday before classes need to register for the exam prior to the day the test is given. Sign-up sheets are in room 301 or 320, Armstrong Hall. There is no fee for the exam. The placement exam may only be taken once 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

**Degree Offered**

*Bachelor of Arts (B.A.) and Bachelor of Multidisciplinary Studies (B.MdS.)*

**Major: Multidisciplinary Studies**

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/coordinating. 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 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 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. 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

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 (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: Native American Studies 200 Intro to Native American Studies; English 156 Literature of Native America; History 264 American Indian History.

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 (nine hours).

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 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

Degree Offered
Bachelor of Arts

Nature of Program
The Department of Philosophy is 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 major includes all of the requirements for the philosophy major. In addition, pre-law students must take PHIL 130, 323, and 325.

Physics, Astronomy, and Physical Science

Earl E. Scime, Chair

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. One important area of emphasis for physics majors pursuing a B.S. is computational physics (a combination of physics and computer science).

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, 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); 15 hours of Eberly College of Arts and Sciences requirements (language and fine arts); and 55 hours in physics department requirements (31 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. Specific course requirements are, in physics: Orientation 199 (physics section), PHYS 111, 112, 314, 331, 333, 341 (2 hrs.), and nine hours of electives. In mathematics: MATH 155, 156, 251, 261. In science: eight hours from biology, chemistry, computer science and/or geology. In addition students have at least 27 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. Specific course requirements are, in physics: Orientation 199 (physics section), PHYS 111, 112, 314, 331, 333, 332 or 334, 341 (two semesters), 451, 461, plus 12
hours of electives. In mathematics: MATH 155, 156, 251, 261, plus one three-hour elective.
In addition, students have at least 25 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. 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 32 hours of physics, the other requirements are: PHYS 493 or 492 *Astrophysics*, PHYS 321, PHYS 481, GEOL 455, EE 221, 223, 465, MAE 331, and a second semester of PHYS 341 *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, BIO 115, 117, 219, 310, and BIOC 339, and PHYS 225 *Medical Imaging Physics*. 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 341, CHE 366, CHE 466, EE 450, and a second semester of PHYS 341 *Condensed Matter* semester. 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 *Medical Imaging Physics*. 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 course on courses numbered 300 or above.
Political Science
Joe D. Hagan, Chair
John C. Kilwein, Associate Chair
Robert E. DiClerico, Director of Undergraduate Studies
Jeffrey S. Worsham, Director of Graduate Studies

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 www.ia.wvu.edu:8888.

• 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 Orientation to Political Science, 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.

• 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, PSYCH 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 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 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 Program, 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

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. One 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.

For additional information: http://www.wvu.edu/~psychology/.

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

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. Online at http://rba.as.wvu.edu.

**Religious Studies**
Aaron Gale, Coordinator

**Degree Offered**

*Bachelor of Arts*

**Major: Interdepartmental Studies**

**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 practices of many world religions including Judaism, Christianity, Islam, and Near Eastern traditions. In addition, the program offers opportunities for the exploration of many other interesting areas of study including Hebrew and Christian scriptures, ethics, and other interesting topics. 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 WVU are intended to stimulate interest in the academic discipline of religious studies, which involves studying traditions objectively, without an agenda. Many religious studies courses may be taken for University GEC credit.

**Admission Requirements**

Admission to the interdepartmental degree program in religious studies requires a cumulative grade point average (GPA) of at least 2.0. Students must maintain an overall 2.0 GPA as well as a 2.0 GPA in religious studies courses.

**Degree Requirements**

If admitted to the interdepartmental degree program in religious studies, the student will be required to satisfactorily complete 42 hours of coursework. Of these 42 hours, 24 are in religious studies, six in Biblical studies, six in the history of religions, six in contemporary religious thought, three in mythology and religion, and RELG 494. (Students who wish to use RELG 494 to fulfill this requirement must complete 12 hours of religious studies courses before registering for RELG 494). The other 18 hours fulfill requirements outside the Program for Religious Studies. The following three-hour courses are required: SOCA 336, HIST 201 and 203, and PHIL 308. Six hours of American and/or English literature are also required. Students must maintain at least a 2.0 GPA in the required coursework in order to retain status as an interdepartmental major in religious studies.

**Purposes and Options of the Degree**

The interdepartmental degree in religious studies offers a general liberal arts education for students entering such professions as law, medicine, and business, if electives are carefully chosen. This major is useful to anyone seeking a professional career in religion, such as the ministry, academic study of theology, Biblical studies, religious journalism, or teaching.

**Minor in Religious Studies**

Any student may undertake a minor in religious studies. Fifteen hours of course-work offered by the program for religious studies must be complete at least nine hours must be upper-level (300-level or above). A GPA of at least 2.0 is required in order to fulfill the requirements of this minor.

Specifically, the course requirements for the minor in religious studies are as follows: one course in each of the four groups below including RELG 494, which is a seminar on a selected topic in religious studies; and one additional course in religious studies, subject to the requirement that at least nine hours be completed at the upper level.

- **Group 1:** Studies in the history of religion: RELG, 102, 219, 222, 230, 231, 232
- **Group 2:** Studies in sacred texts: RELG 303, 304
- **Group 3:** Studies in religious thought: RELG 350*
- **Group 4:** Seminar course: RELG 494

**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 five–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 (nine hours)—ECON 201, 202, and either 451 or 454;
- Geography (15 hours)—GEOG 102, 107, 108, 209, and 240; and
- History (24 hours).

Fifteen hours represent a core of U.S. survey (six hours) and West Virginia history (three hours). To earn the remaining nine hours, the student chooses three courses from one of the following groups:

United States
- 255 American Colonial Society
- 256 The American Revolution
- 257 Antebellum America
- 259 United States, 1865–1918
- 261 Recent America
- 453 Civil War and Reconstruction

Global Development
- 205 Early Modern Europe
- 206 Social History
- 242 Latin America: Reform and Revolution
- 264 American Indian History
- 281 The Agrarian Transformation (20th Century Russia)
- 293 European Social History
- 405 The Renaissance
- 411 The Industrial Revolution
- 427/428 East Africa
- 433/434 West Africa
- 445 American Women
- 446 European Women to 1700
- 473 Appalachian Regional History
- 474 City in American History
  - Political Science (12 hours)—POLS 101, 102, 210, 260.
  - Psychology (three hours)—PSYC 241.
  - Sociology and Anthropology (six hours)—SOCO 101 or 107; ANTH 105.
  - Education (23 hours)—EDUC 100, 200, 301, 302, 311, 312, 400, 401, 410, 411.
  - Geology (four hours)—GEOL 101, 102 (to be used in partial fulfillment of the University’s GEC requirements).

Academic Advising
All social studies pre-majors and majors are advised in the College of Human Resources and Education.
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 your 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 contemporary 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 principles, and practice accordingly.
b. Internalize the profession’s value base and gain skill in its application to resolving 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 economic justice.

4. Enrich the liberal arts curriculum of West Virginia University by providing opportunities for the undergraduate student body in general to increase their sensitivity, knowledge, 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 contribute 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 ongoing, post-graduation professional growth and development.
b. Provide a sound educational foundation for the student who may be appropriately 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. As an incoming freshman, you become a pre-major in social work by indicating your interests in pursuing a degree in social work when you submit your 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, you 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 feed back 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.

**University General Education Curriculum**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEC</td>
<td>41–43</td>
</tr>
<tr>
<td>SOWK 147 (Minority content)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>44–46</td>
</tr>
</tbody>
</table>

You must also take a writing skills course in social work, currently SOWK 494. As a social work student, you are required to take the following courses: PSYC 101, POLS 101 or 102, and SOCA 101 and 107. In science, you must take BIOL 101 and 103.

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional minority requirement</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Science Required Courses</td>
<td></td>
</tr>
<tr>
<td>SOCA 221 The Family</td>
<td>3</td>
</tr>
<tr>
<td>POLS 220 State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td><strong>Additional social and behavioral science requirements</strong> (nine hours total with three hours each in psychology, sociology, or political science.)</td>
<td>9</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

**Required Social Work Courses**

Lower Division

- SOWK 151 Introduction to Social Work................................................. 3

Upper Division

- SOWK 300 Social Welfare Policy and Services 1 .................................. 3
- SOWK 310 Social Welfare Policy and Services 2 .................................. 3
- SOWK 319 Skills Lab 1 ......................................................................... 1
- SOWK 320 Social Work Methods 1 ....................................................... 3
- SOWK 322 Social Work Methods 2 ....................................................... 3
- SOWK 324 Social Work Methods 3 ....................................................... 3
- SOWK 330 Human Behavior/Social Environment 1 .................................. 3
- SOWK 350 Human Behavior/Social Environment 2 .................................. 3
- SOWK 360 Social Work Research and Statistics .................................... 3
- SOWK 491 Field Practicum .................................................................... 12
- SOWK 493 SPTP electives ..................................................................... 6
- SOWK 494 Social Work Senior Seminar ............................................... 3

**Subtotal** ......................................................................................... 49

**General Electives** ........................................................................ 13–14

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

**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 Board of Regents Bachelor of Arts Degree (B.O.R.B.A.) 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. B.O.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

Degree Offered
Bachelor of Arts

Majors: Sociology and Anthropology, Criminology and Investigations

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
Students may apply for admission as pre-majors during their freshman or sophomore year. Application for admission into the major requires completion of SOCA 101 or SOCA 105 with a grade of C or higher; completion of STAT 211 (recommended) or STAT 111 with a grade of C or higher; completion of 58 credit hours with a minimum cumulative GPA of at least 2.0; and a minimum GPA of 2.25 across all SOCA courses.

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 Introduction to Sociology
- SOCA 105 Introduction to Anthropology
- SOCA 311 Social Research Methods
- SOCA 401 Sociological Theory (or SOCA 455 Anthropological Theory, when available)
- SOCA 488 Capstone Experience
- STAT 211 Elementary Statistics (or STAT 111 Understanding Statistics)

Emphasis Requirements Every major must complete the requirements of one of the divisional areas of emphasis. The areas of emphasis are in anthropology, and social inequality and social development.

- Students majoring in the Division of Sociology and Anthropology must earn a minimum of 33 credit hours in division courses. Twenty-seven hours are required at the 200 level or higher, of which 12 (including SOCA 311 and 401 (455) must be 300 level or higher. Specific courses are identified for each area of emphasis. It is assumed that all elective courses are three-credit courses.
- 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.
- An overall 2.0 GPA is required for graduation; a 2.0 GPA is also required in departmental courses for graduation.

Areas of Emphasis
Each sociology and anthropology major must enroll in a sociology or anthropology emphasis, depending on his or her academic or career interest. The areas of emphasis and the individual requirements of each are as follows:

Anthropology introduces students to the classic four-field perspective in this discipline: archaeology, physical, linguistic, and cultural anthropology. The program attracts students with a strong interest in physical anthropology and archaeology who have a deep interest in other cultures and places in the contemporary world. Courses deal with third-world health problems provoked by first-world systems, traditional cultural area studies, and the nature of our cultural and biological past. Required: in addition to general degree requirements, students must take SOCA 252 and 258/250 (lab) or SOCA 359, and must take 12 hours selected from SOCA 251, 255, 256, 257, 258, 259, 353, 358, 455, 456, or 493 (three credit hours of field work may be substituted for three credit hours); three elective hours in sociology (200 or above); and three elective hours in either sociology or anthropology (200 or above).
Social Inequality and Social Development combines two key ideas in structured inequality into one focus. Social Inequality provides an understanding of differentiation and ranking among individuals and groups in the U.S., historically and cross-culturally. Examining why social inequality exists and persists, students learn about differential devaluation with regard to gender, race, ethnicity, religion, class, age, sexual orientation, and disability. Social Development inquires into the structure of work, economic and social change, and community and regional development. This area of emphasis also allows students to learn how social systems and their development affect nations, regions, communities, households, and individuals—how change and development impacts people, places, and organizations in the “real world.” Students are encouraged to use their electives to focus on particular problems of inequalities and change. For example, combining courses in sociology, geography, and history, students can focus on forces that affect West Virginia and the Appalachian region. Wrapped around the core requirements, this area of emphasis instills solid reasoning, analytical, and critical thinking skills in students, and encourages the development of computer literacy and applied research skills. Students following this area of emphasis expect to enter professional and graduate programs, move directly into jobs in the public and private sectors, or focus courses into accommodated interests such as women’s studies, Africana studies, Native American studies, and gerontology. Required: in addition to general degree requirements, students must take 15 hours selected from SOCA 221, 222, 223, 235, 238, 240, 248, 304, 322, 323, 325, 332, 333, 336, 337, 360, 362, 405, 440, 463, or 490, with at least six hours at the 300–400 level; three elective hours in anthropology (200 or above); and three elective hours in sociology or anthropology (200 or above) outside of the area of emphasis.

Minor in Sociology and Anthropology

Students from outside the division may acquire a minor in the Division of Sociology and Anthropology by fulfilling the requirements of one of the minors listed below. (If more than one minor is desired, any given course will count toward fulfilling the requirements of only one minor.) For all minors, a GPA of 2.0 is required in 15 hours of coursework in one of the options specified below.

Anthropology Students must take SOCA 105 and 12 additional hours. Students must take SOCA 105 and 12 additional hours, nine of which must be 300 level or higher in regular anthropology courses. (Anthropology courses are numbered in the 50s, e.g., SOCA 255 or 256.)

Sociology Students must take 15 credit hours, including either SOCA 101 or 107 (three hours), and 12 additional hours, nine of which must be 300 level or higher, in sociology (not anthropology) courses. Sociology courses are SOCA courses not numbered in the 50s (i.e., not SOCA 250–259, 350–359, 450–459). A GPA of at least 2.0 in courses counted toward the minor is required.

Criminology and Investigations

Nature of Program

The criminology and investigations major is grounded in the disciplines of sociology and anthropology 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 through understanding of crime and forensic 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 may apply for admission as pre-majors during their freshman or sophomore year. Application for admission into the major requires completion of SOCA 101 or SOCA 105 with a grade of C or higher; completion of STAT 211 or STAT 215 with a grade of C or higher; completion of 58 credit hours with a minimum cumulative GPA of at least 2.0; and a minimum GPA of 2.5 across all SOCA courses. After all admission requirements are met student must obtain and submit an application by February 15 for Fall admission and September 15 for Spring admission.

**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 *Introduction to Sociology*
- SOCA 105 *Introduction to Anthropology*
- SOCA 311 *Social Research Methods*
- SOCA 401 *Sociological Theory*
- SOCA 488 *Capstone Experience*
- STAT 211 *Elementary Statistics* (or STAT 215 *Introduction to Probability and Statistics*)

**Degree Requirements**

Criminology and investigations major students complete a set of core courses designed to provide critical thinking and writing skills, and emphasize interests in crime and forensic investigation.

- Foundation Courses (six hours) SOCA 232, 233, 330.
- Intermediate Course (nine hours) SOCA 302, 331, 334, 335, 339, 345.
- Advanced Courses (six hours) SOCA 402, 407, 461.
- Elective Courses (nine hours) SOCA 222, 235, 238, 252, 265, 293, 304, 360, 405, 491, 493, 495.

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

The Department of Statistics no longer offers a bachelor of arts in statistics. Instead students interested in statistics should consider the interdepartmental bachelor of sciences in industrial mathematics and statistics.

A minor in statistics is available to university students. An applied statistics and a mathematical statistics track are 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

Barbara J. Howe, Director, Associate Professor of History

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 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, point 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. May of these courses fulfill General Education Curriculum distribution requirements as well as the GEC four or seven requirement in foreign culture/minority studies/gender studies. 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. Graduate students may earn a graduate certificate in women's studies. A master's degree with a concentration in women's studies is available through the master of arts in liberal studies (M.A.L.S.) program.
Admission Requirements
If University admission requirements are met, a student may be accepted to WVU as a women’s studies major. There is no pre-major code for this program, as students can be accepted into the program as first-year students. 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 Introduction to Women’s Studies. 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 494 Seminar, which is the capstone course. 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 Web site at www.wvu.edu/~wmst for the most current list of courses.

Coursework
- 30 hours in women’s studies courses (not all with WMST prefix), including WMST 330 and 494
- Minimum of 12 hours of upper-division courses (300/400 level)
- WMST 170 Introduction to Women’s Studies
- 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
- Liberal Studies/GEC
- 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, 494, 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, ext. 1155. E-mail: Barbara.Howe@mail.wvu.edu. Online at: www.wvu.edu/~wmst.
Perley Isaac Reed School of Journalism
Maryanne Reed, M.S.J., Dean

journalism.wvu.edu

Degree Offered

Bachelor of Science in Journalism

Specialized Programs (Majors): Advertising, Broadcast News, News-Editorial, Public Relations

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 (ACE-JMC) 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 affilies 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 metropolitan area high schools with large African-American 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 enrollment coordinator, 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 J-Week, award-winning journalists and communications inspire students by sharing their experiences and their strategies for success. These are in addition to the many top speakers the school brings to campus throughout the year. Recent speakers include Newsweek investigative reporter Michael Isikoff, award-winning environment journalist and author Andrew Revkin of The New York Times, and two-time Pulitzer Prize-winning editorial cartoonist Mike Luckovich of the Atlanta Journal-Constitution. In January of 2006, the School hosted a national forum on media coverage of the Sago Mine Disaster. The panel was televised in its entirety on C-SPAN and included journalists from CBS, CNN, USA TODAY, the New York Post, and the Charleston Gazette.

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 Web site 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.

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.

**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 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. 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, including room renovations, new seating, lighting, and a state-of-the-art teaching system for multimedia instruction.

**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, BN 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 BN 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 during their orientation class, 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. 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 major in one of the four program areas: advertising, broadcast news, news editorial, and public relations.

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, and public relations 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 and are strongly encouraged to take an official minor.

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 dean’s office. A student can take 20 or more hours only with the advisor’s and dean’s office 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 Pam Hanson, internship coordinator, 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 faculty assist 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 428, ADV 215, ADV 315, ADV 403, ADV 401 or 451, 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; 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
Maryanne Reed, M.S.J., Chair

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 focus 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.

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 426, NE 428, BN 215, BN 319, BN 386, and BN 487. In addition broadcast news students must complete at least one of the following: BN 486, JRL 431, or any 400-level JRL, NE, or BN 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; 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.
News-Editorial Program
John Temple, M.F.A., Chair

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 428, and NE 459. Students taking the news area of emphasis are required to take NE 426; they must also complete at least two of the following courses: NE 418, NE 420, NE 427, NE 430, JRL 220, JRL 320, JRL 431, JRL 440. Other upper-division NE, JRL, or BN 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 220 and JRL 431; they must also complete at least one of the following courses: JRL 320 and JRL 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; 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 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; 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.

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. (Changes are pending to the advertising minor. Contact Dr. Ralph Hanson at sojexlearning@mail.wvu.edu for the latest requirements.)

Course Requirements

<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</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 315 Advertising Copywriting</td>
<td>ADV 215. Must be taken online during summer.</td>
<td>3</td>
</tr>
<tr>
<td>ADV 403 Media Analysis</td>
<td>ADV 215. Must be taken online during summer.</td>
<td>3</td>
</tr>
<tr>
<td>ADV 459 Campaigns</td>
<td>ADV 215, 315, 403. Must be taken online during summer.</td>
<td>3</td>
</tr>
</tbody>
</table>

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.

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 Hrs.</th>
<th>Second Semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take JQE N/A</td>
<td>Obj. 1 ENGL 102</td>
</tr>
<tr>
<td>Obj. 1 ENGL 101</td>
<td>Obj. 2 Same Science</td>
</tr>
<tr>
<td>Obj. 6 PHIL 100 or 130</td>
<td>Obj. 3 HIST 152</td>
</tr>
<tr>
<td>Obj. 2 Lab Science</td>
<td>POLS 102</td>
</tr>
<tr>
<td>Obj. 5 course from approved list</td>
<td>ULIB 101</td>
</tr>
<tr>
<td>Obj. 6 JRL 115/UNIV 101</td>
<td>(or equivalent) 1</td>
</tr>
<tr>
<td>(or equivalent)</td>
<td></td>
</tr>
<tr>
<td>Obj. 8 JRL 101</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

Perley Isaac Reed School of Journalism
### 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>Foreign Language</td>
<td>3</td>
<td>PSYC 101</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 4 course from approved list</td>
<td>3</td>
<td>Same Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>HIST 153</td>
<td>3</td>
<td>ADV 215</td>
<td>3</td>
</tr>
<tr>
<td>ENGL Lit. from approved list</td>
<td>3</td>
<td>POLS 220</td>
<td>3</td>
</tr>
<tr>
<td>JRL 215</td>
<td>3</td>
<td>Obj. 9 course from approved list</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>

### 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>ADV 401/451</td>
<td>3</td>
</tr>
<tr>
<td>ADV 315</td>
<td>3</td>
<td>JRL 421</td>
<td>3</td>
</tr>
<tr>
<td>ADV 403</td>
<td>3</td>
<td>ECON 202</td>
<td>3</td>
</tr>
<tr>
<td>NE 428</td>
<td>3</td>
<td>Minor</td>
<td>3</td>
</tr>
<tr>
<td>Minor/2nd Concentration</td>
<td>3</td>
<td>BUSA 320/330</td>
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<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>
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### Fourth Year

<table>
<thead>
<tr>
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<th>Hrs.</th>
<th>Eighth Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Obj. 7 course from approved list</td>
<td>3</td>
<td>ADV 459</td>
<td>3</td>
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<tr>
<td>Minor</td>
<td>3</td>
<td>JRL Electives</td>
<td>0–7</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>Minor</td>
<td>6</td>
</tr>
<tr>
<td>JRL 489</td>
<td>3</td>
<td>General Elective</td>
<td>3</td>
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<tr>
<td>General Elective</td>
<td>0–6</td>
<td><strong>Total</strong></td>
<td><strong>12–19</strong></td>
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<td><strong>Total</strong></td>
<td><strong>12–18</strong></td>
<td><strong>Total</strong></td>
<td><strong>12–18</strong></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.

### Suggested Four-Year Broadcast News Schedule

<table>
<thead>
<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</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td>(or equivalent)</td>
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</tr>
<tr>
<td>Obj. 8 JRL 101</td>
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### Second Year

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hrs.</th>
<th>Fourth Semester</th>
<th>Hrs.</th>
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</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>Foreign Language</td>
<td>3</td>
<td>PSYC 101</td>
<td>3</td>
</tr>
<tr>
<td>Obj. 4 course from approved list</td>
<td>3</td>
<td>Same Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>HIST 153</td>
<td>3</td>
<td>ADV 215</td>
<td>3</td>
</tr>
<tr>
<td>ENGL Literature from approved list</td>
<td>3</td>
<td>POLS 220</td>
<td>3</td>
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<tr>
<td>JRL 215</td>
<td>3</td>
<td>Obj. 9 course from approved list</td>
<td>3</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

<table>
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<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>
</tr>
<tr>
<td>POLS 220</td>
<td>3</td>
<td>BN 386</td>
<td>3</td>
</tr>
<tr>
<td>BN 319</td>
<td>3</td>
<td>JRL 489</td>
<td>3</td>
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<tr>
<td>NE 428</td>
<td>3</td>
<td>Approved 400-level course</td>
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<td>Minor/2nd Concentration</td>
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<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>
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<td><strong>Total</strong></td>
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### Fourth Year

<table>
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<th>Hrs.</th>
<th>Eighth Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Obj. 7 course from approved list</td>
<td>3</td>
<td>BN 487</td>
<td>3</td>
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<tr>
<td>NE 426</td>
<td>3</td>
<td>Major Electives</td>
<td>3–7</td>
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<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><strong>Total</strong></td>
<td><strong>12–16</strong></td>
<td><strong>Total</strong></td>
<td><strong>15–19</strong></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.

### Suggested Four-Year News-Editorial Schedule

<table>
<thead>
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<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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</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>3</td>
</tr>
<tr>
<td>Obj. 6 JRL 115/UNIV 101 (or equivalent)</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>Obj. 8 JRL 101</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>Total</strong></td>
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</tbody>
</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>
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<td>JRL 318</td>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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</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>JRL 319</td>
<td>3</td>
<td>NE Area of Emphasis course</td>
<td>3</td>
</tr>
<tr>
<td>NE Area of Emphasis course</td>
<td>3</td>
<td>JRL 489</td>
<td>3</td>
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<tr>
<td>POLS 220</td>
<td>3</td>
<td>Minor</td>
<td>3</td>
</tr>
<tr>
<td>Minor/2nd Concentration</td>
<td>3</td>
<td>Any unused course from</td>
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<tr>
<td>ACCT 201/BUSA 340</td>
<td>3</td>
<td>Obj. 4, 5, 7 or 9 lists</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Perley Isaac Reed School of Journalism
Fourth Year

Seventh Semester | Hrs. | Eighth Semester | Hrs.
--- | --- | --- | ---
Obj. 9 course from approved list | 3 | NE 459 | 3
NE Area of Emphasis course | 3 | JRL Electives | 0–7
NE 428 | 3 | Minor | 6
Minor | 3 | General Elective | 3
Minor | 3 | Total | 12–19
General Elective | 0–3 | Total | 15–18

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

First Semester | Hrs. | Second Semester | Hrs.
--- | --- | --- | ---
JOE | N/A | Obj. 1 ENGL 101 | 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 | 1 | Total | 14
(or equivalent) | | | |
Obj. 8 JRL 101 | 3 | Total | 17

Second Year

Third Semester | Hrs. | Fourth Semester | Hrs.
--- | --- | --- | ---
Obj. 2 MATH 121 (or other MATH) | 3 | Obj. 2 STAT 111 (or equivalent) | 3
Obj. 4 course from approved list | 3 | Obj. 7 course from approved list | 3
Foreign Language | 3 | PSYC 101 | 3
HIST 153 | 3 | Same Foreign Language | 3
ENGL Literature from approved list | 3 | JRL 318 | 3
JRL 215 | 3 | PR 215 | 3
Total | 18 | Total | 18

Third Year

Fifth Semester | Hrs. | Sixth Semester | Hrs.
--- | --- | --- | ---
ECON 201 | 3 | ECON 202 | 3
POLS 220 | 3 | PR 324 | 3
PR 319 or approved equivalent | 3 | JRL 489 | 3
NE 428 | 3 | Minor | 3
Minor/2nd Concentration | 3 | COMM 103, SPA 270 or THET 102 | 3
ACCT 201/BUSA 340 | 3 | Total | 15
Total | 18 | Total | 18

Fourth Year

Seventh Semester | Hrs. | Eighth Semester | Hrs.
--- | --- | --- | ---
Obj. 9 course from approved list | 3 | PR 459 | 3
PR 422 | 3 | JRL Electives | 0–7
Minor | 3 | Minor | 6
Minor | 3 | General Elective | 3
General Elective | 0–5 | Total | 12–19

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.
School of Dentistry
James J. Koelbl, D.D.S., M.S., M.J., Dean
Richard J. Crout, D.M.D., Associate Dean
Christina B. DeBiase, Ed.D., Associate Dean
Sheila S. Price, D.D.S., Associate Dean
Robert L. Wanker, D.D.S., Assistant Dean
Amy D. Funk, M.S.D.H., Interim Director, Division of Dental Hygiene
www.hsc.wvu.edu/sod

Degree Offered
Bachelor of Science in Dental Hygiene

Admission
To get an application, go to www.hsc.wvu.edu/sod/departments/Hygiene/admission.html and follow the “Apply On-line” link. 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 April 1st proceeding the fall semester you are applying for.

If you have no previous study in higher education, you will apply for admission as a freshman at WVU. 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
- 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>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>CHEM 111</td>
<td>4</td>
<td>BIOL 102</td>
<td>3</td>
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<tr>
<td>*COMM 100/102 or 104</td>
<td>3</td>
<td>BIOL 104</td>
<td>1</td>
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<td>*DTHY 100 Health Care Term</td>
<td>1</td>
<td>CHEM 112</td>
<td>4</td>
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<tr>
<td>DTHY 185 Head &amp; Neck Anatomy</td>
<td>2</td>
<td>*DTHY 101 Intro. to Dental Hygiene</td>
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<tr>
<td>ENGL 101</td>
<td>3</td>
<td>*DTHY 186 Dental Anatomy</td>
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<tr>
<td>MATH 126</td>
<td>3</td>
<td>*HN&amp;F 171 Nutrition</td>
<td>3</td>
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<td>*Orientation 101</td>
<td>1</td>
<td>*PSYC 101</td>
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### Summer Semester

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## Second Year

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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>ANAT 206</td>
<td>1</td>
<td>DTHY 225 Dental Hygiene Tech</td>
<td>2</td>
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<tr>
<td>DTHY 205 Theory/Practice-Prevent</td>
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<td>DTHY 220 Dent Nursing Tech</td>
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<td>GEC (#3,5,8,9)</td>
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<tr>
<td>MICB 200</td>
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<td>*ENGL 102</td>
<td>3</td>
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<tr>
<td>PSYC 241*</td>
<td>3</td>
<td>Histology 309</td>
<td>2</td>
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<tr>
<td>SOCA 101*</td>
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<td>PHYS 241</td>
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<tr>
<td><strong>Total</strong></td>
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### Summer Semester

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<tbody>
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<td>PHARM 260 (Web)</td>
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## Third Year

<table>
<thead>
<tr>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>DTHY 320 Dental Radiology</td>
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<td>DTHY 300 Anesthesiology</td>
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<tr>
<td>DTHY 350 Public Health</td>
<td>1</td>
<td>DTHY 322 Dental Radiology</td>
<td>1</td>
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<td>DTHY 360 Dental Materials</td>
<td>3</td>
<td>DTHY 351 Dental Health Ed</td>
<td>3</td>
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<tr>
<td>DTHY 363 Periodontics</td>
<td>2</td>
<td>DTHY 361 Expanded Functions</td>
<td>2</td>
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<td>DTHY 366 Dental Literature</td>
<td>1</td>
<td>DTHY 364 Periodontics</td>
<td>2</td>
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<td>DTHY 370 Clinical Methods</td>
<td>2</td>
<td>DTHY 374 Clinic DH</td>
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<td>DTHY 372 Clinic DH</td>
<td>2</td>
<td>DTHY 378 Didactic Teaching Meth</td>
<td>2</td>
</tr>
<tr>
<td>Pathology 300</td>
<td>3</td>
<td>Pathology 302</td>
<td>3</td>
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<td><strong>Total</strong></td>
<td>16</td>
<td><strong>Total</strong></td>
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### Summer Session A

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<tr>
<td>DTHY 491 Rural Health Rotation</td>
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<tr>
<td><strong>Total</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>
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<tbody>
<tr>
<td>DTHY 402 DH Practice</td>
<td>2</td>
<td>DTHY 406 Clinic – DH</td>
<td>3–4</td>
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<tr>
<td>DTHY 405 Clinic DH</td>
<td>4</td>
<td>DTHY 407 Clinic Methods</td>
<td>2</td>
</tr>
<tr>
<td>DTHY 450 Dental Health Ed. 2</td>
<td>2</td>
<td>DTHY 440 Clinical Did. Sem</td>
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</tr>
<tr>
<td>DTHY 478 Clin. Teaching Methods</td>
<td>1</td>
<td>DTHY 451 Dental Health Ed. 3</td>
<td>2</td>
</tr>
<tr>
<td>DTHY 493 Clinical Pharm.</td>
<td>1</td>
<td>DTHY Electives 490, 491, 493</td>
<td>2</td>
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<tr>
<td>DTHY Electives 490, 491, 493</td>
<td>1</td>
<td>*GEC Req. (#3, 5, 8, 9)</td>
<td>3</td>
</tr>
<tr>
<td>*GEC Req (#3, 5, 8, 9)</td>
<td>3</td>
<td><strong>Total</strong></td>
<td>13–14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>14</td>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>
Medical Technology
Martha J. Lake, Ed.D., CLS (NCA), MT (ASCP), Professor and Program Director
Patricia Miller-Canfield, M.D., Assistant Professor and Medical 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, cytogenetic, 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, 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. 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. 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 are required; at least one must be from a college science professor. A personal interview with the Medical Technology Admissions Committee may be 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
First Semester Hrs. Second Semester Hrs.
CHEM 115 Fund. of Chemistry .......... 4 CHEM 116 Fund. of Chemistry .......... 4
Elective* ............................................ 3 ENGL 101 Comp. and Rhet. ............. 3
MATH 126 Algebra ...................... 3 Elective* ............................................ 3
BIOL 101 and 103 ..................... 4 BIOL 102 and 104 ......................... 4
MTEC 100** Medical Technology ..... 1 METC 101** Medical Technology ..... 1
Total ............................................... 15 Total ............................................... 15

Second Year
First Semester Hrs. Second Semester Hrs.
Electives* ........................................... 9 CHEM 231 Organic Chemistry .......... 4
ENGL 102 Comp. and Rhet. .......... 3 Electives* ............................................ 9
MTEC 200*** Med. Tech. Term. .... 1 METC 201 Basic Med. Tech .......... 1
STAT 211 ........................................... 3 Total ............................................... 14
Total ............................................... 16

* Graduate 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)
First Semester Hrs. Second Semester Hrs.
PATH 300 Intro. to Pathology .......... 3 MICB 327 Microb. Parasitology .......... 2
MTEC 302 Lab Math, Q.C., Cmtrs. ... 2 MICB 323 Microbiology ................... 5
PATH 320 Basic Clinical Biochem.... 3 PATH 340 Intro. to Hematology ....... 3
PATH 380 Intro. to Immunology..... 1 MTEC 470 Clinical Microscopy .......... 1
PATH 303 Laboratory Applications .. 1 MTEC 381 Research, Ed. Meth.* ...... 2
Total ............................................... 14 MTEC 329 Basic Clin. Chemistry ...... 1
Total ............................................... 15

*Writing course
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>2</td>
</tr>
<tr>
<td>MTEC 421 Immunohematology and Blood Banking Laboratory</td>
<td>5</td>
</tr>
<tr>
<td>MTEC 430 Clinical Chemistry</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 431 Clinical Chemistry Laboratory</td>
<td>5</td>
</tr>
<tr>
<td>MTEC 440 Clinical Hematology</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 441 Clinical Hematology Laboratory</td>
<td>5</td>
</tr>
<tr>
<td>MTEC 450 Clinical Microbiology</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 451 Clinical Microbiology Laboratory</td>
<td>5</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 466 Lab Management Practicum</td>
<td>1</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>Total</td>
<td>37</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

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 to the Exercise Physiology program requires at least a 2.75 cumulative grade point average and a grade of C or better in all required courses.

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 293 A Introduction to Exercise Physiology I</td>
<td>1</td>
</tr>
<tr>
<td>EXPH 293 B 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 493 D Strength and Conditioning Methods</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 491 Professional Field Experience</td>
<td>6</td>
</tr>
<tr>
<td>EXPH 493 Exercise Management</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>
<tr>
<td>BIOL 101 &amp; 103 General Biology and Lab**</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 102 &amp; 104 General Biology and Lab**</td>
<td>4</td>
</tr>
<tr>
<td>PSIO 241 or 441 Elementary Physiology</td>
<td>4</td>
</tr>
<tr>
<td>HN&amp;F 171 Introduction to Human Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>STAT 211 Elementary Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>Suggested Electives: BIOL 219 The Living Cell and Biochemistry 339</td>
<td>3</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>3</td>
<td>MATH 128 Trig.</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 101 Intro. to Psychology</td>
<td>6</td>
<td>BIOL 102 &amp; 104</td>
<td>4</td>
</tr>
<tr>
<td>MATH 126 Algebra</td>
<td>3</td>
<td>GEC courses</td>
<td>6</td>
</tr>
<tr>
<td>BIOL 101 &amp; 103</td>
<td>4</td>
<td>ATTR 121 Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 293 Intro. to EXPH I</td>
<td>1</td>
<td>EXPH 293A Intro. to EXPH II</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**Sophomore 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</td>
<td>4</td>
<td>CHEM 116</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 101</td>
<td>4</td>
<td>PHYS 102</td>
<td>4</td>
</tr>
<tr>
<td>GEC course</td>
<td>3</td>
<td>PHYS 241 Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>EXPH 364 Kinesiology</td>
<td>3</td>
<td>CHPR 172 First Aid &amp; Em. Care</td>
<td>2</td>
</tr>
<tr>
<td>ENGL 102</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPH 365 Exercise Physiology I</td>
<td>3</td>
<td>CHEM 231 Organic Chem. Brief</td>
<td>4</td>
</tr>
<tr>
<td>EXPH 368 Lab Tech. &amp; Methods I</td>
<td>3</td>
<td>EXPH 493D Strength/Cond. Meth</td>
<td>3</td>
</tr>
<tr>
<td>ATTR 219 Anatomy</td>
<td>3</td>
<td>HN&amp;F 171 Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 241 Human Growth &amp; Dev.</td>
<td>6</td>
<td>EXPH 370 Scientific Writing</td>
<td>3</td>
</tr>
<tr>
<td>GEC course</td>
<td>3</td>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPH 491 Prof. Field Exp</td>
<td>3</td>
<td>EXPH 491 Prof. Field Exp</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 496 Senior Thesis</td>
<td>3</td>
<td>EXPH 493 Exercise Management</td>
<td>3</td>
</tr>
<tr>
<td>STAT 211</td>
<td>3</td>
<td>GEC course</td>
<td>3</td>
</tr>
<tr>
<td>Electives (e.g., Rsch. methods)</td>
<td>3</td>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

(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 continue 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.nbcot.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>
<tr>
<td>PHYS 101</td>
<td>4</td>
</tr>
<tr>
<td>STAT 211</td>
<td>3</td>
</tr>
<tr>
<td>COMM 100</td>
<td>1</td>
</tr>
<tr>
<td>COMM 102</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
</tr>
</tbody>
</table>

Note: Physiology will become an official prerequisite course; therefore, it is strongly recommended that applicants do take physiology prior to starting the occupational therapy program. Students should contact the Division of Occupational Therapy at (304) 293-8828 to obtain information on the specifics of that course.
Recomended Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>PHYS 241 or 441</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 115</td>
<td>4</td>
</tr>
</tbody>
</table>

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 interested in the OTA to OT 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**  
<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTH 300</td>
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</tr>
<tr>
<td>OTH 480</td>
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</tr>
<tr>
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</table>

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSIO 441</td>
<td>4</td>
</tr>
<tr>
<td>OTH 301</td>
<td>3</td>
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<tr>
<td>OTH 302</td>
<td>2</td>
</tr>
<tr>
<td>OTH 303</td>
<td>2</td>
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<tr>
<td>OTH 304</td>
<td>4</td>
</tr>
<tr>
<td>OTH 306</td>
<td>4</td>
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<table>
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</thead>
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<tr>
<td>OTH 308</td>
<td>4</td>
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<td>OTH 321</td>
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<td>OTH 360</td>
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</tr>
<tr>
<td>OTH 406</td>
<td>3</td>
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<td>OTH 480</td>
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### Senior Year

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<tbody>
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<td>OTH 401</td>
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<td>OTH 417</td>
<td>3</td>
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<tr>
<td>OTH 430</td>
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<td>OTH 435</td>
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<td>OTH 480</td>
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<td>OTH 493</td>
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<td>OTH 497</td>
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<table>
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<td>OTH 416</td>
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<tr>
<td>OTH 419</td>
<td>3</td>
</tr>
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<td>OTH 432</td>
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### Graduate Year

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<tr>
<td>OTH 500</td>
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<td>OTH 503</td>
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<td>OTH 505</td>
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<tr>
<td>OTH 520</td>
<td>3</td>
</tr>
<tr>
<td>OTH 551</td>
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<tr>
<td>OTH 697</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
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</thead>
<tbody>
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</tr>
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<td>OTH 550</td>
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<tr>
<td>OTH 697</td>
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<tr>
<td><strong>Weeks 5–16</strong></td>
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<tr>
<td>OTH 480</td>
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<tr>
<td>OTH 640</td>
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<tr>
<td><strong>Total</strong></td>
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</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 clients 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 WVU Potomac State College allow students to complete the first two years at those schools. Glenville students complete the program at WVU Tech; WVU Potomac State students complete the program in Morgantown.

Registered nurses can complete the B.S.N. requirements at WVU in Morgantown, at the Charleston division, at WVU Tech, at WVU Parkersburg, or at Glenville State College. 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. All nursing courses in the R.N. to B.S.N. program are Web offerings. 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. and D.S.N. graduate programs in nursing may be obtained from the School of Nursing Web site at 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 Web site 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 our financial aid Web site 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 three 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:

Units (years)

4 English (including courses in grammar, composition, and literature)
3 Social studies (including U.S. history)
3 College preparatory mathematics (algebra I, algebra II, and plane geometry)
2 Laboratory science (biology, chemistry, physics, or other courses with a strong laboratory science orientation)
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 one semester of college coursework with a minimum cumulative GPA of 2.8.

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 Web site. 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>4</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>
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<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

* *MATH 124 or 126 may be waived with an ACT math score of 24 or SAT math score of 560.

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.

Academic Standards and Graduation Requirements

To be in good academic standing, students must:

1. Maintain a cumulative grade point average of 2.8 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 2.8 or better will be placed on probation for one semester. Students on probation who do not raise their cumulative GPA to 2.8 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 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>
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<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>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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**Third Year**

<table>
<thead>
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<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
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<tbody>
<tr>
<td>NSG 322</td>
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<tr>
<td>NSG 325</td>
<td>2</td>
<td>NSG 345</td>
<td>2</td>
</tr>
<tr>
<td>NSG 351</td>
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<td>NSG 356</td>
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<tr>
<td>NSG 355</td>
<td>2</td>
<td>NSG 334</td>
<td>2</td>
</tr>
<tr>
<td>NSG 333W</td>
<td>3</td>
<td>NSG 335</td>
<td>3</td>
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<tr>
<td>STAT 211</td>
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<td>GEC</td>
<td>3</td>
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<tr>
<td>GEC</td>
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**Fourth Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
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<th>Hrs.</th>
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<tbody>
<tr>
<td>NSG 421</td>
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<td><strong>15</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 is dependent on the individual’s academic record and the number of spaces available. Transfer students must have a cumulative GPA of 2.8 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 2.8 on a 4.0 scale.
The following prerequisite courses must be completed with a grade of C or better prior to enrollment:

- English 101 and 102 ........................................ 6 credit hours
- Chemistry ................................................. 3–4 credit hours
- Biology ...................................................... 3–4 credit hours
- Human Anatomy ........................................... 3–4 credit hours
- Human Physiology ......................................... 3–4 credit hours
- Microbiology ............................................... 3–4 credit hours
- Statistics .................................................... 3 credit hours
- Introductory Psychology .................................. 3 credit hours
- Introductory Sociology ..................................... 3 credit hours
- Lifespan Growth and Development ...................... 3 credit hours
- Human Nutrition ........................................... 3 credit hours

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 Web site. 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**

**Summer 1**

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
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<td>NSG 255</td>
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<tr>
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**Fall 1**

<table>
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</thead>
<tbody>
<tr>
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<tr>
<td>NSG 325</td>
<td>2</td>
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<tr>
<td>NSG 334</td>
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<td>NSG 335</td>
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**Spring 1**

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>NSG 333W</td>
<td>3</td>
</tr>
<tr>
<td>NSG 345</td>
<td>2</td>
</tr>
<tr>
<td>NSG 351</td>
<td>2</td>
</tr>
<tr>
<td>NSG 355</td>
<td>2</td>
</tr>
<tr>
<td>NSG 356</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

**Summer 2**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 421</td>
<td>3</td>
</tr>
<tr>
<td>NSG 423</td>
<td>2</td>
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<tr>
<td>NSG 425</td>
<td>6</td>
</tr>
<tr>
<td>NSG 476</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**Fall 2**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 441</td>
<td>3</td>
</tr>
<tr>
<td>NSG 442</td>
<td>2</td>
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<tr>
<td>NSG 445</td>
<td>5</td>
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<tr>
<td>NSG 455</td>
<td>1</td>
</tr>
<tr>
<td>NSG 486</td>
<td>1</td>
</tr>
<tr>
<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></th>
<th>Fall First Semester</th>
<th>Hrs.</th>
<th>Spring Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 333W</td>
<td>NSG 433</td>
<td>3</td>
<td>NSG 433</td>
<td>3</td>
</tr>
<tr>
<td>NSG 340</td>
<td>NSG 434</td>
<td>4</td>
<td>NSG 434</td>
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<tr>
<td>NSG 361</td>
<td>NSG 476</td>
<td>3</td>
<td>Total</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer I (12 wks.)</td>
<td>Third Semester</td>
<td>Hrs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSG 441*</td>
<td>NSG 445*</td>
<td>3</td>
<td>NSG 445*</td>
<td>5</td>
</tr>
<tr>
<td>NSG 455*</td>
<td></td>
<td>1</td>
<td>Total</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></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 theses 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](http://www.hsc.wvu.edu/son).
School of Pharmacy
Patricia A. Chase, Ph.D., Dean
Mary K. Stamatakis, Pharm.D., Associate Dean for Academic Programs
W. Clarke Ridgway, B.S., Assistant Dean for Student Services
Patrick S. Callery, Ph.D., Assistant Dean for Research and Graduate Programs
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 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>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)</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 (4)</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>Electives*</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69–71</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Electives must satisfy the University General Education Curriculum (GEC) Requirements.

A course in public speaking is recommended.
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 2005–06 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 Web site, 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 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 Web site at www.pcatweb.info.

Interviews are held at the WVU Health Sciences Center in Morgantown, Charleston, and Martinsburg. Interviews 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.
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 School of Physical Education include athletic training, athletic coaching education, physical education/teacher education, sport management, and sport and exercise psychology. The School of Physical Education has available to students two minors in personal training and sport and exercise psychology and an athletic coaching certificate to any student that is not enrolled in the undergraduate athletic coaching education major.

Facilities
Facilities of the School of Physical Education 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, archery range, 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, racquetball courts, 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 or coaching in physical education.

**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 (3–4 hrs.) 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:** PET 228, 233, 349, 350, 359, 361, 370, 451, 477, 483, 485, 487, 488, 489, C&I 491, RDNG 222, SPED 304

**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 or GEOL 101/102 (4 hrs.); and 7 additional hrs. in GEC #2 courses.
- 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, 106, 256, 330, EXPH 365, ACE 103, 357–367, 493A (choose any three), PET 125, 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 following activities: PE 101, 103, 104, 130, 131, 157, 158, 160, 162, 170, 173, 174, 182, 187, 188.
Practicum: ACE 491 (12 hrs.) and 494.
Writing Requirement: ACE 330

Note: Application to the program must be submitted and admission is competitive.

Certification in Athletic Coaching
The required courses for a WVU athletic coaching certification are ATTR 121; ACE 256, ACE 103, 357-367, 493A (choose one or more); SEP 271 or 272; PET 125; and EXPH 365. This certification program is not part of the subject matter specializations approved by the West Virginia Board of Education.

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 101/103 or GEOL 101/102 (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 (these 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 205 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.
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 a athletic training student must first spend time in the prospective athletic training student (PATS) program. In order to gain a basic working knowledge of the athletic training profession, the student must work in the athletic training rooms to see if this is the route that is desired. Before applying to the program, the student must fulfill certain requirements that include:

1. The student must have participated in 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 will attend weekly in-services in the PATS program and 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 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 121 and 122 to be considered a viable candidate.

After all of the requirements have been met, the student will be interviewed in the presence of all full-time faculty/staff athletic trainers and 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. Up to 15 students are accepted annually into the athletic training program. 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 Web site to view these standards: www.wvu.edu/~physed/attrain/wvattr-1.htm.

Once accepted into the athletic training program, the student will have 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 and proficiencies.
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 121, 122, 218, 219, 220, 221, 222, 281, 282, 301, 302, 321, 323, 324, 325, 326, 327, 332, 403, 404, 424, 426

Upon graduating from the athletic training major, students are eligible to take the National Athletic Trainers' Association 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. In addition, students upon graduation may pursue additional education by obtaining a master's degree in athletic training or a related field of study.
Special Programs

Undergraduate Certificate in Gerontology
WVU Center on Aging

The Undergraduate Certificate in Gerontology is pursued concurrently with any undergraduate major. The certificate affords students an opportunity to explore the basic biological, psychological, and sociological processes of aging, their effect on the needs of older people, and the impact of social policies related to human aging. Additionally, through a required field experience, students develop basic skills for effective practice with older adults. An understanding of the unique problems and needs of older adults in Appalachia and other rural areas is emphasized.

Certificate Requirements
The undergraduate certificate requires 18 credits of coursework and field experience as detailed:

Required courses
- MDS 212 Introduction to Gerontology**—3 credit hours
- MDS 312 Issues in Gerontology**—3 credit hours
- GERO 491 Professional Gerontology Field Experience*—3 credit hours

Recommended Electives
- GERO 412 Public Policy of Aging—3 credit hours
- GERO 410 Rural Gerontology—3 credit hours
- GERO 693 Aging Women and Cultural Issues**—3 credit hours
- GERO 495 Independent Study*—3 credit hours

* Permission from instructor required prior to enrollment.
** This course number may change. Check with your advisor.

Fieldwork credits for the undergraduate program are earned in 491 Professional Gerontology Field Experience or in practicum courses in departments appropriate to the student’s major. Gerontology professors assist in identifying sites for fieldwork experience with older persons and/or a relevant agency and in the supervision of the student’s work. A 3.0 grade point average must be maintained in all certificate coursework.

Students who satisfactorily complete the requirements of the program will receive a Certificate of Gerontology at the time they receive their bachelor’s degree, and the award will be noted on each recipient’s University transcript.

Upon satisfactory completion of the requirements of the program, a Certificate in Gerontology will be awarded by the Center on Aging.

Further information, assistance in academic program planning in multidisciplinary gerontology, and registration forms may be obtained by contacting: Nancy Merrifield, WVU Center on Aging, PO Box 9127, Morgantown, WV 26506-9127; telephone (304)293-6771.

Dual Degrees in Business and Foreign Languages
The coordinated dual-degree programs in business and foreign language provide global career opportunities for students seeking the B.S. in business administration and the B.A. with a major in foreign languages.

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.

**Program Overview**

**Non-Business and Economics Courses**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Hrs.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>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>2: Math and Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Math 124, 126, or 129 with a grade of C or better</em></td>
<td>3–4</td>
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<tr>
<td>Computer Science 101</td>
<td>4</td>
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<tr>
<td>Natural Science</td>
<td>3–4</td>
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<tr>
<td>Natural Science (w/ Lab)</td>
<td>4</td>
<td></td>
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<tr>
<td>3: The Past &amp; Its Traditions</td>
<td>3</td>
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<tr>
<td>4: Contemporary Society</td>
<td>3</td>
<td></td>
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<tr>
<td>5: Artistic Expression</td>
<td>3</td>
<td></td>
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<tr>
<td>6: The Individual in Society</td>
<td>3</td>
<td></td>
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<tr>
<td>University 101</td>
<td>1</td>
<td></td>
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<tr>
<td>7: American Cultural Diversity</td>
<td>3</td>
<td></td>
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<tr>
<td>8: Western Culture</td>
<td>3</td>
<td></td>
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<tr>
<td>9: Non-Western Culture</td>
<td>3</td>
<td></td>
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<tr>
<td>College Math Requirement: Math 150, 155, or 156</td>
<td>3–4</td>
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<tr>
<td>Psychology 101 and Sociology 101 are required for the business administration degree and meet specific GEC Objectives.</td>
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<tr>
<td>Foreign Language 203 and 204 meet specific GEC Objectives.</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td><strong>45–48</strong></td>
<td></td>
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</tbody>
</table>
### Required Business Core Courses

**Sophomore year**
- ACCT 201 and 202 *Principles* ......................................................... 6
- ECON 201 and 202 *Principles* ....................................................... 6
- ECON 225 *Elementary Business and Economics Statistics* ............ 3

**Junior/Senior 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
- BCOR 460 *Contemporary Business Strategy* .................................... 3

**Subtotal** ............................................................................................................ 37

**Required Major Core Courses**
- *(Varies by major; see major requirements under College of B&E)* ........ 27–30

**Foreign Language Requirements**
- LING 311 ............................................................................................... 3
- Foreign Language 301 ............................................................................. 3
- Foreign Language 302 ............................................................................. 3
- Foreign Language 303 ............................................................................. 3
- Foreign Language 304 ............................................................................. 3
- Foreign Language required culture course ............................................ 3
- FRCH 431 or FRCH 432
- GER 341 or GER 441
- SPAN 330 or SPAN 340
- Foreign Language required literature course ......................................... 3
- FRCH 331 or FRCH 332
- GER 331 or GER 332
- SPAN 331 or SPAN 332 or
- SPAN 341 or SPAN 342
- Foreign Language electives in the major ............................................. 9
- Foreign Language capstone experience (PR: 21 hrs. of coursework in the foreign language major beyond the intermediate level (204 or the equivalent) ........................................ 3

**Subtotal** ............................................................................................................ 33

**Internship (or substitution course work)** ................................................. 10–16

**Minimum total hours for the degree** ......................................................... 158

*Although the College of Business and Economics requires MATH 124 and 150, students are encouraged to substitute MATH 155 and 156 or MATH 129 and 155 for MATH 124 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 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 sessions before the start of the fall semester. French, German, and Spanish 100 and 200 may be taken in summer sessions I and II. Credit is also available for semesters three and four through departmentally sponsored programs in France, Austria, Mexico, and Spain.

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: Associate 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

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/coordinating. 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 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 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. 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.

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 91 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, scholarships, 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 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 at http://www.orau.gov/orise.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.

Professional Internship Program
Program appointment periods that alternate with terms of full-time academic study at the students’ home institutions afford students opportunities to apply the theories and methods learned in the classroom in a research environment under the guidance of a research advisor.

Graduate Internship Program
Internships at federal laboratories relate to the student’s major and career goals, provide opportunities to apply theories and methods learned in the classroom, and introduce research areas for consideration as possible thesis or dissertation topics.

Post-Graduate Research Program
Research appointments are available for recent master’s and doctoral degree recipients. Up to two years of support for collaborative research at federal laboratories is provided.

Faculty
Faculty members of WVU, under the ORAU Faculty Research Participation Program, can go to a Department of Energy facility for varying periods up to three months for advanced study and research. It is also possible to combine a sabbatical with a longer appointment. Part-time appointments during the academic year are also available at certain laboratories.
Stipends
Student stipends are at fixed rates that change from time to time. Faculty stipends are individually negotiated, based upon the current University salary.

Contacts
For more information contact ORAU Council Member, WVU NRCCE, at (304) 293-2867; or ORAU Corporate Secretary at (615) 576-3306; online at www.orau.org.

ROTC
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 are under GEC 4—Issues of contemporary Society, GEC 6—The Individual in Society, and GEC 8—Western Culture.

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 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 30 December 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. 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 six weeks of the summer between your junior and senior years attending an advanced leadership course at Fort Lewis, Washington. At this course, students receive intensive training in tactics, physical fitness, land navigation, obstacle course, and repelling. 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 stipend allowance of $350–$400 a month during the school year.

**Leadership Laboratory**
Leadership laboratory is two hours per week every Thursday afternoon throughout the student’s enrollment in AROTC. 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, repelling, rifle marksmanship, and career opportunities.
Military Science Minor

Students enrolled in the AROTC program, are offered the opportunity to take an independent study course in order to receive a military science minor.

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 ROTC basic leader’s training course 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 where 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).

Additionally, if a student is currently in the national guard, army reserve, a veteran from any service, or has high school 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, $250–$400 a month 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 army reserve offers loan repayment and 75 percent tuition assistance.

Information on these programs may be obtained through the professor of military science at (304) 293-2911 ext. 33135. For a detailed overview of Army ROTC, students can call 1-800-USA-ROTC or view online at www.armyrotc.com.

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

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 all tuition and fees up to $20,000 a year. They also provide $900 a year for books and include a $250–$400 per month stipend. Four-year scholarships are normally reserved for high school students. The application process starts by applying online at www.armyrotc.com 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 an Army ROTC scholarship:
1. Be a citizen of the United States.
2. Be between 17 years old at the time of acceptance.
3. Be no older than 32 when commissioned (a four-year extension may be granted for prior service.)
4. Be of good moral character.
5. Exhibit a strong desire to become an army officer.
6. Possess leadership potential to become an effective leader. These include appearance, personality, academic excellence, extracurricular activities, and physical fitness.
7. Be medically qualified by passing a Department of Defense Medical Evaluation Board physical.
8. Must be eligible for a secret security clearance.

**General Education Curriculum (GEC)**

MILS 101, 102, 201, and 202 courses are under GEC 4—Issues of contemporary Society, GEC 6—The Individual in Society, and GEC 8—Western Culture.

**Additional Opportunities**

Students enrolled in the AROTC 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
The University Honors Program provides cohesive, integrated honors courses which apply toward the satisfaction of general education requirements and some requirements for the major.

Admission to the program is by application and is based on ACT or SAT composite standard scores and high school grade point averages or status as a National Merit Semi-Finalist. Admission to the program by enrolled college students is based on grade point average on the first 14 to 34 credit hours of college coursework.

Class sizes are small, affording students an opportunity to participate in individualized, concentrated instruction. A student accepted into the program is expected to enroll in one honors course each semester as a full-time student at WVU, maintaining a grade point average in accordance with the standards established by the University Honors Program. In addition to fulfilling the program’s requirements, honors students fulfill all requirements of the University and major area of concentration. Students enrolled in the Honors Program do not take more courses than other students; such students use the honors courses to fulfill part of the University requirements for graduation.

Honors students enter areas of concentration in which they earn their degrees and fulfill requirements established by the academic areas involved. Diplomas and transcripts indicate both degree earned and the designation of University honors scholar. Certification as University honors scholar is to be completed by the end of the penultimate semester. University honors scholars complete a minimum of 24 hours in designated honors courses.

Students complete the program with an honors thesis. They present the results of the research in a seminar for faculty and other students. In addition, they complete 18 credits of honors courses. Many students choose to be involved in research in their major and they may receive both departmental honors as well as University honors credit for their work. Senior design projects for engineering majors, art portfolios, and theater and music
performance scan be modified to meet the thesis requirements. While honors students are expected to enroll in an honors course each semester, demands of professional programs, etc., may make adjustments necessary, with the advisor’s approval.

Normally, only courses designated as honors courses by the program count toward fulfillment of the Honors Program requirements. However, if a student takes courses judged by the program to be rigorous and challenging enough to qualify as honors courses, the student may petition, in advance, for permission to count the hours as honors hours. In each case, the student must submit a petition for such an exception. Each petition is judged on its own merits.

When a student is accepted into the University Honors Program, continuance depends upon satisfactory progress in hours earned and maintenance of a satisfactory cumulative grade point average as outlined below:

- 1–28 hours earned: 3.2 GPA
- 29–88 hours earned: 3.3 GPA
- 89 hours or more: 3.4 GPA

If a student fails to maintain satisfactory progress toward the degree or to achieve the required minimum cumulative grade point average, the student is placed on probation in the University Honors Program for one semester. If the student has not achieved the required grade point average and/or the number of hours completed at the end of that semester, the student will be dismissed from the University Honors Program. This action does not affect the student’s standing in the University not in the honors program. It does mean that the student will not be designated a University Honors Scholar upon graduation.

WVU Extension Service
http://www.wvu.edu/~exten/

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:
• WVU Extension’s 4-H program builds leaders who have the confidence that comes from learning by doing. Through clubs, special interest programs, camping, school enrichment, child care, and individual study, 4-H reaches more than 56,000 youths and 7,600 adults statewide.

• Diabetes is a major problem in West Virginia. Extension’s Dining with Diabetes is helping families learn how to select, prepare, and enjoy food that supports healthful eating habits. Each year, more than a thousand diabetes cooking school students attend classes in their own communities and learn how to plan and prepare meals that are appealing, tasty, and healthful.

• Thousands of children in rural and low-income communities nourish their bodies and minds through the summertime Energy Express program. A partnership of WVU Extension and state and local organizations, the program helps children build critical reading skills while providing nutritious meals and valuable mentoring.

• The First Impressions program offers West Virginia communities frank, detailed assessments of what works and what doesn’t, as seen through the eyes of strangers. The towns of Grantsville, Grafton, and Logan are using this Extension program to make immediate improvements and guide long-term development.

• Each year, more than 17,500 firefighters and emergency responders throughout West Virginia improve their skills through training offered by WVU’s Fire Service Extension. These programs help fire department personnel meet national certification standards and enhance their ability to protect people and property in their communities.

• More than 100 companies throughout West Virginia look to the Appalachian Hardwood Center at WVU for training and technical assistance. These companies get help in locating markets for finished products and wood residues, developing grading data for sawmills, and identifying and resolving manufacturing problems.

• Helping West Virginia workers stay well and injury-free is the goal of WVU’s Safety and Health Extension. Industrial safety specialists teach employers and their workers how to protect themselves and the public from potential hazards encountered on the job.

• The WVU Extension Service has a long tradition of land stewardship. Each year, more than 9,000 farmers and gardeners seek information on ways to make their land more productive by having their soil laboratory-tested at WVU. Extension agents interpret the results and provide site-specific recommendations for fertility management.

• WVU’s International Extension programs open a window to the world. Through international exchange programs, educational camps, and development projects and research studies abroad, West Virginians are learning how to cross culture and language barriers to form productive, rewarding partnerships in the global village.

Extension operates the University’s special-mission campus, which is WVU Jackson’s Mill State 4-H Camp and Center for Lifelong Learning. Located near Weston, WVU Jackson’s Mill annually draws more than 110,000 guests, who enjoy the 525-acre retreat facility’s meeting, camping, and heritage facilities.

WVU Extension programs are financed via a variety of funding combinations: federal appropriations and grants; state appropriations and grants; county commission, county school board, and other local governmental appropriations; and private grants.

Graduate and undergraduate internships, work-study appointments, and volunteer service positions may be available on the Morgantown campus and in any of the 55 counties. Program priorities and funding determine the duration of appointments during regular semester and summer sessions.

For more information, contact the WVU Extension Service at (304) 293-5691; or write to 808 Knapp Hall, P.O. Box 6031, Morgantown WV 26506-6031.
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/Lower 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.

293. Special Topics. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


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

**Accounting (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.

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.

293 A-Z. **Special Topics.** 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

321. **Introduction to Accounting Systems.** 3 Hr. PR: ACCT 202 and admission to the College of BandE. Accounting software for record keeping, financial analysis, and accounting policy evaluation, with emphasis on the accounting cycle.

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.

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.

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.

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.

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.

417. **Advanced Accounting Problems.** 3 Hr.

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.

431. **Cost Management.** 3 Hr. PR: ACCT 202. Strategic cost management concepts and techniques used for decision making, control, and product and service costing.

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.

433. **Advanced Managerial Accounting.** 3 Hr. PR: ACCT 331 OR ACCT 431.

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.

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.


452. **Auditing Practice.** 3 Hr. PR or CONC: ACCT 451.

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.

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.

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

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.

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.)
Agricultural and Extension Education (AGEE)

101. Global Food and Agricultural Industry. I, II. 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.

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.

African Studies

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.

240. Seminar Africana Studies. 3 hr. PR: ASP 220. Focus on selected aspects of Africana experience. Required for completion of minor in Africana Studies.

Advertising (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.

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.

293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. Typography Printing Process. 3 Hr.

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.)

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.

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.

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.

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)

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.

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.)

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Course will be graded Pass/Fail.)

491. Professional Field Experience. 1-8 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.)

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study, or research.
220. **Group Organization and Leadership.** I, II, S. 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.

250. **Shop Theory and Methods.** I, II, S. 4 Hr. Six areas of basic shop work: carpentry, cold metal work, hot metal work (forge, electric and gas welding), sheet metal (soldering, forming, cutting, riveting), tool care, and plumbing. (1 hr. rec., 6 hr. lab.)

421. **Agricultural and Natural Resource Communications.** I, II, S. 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.)

430. **Methods of Teaching Agriculture.** I. 3 Hr. PR: Consent. Organization and preparation for teaching agriculture in middle and secondary schools.

431. **Adult Education in Agriculture and Natural Resources.** 2 Hr. PR: Consent. Planning and preparation for teaching adult classes and advising agricultural organizations.


450. **Farm Structures.** II. 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.)

451. **Agricultural Engines.** I, II, S. 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.)

452. **Advanced Farm Machinery.** I. 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.)

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.)

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.)

455. **Advanced Farm Mechanics.** 3 Hr.

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.)

461. **Waste Management-Composting.** I. 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.

488. **Professional Agricultural Internship.** 1-12 Hr. PR: Consent.

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.

493 A-Z. **Special Topics.** I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. **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.

496. **Senior Thesis.** I, II, S. 1-3 Hr. PR: Consent.

498. **Honors.** I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

**Agricultural and Resource Economics (ARE)**

110. **Agribusiness Accounting.** II. 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.)

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.

187. **Energy Resource Economics.** I, II, S. 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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
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<tbody>
<tr>
<td>188</td>
<td>National Energy Policy</td>
<td>II. 3 Hr.</td>
<td>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.</td>
</tr>
<tr>
<td>199</td>
<td>Orientation to Agriculture and Resource Economics</td>
<td>1 Hr.</td>
<td>Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.</td>
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<tr>
<td>201</td>
<td>Principles of Resource and Energy</td>
<td>II. 3 Hr.</td>
<td>PR: Third-year standing. Analyzes problems important or peculiar to mineral industry economics; exhaustion, externality, risks, production cycle, industry structure, pricing, role of minerals in development and trade, resource planning. Energy, metals, industrial minerals. (3 hr. lec.)</td>
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<tr>
<td>204</td>
<td>Agribusiness Management</td>
<td>II. 3 Hr.</td>
<td>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.</td>
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<tr>
<td>220</td>
<td>Introductory Environmental and Resource Economics</td>
<td>II. 3 Hr.</td>
<td>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.</td>
</tr>
<tr>
<td>293</td>
<td>Special Topics</td>
<td>I, II, S. 1-6 Hr.</td>
<td>PR: Consent. Investigation of topics not covered in regularly scheduled courses.</td>
</tr>
<tr>
<td>370</td>
<td>Recreation/Tourism Economics</td>
<td>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.</td>
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<tr>
<td>382</td>
<td>Agricultural and Natural Resources Law</td>
<td>I. 3 Hr.</td>
<td>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.</td>
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<tr>
<td>401</td>
<td>Applied Demand Analysis</td>
<td>II. 3 Hr.</td>
<td>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.</td>
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<tr>
<td>402</td>
<td>Applied Production Economics</td>
<td>I. 3 Hr.</td>
<td>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.</td>
</tr>
<tr>
<td>406</td>
<td>Applied Quantitative Methods</td>
<td>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.</td>
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<tr>
<td>410</td>
<td>Environmental and Resource Economics</td>
<td>I. 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.</td>
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<td>411</td>
<td>Rural Economic Development</td>
<td>I. 3 Hr.</td>
<td>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.</td>
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<tr>
<td>413</td>
<td>Economic Development</td>
<td>I, II. 3 Hr. PR: ECON 201 and ECON 202. The problems, changes and principal policy issues faced by nonindustrialized countries.</td>
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<td>420</td>
<td>Agricultural Cooperatives</td>
<td>I. 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. (Offered in fall of odd years.)</td>
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<tr>
<td>421</td>
<td>4 Hr. PR: ARE 110 and ARE 204 or consent.</td>
<td>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.</td>
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<tr>
<td>431</td>
<td>Marketing Agricultural Products</td>
<td>II. 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.</td>
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<tr>
<td>435</td>
<td>Marketing Livestock Products</td>
<td>I. 3 Hr. Livestock marketing practices and policies. Supply and demand, livestock price cycles, grading, marketing alternatives, processing and retailing. Economic analysis of alternatives, current issues, and trends. (Offered in fall of even years.)</td>
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<tr>
<td>440</td>
<td>Futures Markets and Commodity Prices</td>
<td>I. 3 Hr. Analysis of price-making forces which operate in the market place; emphasis on major agricultural and mineral commodity and futures markets.</td>
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<td>445</td>
<td>Energy Economics</td>
<td>II. 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.</td>
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<tr>
<td>450</td>
<td>Agriculture, Environmental and Resource Policy</td>
<td>II. 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.</td>
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<td>461</td>
<td>Agribusiness Finance</td>
<td>II. 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.</td>
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<td>490</td>
<td>Teaching Practicum</td>
<td>I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.</td>
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<tr>
<td>491</td>
<td>Professional Field Experience</td>
<td>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.</td>
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I. 3 Hr. PR: AGRN 125 or Consent. Identification of morphological characteristics and taxonomy of soil for land use planning. (1 hr. lec., 3 hr. lab.) (Offered in fall of odd years.)

III. 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 roadsides. Associating differential plant responses with soil, climatic and biotic factors. (3 hr. lec.) (Offered in fall of odd years.)

IV. 1 Hr. PR: Consent. Field study of soils for classification and land use evaluation. 3 hr. lab. (May be repeated for max. 3 credits.)

V. 3 Hr. PR: AGRN 202 and AGRN 203 and CHEM 116 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.

VI. 1 Hr. PR or CONC: AGRN 202 or Consent. Regional campus concurrent.

VII. 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 roadsides. Associating differential plant responses with soil, climatic and biotic factors. (3 hr. lec.) (Offered in fall of odd years.)

VIII. 1 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.)

IX. 1 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.) (Offered in fall of odd years.)
417. **Soil Genesis and Classification.** I. 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.) (Offered in fall of even years.)

420. **Soil Microbiology.** I. 3 Hr. PR: ENVM 341. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of micro-organisms in soil. (Offered in fall of even years. Also listed as ENVM 420 and ENVP 420.)

425. **Environmental Soil Management.** II. 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 465.)

430. **Soil Physics.** II. 3 Hr. PR: AGRN 202 and AGRN 203. Physical properties of soils; water and air relationships and their influence on soil productivity. (Offered in spring of even years.)

451. **Principles of Weed Control.** I. 3 Hr: PLSC 206 and AGRN 202 and AGRN 203 or consent. Fundamental principles of weed science. Identification of common weeds, biology, ecology and control measures. (Offered in fall of odd years.) (Also listed as ENVP 451.)

452. **Grain and Special Crops.** II. 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. (Offered in spring of even years.)

454. **Forage Crops.** I. 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.)

455. **Reclamation of Disturbed Soils.** II. 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.)

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

490. **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.

493. **Special Topics.** I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

496. **Senior Thesis.** I, II, S. 1-3 Hr. PR: Consent.

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 Nutrition (ANNU)**

260. **Animal Nutrition.** II. 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.

361. **Applied Nutrition 1.** 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.)

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.)

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.

493. **Special Topics.** I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

496. **Senior Thesis.** I, II, S. 1-3 Hr. PR: Consent.

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 Physiology (ANPH)**

301. **Introduction to Animal Physiology.** I. 3 Hr. PR: BIOL 191 and BIOL 102 or Consent. The function and regulation of the principal systems of the animal body.

400. **Growth and Lactation Physiology.** II. 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.

405. **Animal Physiology Laboratory.** I. 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.)

424. **Physiology of Reproduction.** II. 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.

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. (Offered in spring of odd years.)

Courses
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.) (Offered in spring of even years.)

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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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 Production (ANPR)

336. Dairy Cattle History and Selection. II. 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.)

338. Horse, Livestock, Poultry Evaluation. II. 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.)

339. Advanced Evaluation of Animal Products. I. 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 graded. Can be repeated up to a maximum of 4 credits. (3 hr. lab./per hr. credit.)

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.)

341. Beef Production. I. 3 Hr. PR: ANNU 260. Applying the principles of breeding, nutrition, physiology, and economics for the production of beef cattle.

343. Beef Production Laboratory. I. 1 Hr. COREQ: ANPR 341. Experiences in beef cattle management, including feeding, handling, health programs and farm visits. (3 hr. lab.)

344. Light Horse Science. II. 3 Hr. PR: ANNU 260. Application of breeding, nutrition, physiology, and pathology to production and management of light horses.

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 farm. (Offered in spring of even years.)

353. Pork Production. 3 Hr. PR: ANNU 260. Physiological and economical bases of pork production. (2 hr. lec., 3 hr. lab.) (Offered in fall of odd years.)

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. (Offered in spring of even years.)

367. Poultry Production. I. 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.

369. Poultry Production Laboratory. I. 1 Hr. COREQ: ANPR 367. Laboratory study of poultry production systems, related feed manufacturing and product processing practices. (3 hr. lab.)

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.


496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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 (AandVS)

105. Professional Orientation. I. 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.)

150. Introduction to Animal Science. II. 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.

180. Assigned Topics. I, II, S. 1-4 Hr. per semester. To be eligible to register in AandVS 180, the student must: (1) be in good standing, (2) obtain approval of the instructor supervising the topics, and (3) approval from the instructor assigned the course responsibility.

251. Principles of Animal Science. I. 4 Hr. A comparative study of the production of meat, milk, eggs and wool. Nutrition, physiological genetics, hygiene and physical environment, and economics are discussed as bases for sound managerial decisions. (1 hr. lab.)
275. Companion Animal Science. I. 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.


402. Values and Ethics. 3 Hr. PR: Senior standing or Consent. Current ethical aspects in agriculture and forestry and their impact on societal values.


480 A-Z. Assigned Topics. I, II, S. 1-4 Hr. To be eligible to register in AandVS 480, the student must: (1) be in good standing, (2) obtain approval of the instructor supervising the topic, and (3) approval from the instructor assigned the course responsibility.

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.


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


496. Senior Thesis. 1-3 Hr. PR: Consent.

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

Arabic (ARBC)

101. Elementary Modern Standard Arabic 1. 3 Hr.


204. Intermediate Modern Standard Arabic 2. 3 Hr. PR: ARBC 203 or consent. Cont. ARBC 203.

293. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Art (ART)

101. Appreciation of Visual Arts. 3 Hr. The course encompasses the study of outstanding works of the visual arts from past times to the present: (1) sources of the creative impulse, and (2) relationship of art to the civilization producing it.

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.

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.

105. Survey of Art History 1. 3 Hr. The course examines the history of the visual arts in world cultures from prehistoric periods to the fourteenth century.

106. 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.

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.

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.

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.
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.

121. **3D 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.

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.

199. **Orientation to Art.** 1 Hr. Required for all studio art majors. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities. Faculty assists students in establishing career goals. Course includes a mandatory portfolio review of all first-year art majors.

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.)

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.)

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 which convincingly express light, color and form integral to the medium.

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.

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.

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.

226. **Introduction to Sculpture.** 3 Hr. PR: ART 111 and ART 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.

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, plasticine and figure modeling will aid the students in developing problem solving skills related to aesthetics and formal sculptural issues.

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.

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.

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.

233. **Photo Design.** 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.

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.

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.

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.

245. **Greek and Roman.** I, II. 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.

246. **Art History: Medieval.** 3 Hr. PR: ART 105 and ART 106. 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 portable arts will be included.

247. **Art History: Northern Renaissance.** 3 Hr. PR: ART 105 and ART 106. 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.

248. **Art History: Italian Renaissance.** 3 Hr. PR: ART 105 and ART 106. Early Renaissance through Mannerism. The course will emphasize both the historical context and theoretical foundation of 15th and 16th-century Italian art and architecture.
249. Art History: Baroque. 3 Hr. PR: ART 105 and ART 106. 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.

250. Art History: Nineteenth Century. 3 Hr. PR: ART 105 and ART 106. 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.

252. Art History: American. 3 Hr. PR: ART 105 and ART 106. 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.

254. Art Theory. 3 Hr. The course will examine development and tradition of the literature of art theory and its relationship to artistic practice.

255. 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 with concentration on 20th century work. Critical theories are emphasized.

264. Introduction to Art Education. 3 Hr. PR: ART 105 and ART 106 and ART 111 and ART 112 and ART 121 and ART 122 and 6-hours studio. Contemporary art education and resources that support its practices. Students also interact with experienced K-12 art specialists and their various grade levels.

265. Art Education: Elementary. 4 Hr. PR: ART 264. 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.

266. Art Education: Secondary. 4 Hr. PR: ART 264. 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 course-work and practicum experiences in the schools. Content is based on the national standards.

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 us of various software, focuses on sound, technical foundation and esthetic proficiency in these media.

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.

293 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

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 contemporary, historical and contemporary painting issues in oil, acrylic and related media. (May be repeated for credit.)

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.)

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.)

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.)

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.)

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.)

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.

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.)

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.

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.)

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.

350. Art History: Nineteenth Century. 3 Hr. PR: ART 105 and ART 106. 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.
351. Art History: Modern. 3 Hr. PR: ART 105 and ART 106. 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.

352. Art History: American. 3 Hr. PR: ART 105 and ART 106. 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.

353. Art History: Contemporary. 3 Hr. PR: ART 105 and ART 106. 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 texts is expected.

355. Art History: 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 with concentration on 20th century work. Critical theories are emphasized.

357. Modern Art Theory. 3 Hr. PR: ART 105 and ART 106 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.

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.

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.

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.

401. Art History: Senior Project. 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. Contractual course.

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.

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.)

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.

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.

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.

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.

491 A-Z. Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Prereq: consent. Faculty supervised study of topics not available through regular course offerings. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495 A-Z. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

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.

Astronomy (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.

290. Teaching Practicum. 1-3 Hr.

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.

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.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. Senior Thesis. 1-3 Hr. PR: Consent.

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)

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.

101. Wrestling Methods. 3 Hr. An in-depth look at the various methods and weight categories of wrestling.

102. Coaching Education. 3 Hr. An in-depth look into the various aspects of coaching education.

103. Coaching Special Olympics. 3 Hr. An in-depth look into the techniques and methods used in coaching special olympics.

104. CPR/First Aid for Coaches. 3 Hr. Certification and practicum for CPR and first aid for all coaches.

105. Nutrition for Coaches. 3 Hr. General nutrition and dietary requirements to aid coaches and their athletes.

106. Introduction to Physical Education. 3 Hr. A general overview into the teaching/methodologies, etc. in a physical education/coaching education environment.

107. Coaching Education Administration. 3 Hr. This course examines the fundamental areas necessary to be knowledgeable about administering athletic programs.

168. Sport Officiating. 2 Hr. Study of officiating.

256. Principles and Problems of Coaching. 3 Hr. Designed to students with principles and problems of interscholastic athletic coaching.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

367. Theories of Coaching Football. 2 Hr. Designed to give students insights into the theories and practices involved in coaching football.

368. Sport Movement Analysis. 3 Hr. This course is designed to introduce a prospective coach to the principles of human movement.


460. Fitness Management. 3 Hr. Provide content knowledge and practical experiences in health and fitness facility management and operation. ACE certification exam prep.
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.

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.

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.

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.

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.

474. **Methods of Aquatic Instruction.** 3 Hr. PR: ACE 460 and ACE 462. This course prepares students to sit for the AEA exam. Upon its completion, students will be certified to teach aquatic aerobics.

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.

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.

493 A-Z. **Special Topics.** 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. **Seminar.** 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.

**Athletic Training (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.

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.

218. **Gross Anatomy Lab.** 1 Hr. Analysis of gross anatomy and systems of the trunk and extremities; cadaver laboratory experience.

219. **Gross Anatomy.** 3 Hr. Designed to provide an overview of body systems and gross anatomy of the trunk and extremities.

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.

221. **Advanced Athletic Training I.** 3 Hr. PR: Consent. Designed to provide an in-depth analysis of life-threatening situations and internal injuries associated with athletics.

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.

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.

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.

293 A-Z. **Special Topics.** 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

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.

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.

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.

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.

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.

327. **Biomechanics.** 3 Hr. PR: Consent. Designed to provide in-depth study of normal and abnormal biomechanics of the lower extremity and spine.
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.

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.

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.

424. Athletic Training Senior Seminar. 3 Hr. PR: Consent. Practical application of athletic training techniques.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Bibliography (BIBY)

490. Teaching Practicum. 1-3 hr.

492. Directed Study. 1-6 hr. Directed study, reading, and/or research.

493. Special Topics. 1-6 hr. A study of contemporary topics selected from recent developments in the field.

494. Seminar. 1-6 hr. Seminars arranged for advanced graduate students.

495. Independent Study. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.

Biochemistry (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.)

492. Directed Study. I, II, S. 1-6 Hr. (May be repeated for a maximum of 12 hr.) PR: Consent.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. Senior Thesis. 1-3 Hr. PR: Consent.

497. Research. 1-6 Hr. Independent research projects.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Biology (BIOL)


103. General Biology Laboratory. I, II. S. 1 Hr. Coreq. BIOL 104. Experiments in biology: genetics and evolution; reproduction, growth, and development of cells, organisms, and populations.


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.

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.

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.

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.

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.
122. Human Sexuality. I, 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.

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.

221. Ecology and Evolution. 3 Hr. PR: BIOL 219. Basic concepts in evolution and ecology, including Darwin’s theory of natural selection, modern population genetics, speciation, population growth and regulation, demography, community ecology, ecosystem dynamics, and human ecology.


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.

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.


313. Molecular Basis of Cellular Growth. II. 3 hrs. 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 stemcells.

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.

317. Developmental Biology Laboratory. II. 1 hr. PR: BIOL 219. Coreq: BIOL 216. Experimental approaches to the genetic analysis of the mechanisms by which multicellular organisms develop from single cells.

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.

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.

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.


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.)

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.

340. Invertebrate Zoology. II. 4 Hr. PR: BIOL 219 and 221. The evolution of animals without vertebral columns. The laboratory includes field trips, including one that takes an entire weekend. (Dissection kit required.)

341. Ichthyology. II. 4 hrs. 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).

348. Basic Neurobiology. 3 hrs. PR: BIOL 219. An introduction to neuroscience, including basic neuroanatomy, neurophysiology, and the relationship between the central nervous system, physiology, and behavior.

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.

351. Plant Diversity. I. 4 hrs. PR: (BIOL 101, 102, 103, and 104) and 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.

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.

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.

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.
### Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 115</td>
<td>Principles of Evolution</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 221</td>
<td>Cell and Molecular Biology Methods</td>
<td></td>
<td>Introduction to the theory, application, ethics, and economics of biotechnologies.</td>
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<tr>
<td>BIOL 337</td>
<td>General Animal Physiology</td>
<td>BIOL 221</td>
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<tr>
<td>BIOL 348</td>
<td>Comparative Animal Anatomy</td>
<td>BIOL 221</td>
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<tr>
<td>BIOL 362</td>
<td>Plant Geography</td>
<td>BIOL 221</td>
<td>World-wide distribution patterns of plants and factors related to these distributions-including dispersal. Limiting factors, climate, isolation, evolutionary history, plate tectonics, pliocene glaciations, and human activities. Plant communities and soils of polar, temperate, and tropical biomes are discussed.</td>
</tr>
<tr>
<td>WMAN 224</td>
<td>Undergraduate Research</td>
<td></td>
<td>Writing consent of chair and a 2.7 grade-point average in biology. Individual laboratory or field experiments supervised by a faculty member.</td>
</tr>
<tr>
<td>BIOL 410</td>
<td>Cell and Molecular Endocrinology</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>
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<td>BIOL 411</td>
<td>Molecular Endocrinology Laboratory</td>
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<tr>
<td>BIOL 412</td>
<td>Cell Structure and Function</td>
<td>BIOL 221</td>
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<tr>
<td>BIOL 413</td>
<td>Comparative Anatomy</td>
<td>BIOL 221</td>
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<tr>
<td>BIOL 414</td>
<td>Vertebrate Microanatomy</td>
<td>BIOL 221</td>
<td>Structural and functional approach to the study of tissues and organs of vertebrates.</td>
</tr>
<tr>
<td>BIOL 436</td>
<td>Principles of Evolution</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>
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<tr>
<td>CHEM 235</td>
<td>Cell and Molecular Biology Methods</td>
<td></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>AGBI 410</td>
<td>Plant Development</td>
<td>BIOL 221</td>
<td>World-wide distribution patterns of plants and factors related to these distributions-including dispersal. Limiting factors, climate, isolation, evolutionary history, plate tectonics, pliocene glaciations, and human activities. Plant communities and soils of polar, temperate, and tropical biomes are discussed.</td>
</tr>
<tr>
<td>WMAN 446</td>
<td>Undergraduate Research</td>
<td></td>
<td>Writing consent of chair and a 2.7 grade-point average in biology. Individual laboratory or field experiments supervised by a faculty member.</td>
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<tr>
<td>BIOL 440</td>
<td>Vertebrate Microanatomy</td>
<td>BIOL 221</td>
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<tr>
<td>BIOL 441</td>
<td>Comparative Anatomy</td>
<td>BIOL 221</td>
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<tr>
<td>BIOL 450</td>
<td>Plant Systematics</td>
<td>BIOL 221</td>
<td>World-wide distribution patterns of plants and factors related to these distributions-including dispersal. Limiting factors, climate, isolation, evolutionary history, plate tectonics, pliocene glaciations, and human activities. Plant communities and soils of polar, temperate, and tropical biomes are discussed.</td>
</tr>
<tr>
<td>BIOL 451</td>
<td>Plant Geography</td>
<td>BIOL 221</td>
<td>World-wide distribution patterns of plants and factors related to these distributions-including dispersal. Limiting factors, climate, isolation, evolutionary history, plate tectonics, pliocene glaciations, and human activities. Plant communities and soils of polar, temperate, and tropical biomes are discussed.</td>
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<tr>
<td>BIOL 455</td>
<td>Teaching Practicum</td>
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<td>Consent. Teaching practice as a tutor or assistant.</td>
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<tr>
<td>BIOL 456</td>
<td>Professional Field Experience</td>
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</table>
492. Directed Study. 1-6 Hr. PR: Consent. 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. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


498. Honors. I, II, S. 1-3 Hr. PR: Consent. PR: Students in Honors Program and consent by the Honors Dean. Independent reading, study, or research.

**Biometric Systems (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

480. Senior Design Seminar. 2 hr. PR: ENGL 102, penultimate semester. Students will select group senior design projects. A complete system-level design will be presented in the form of written proposal and oral presentation of their plans to complete the project during the subsequent semester. (Equivalent to CPE 480, CS 480, and EE 480.)

481. Senior Design Project. 3 hr. PR: BIOM 480; All required coursework. Detailed biometric system and application design experience, including choice of components, interfacing, troubleshooting, working in groups, and project management. Also covers professional topics, including ethics, liability, safety, socio-legal issues, risks, and employment agreements.

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.

493 A-Z. Special Topics. 1-6 hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

496. Senior Thesis. I, II, S. 1-3 hr. PR: Consent.

498. Honors. 1-3 hr. PR: Students in Honors Program and Consent by the Honors director. Independent reading, study, or research.

**Broadcast News (BN)**

191A. Special Topics. 1-3 Hr.

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.

293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.)

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.)

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.)

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.

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.)

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (This course will be graded pass/fail.)

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.)

493 A-Z. Special Topics. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study, or research.

Business Administration (BUSA)

Introduction to Business. 3 Hr. PR: Freshman 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.

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.

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.

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.

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.

Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Senior Thesis. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study, or research.

Business Core (BCOR)

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.

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.

Legal Environment of Business. 3 Hr. PR: Freshman 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.

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.

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.

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.

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.

Managing Individuals and Teams. 3 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.


Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
Business Law (BLAW)
293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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 law regulating employee health, safety, compensation, and benefits, job opportunity, and labor organizing.

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 judgment, practice their profession skillfully and understand their professional responsibility.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Chemical Engineering (CHE)
201. Material and Energy Balances 1. 3 Hr. PR: MATH 155 and CHEM 116 and PR or Conc: ENGR 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.)

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.)

230. Numerical Methods for CHE. 3 Hr. PR: ENGR 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.)

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.)

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.)

312. Separation Processes. 4 Hr. PR: CHE 310 and CHE 311 and CHE 320. Equilibrium stage and multiple stage operations, differential counter current contracting, membrane separations, fluid-particle separations. Laboratory demonstrations and experiments. (3 hr. lec., 2 hr. calc., lab.)

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.

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.)

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.)

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.

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.

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.)

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.)

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.)
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.

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, colloid transport phenomena, surfactants, micelles and emulsions. (3 hr. lec.)

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.)

451. Unit Operations Laboratory. 2. 2 Hr. PR: CHE 450. Continuation of CHE 450. (4 hr. lab.)

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. 4 hr. des. lab.)

456. Chemical Process Design 2. 3 Hr. PR: CHE 455. Continuation of CHE 455.

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.)

462. Polymer Processing. 3 Hr. PR: Junior standing in engineering and mineral resources. Flow behavior in idealized situations; extrusion; calendering; coating; injection molding; fiber spinning; film blowing; mixing; heat and mass transfer; flow instabilities. (3 hr. lec.)

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.)

466. Electronic Mats 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. 3 hr. lec.)

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.)

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.)

473. 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.)

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 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.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study or research.

Chemistry (CHEM)

110. Introduction to Chemistry. I, II. 2 Hr. Required for students whose performance on a departmental placement examination indicates need for introductory work before enrolling in other chemistry courses. Scientific terminology and concepts; chemical arithmetic; 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. (1 hr. lec., 1 hr. rec.)

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; periodicity; properties of gases, liquids, and solids; 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 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.)

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 (CHEM 117 and CHEM 118).
115. Fundamentals of Chemistry. I, II. 4 Hr. PR: CHEM 110 or satisfactory performance on departmental examination. For students who need more than one year of college chemistry and quantitative relationships on which subsequent chemistry courses are built. (3 hr. lec., 3 hr. lab.) (Students may not receive credit for CHEM 117 and for CHEM 115.) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

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.

117. Principles of Chemistry. I. 5 Hr. PR: High school chemistry and satisfactory performance on departmental placement examination, or CHEM 110. 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 117 and for CHEM 111 or CHEM 115.)

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.)

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.)

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.)

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 synthoses. (3 hr. lec.) (Students may not receive credit for CHEM 233, CHEM 234, and for CHEM 231.)

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.)

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.)

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.)

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.)

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.)

313. Instrumental Analysis Laboratory. I. 1 Hr. PR: CHEM 310. Practical application of modern instrumental methods to problems in chemical analysis. (3 hr. lab.)

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.)

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.)

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.)

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.)

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.)

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.)

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.)

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.)

349. Physical Chemistry Laboratory. I. 2 Hr. PR: CHEM 346 and CHEM 347 and CHEM 348. Continuation of CHEM 347. (Two 3 hr. lab.)

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.)

403. Undergraduate Seminar. II. 1 Hr. PR: CHEM 401. For B.S. chemistry majors, B.A. chemistry majors by consent. Instruction in design and presentation of topics of current chemical interest. (1 hr. individual instruction and/or lecture.)
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.)

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.)

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.)

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.)

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.)

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.)

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.)

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.

462. *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.

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

491. *Professional Field Experience.* I, II. 5-18 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. 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics.* I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar.* 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis.* 1-3 Hr. PR: Consent.

497. *Research.* I, II. 1-6 Hr. Independent research projects.

498. *Honors.* 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

**Child Development and Family Studies (CDFS)**

110. *Families Across the Life-Span.* I. 3 Hr. Explores the physical, psychological, and cognitive developmental changes of individuals who are functioning in family systems that change across the life-span.


210. *Introduction to Parenting.* I. 3 Hr. Introduction of terminology, descriptions, and explanations of the parental role and parent-child interactions. Emphasis on social and personal definitions of the parental role and on the problems and changes in parent-child relationships.

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.


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 3-, 4-, and 5 year old children at the West Virginia University Child Development Laboratory.

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.

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.)

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 relations. Topics include effects of family violence, substance abuse, poverty, and health. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.
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.

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, families, and develop collaborative partnerships.

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.

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.

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

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.


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. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Chinese (CHIN)

101. Elementary Chinese 1. 3 Hr.

102. Elementary Chinese 2. 3 Hr. Continuation of CHIN 101.

203. Intermediate Chinese 1. 3 Hr. PR: CHIN 102 or equiv.

204. Intermediate Chinese 2. 3 Hr. PR: CHIN 203 or equiv.

293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.


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

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Civil Engineering (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.

201. Intro 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.

205. Surveying and Computer Aided Design. 3 Hr. PR: ENGR 101 or consent. Application of surveying measurements and calculations to the acquisition of site data for the design and layout of engineering works. Introduction to the computer-aided design process using site data.

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.

293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. Engr. 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.

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.)

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.)

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.)
332. Introduction to Transportation Engineering. 4 Hr. PR: CE 205. 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.)

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.)

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.)

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.)

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.)

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.)

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.)

414. Construction Engineering. 3 Hr. PR: Senior standing. Introduce student to the role of civil engineer in the construction process, including critical path analysis, productivity estimation, equipment capability and selection.

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.

416. Advanced Concrete Materials. 3 Hr. PR: CE 412 or Consent. Microstructure and properties of portland cement pastes, rheology, maturity, strength properties, non-linear fracture mechanics. Early age volume changes, creep and shrinkage models, transport mechanism and durability of concrete, special concretes.

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.)

425. Engineering Hydology. 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.)

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.)

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.)

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.)

435. Railway Engineering. 3 Hr. PR: CE 205. Development and importance of the railroad industry. Location, construction, operation, and maintenance. (3 hr. lec.)

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.

441. Public Health Engineering. 3 Hr. PR: Consent. Engineering aspects involved in the 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.)

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.)

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.)

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.)

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.)

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.)
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.)

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.)

462. Reinforced Concrete Design. 3 Hr. PR: CE 310 and 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 prestressed concrete. (2 hr. lec., 3 hr. lab.)

463. Timber Design. 3 Hr. PR: CE 310 and CE 361. Design of steel bridge and building systems with emphasis on connections, beams, columns, plastic design, and cost estimates. (3 hr. lec.)

464. Timber Design. 3 Hr. PR: CE 310 and CE 361. Fundamentals of modern timber design and analysis. Topics include wood properties, design of beams, columns, trusses, and pole structures using dimension lumber, glue-laminated products, and plywood. (3 hr. lec.)

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.)

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.)

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. Seminar. 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.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Classics (CLAS)

101. Elementary Latin I. 3 hr.


203. Intermediate Latin. 3 hr. PR: CLAS 102 or two years of high school Latin.

204. Intermediate Latin. 3 hr. PR: CLAS 203 or two years of high school Latin.

231. Greek and Roman Civilization and Culture. 3 hr.

232. Greek and Roman Myths. 3 hr.

293 A-Z. Special Topics. 1-6 hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

492. Directed Study. 1-6 hr. Directed study, reading, and/or research.

493. Special Topics. 1-6 hr. A study of contemporary topics selected from recent developments in the field.

495. Independent Study. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 hr. PR: Consent.

498. Honors. 1-3 hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Communication Studies (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.

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.
103. Presentational Speaking. I, II. 1-3 Hr. A laboratory designed to reinforce behavioral speaking skills based on the theory taught in COMM 104.

104. Human Communication in the Public Communication Context. I, II. 2 Hr. Introduction to principles of communication in the one-to-many context.

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.

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.

113. 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.

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.

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.

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.

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.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

300. 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.

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.

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.

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.

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.

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.

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.

314. Nonviolence in Communication Behavior. 3 Hr. Nonviolent resistance as communication behavior. Emphasis on major proponents of and ways of applying nonviolence in communication behavior.

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.

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.

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.

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.

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.

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.

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.
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.

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.

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.

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.

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

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.

492 A-Z. *Directed Study*. 1-3 Hr. Directed study, reading, and/or research.

493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar*. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

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

496. *Senior Thesis*. 1-3 Hr. PR: Consent.

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)**

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

293 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.


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.

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.
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.

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.

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.

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.

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.

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.

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.

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.

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.

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

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Computer Engineering (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.)

272. Digital Logic Laboratory. 1 Hr. Co-Req: 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 hrs. lab.)

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

310. Microprocessor Systems. 3 Hr. PR: CPE 271. 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.)

311. Microprocessor Laboratory: 1 Hr. Co-Req: 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. lec.)

312. Microcomputer Structures and Interfacing. 3 Hr. PR: CPE 310 and CPE 311. COREQ: CPE 313. 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.)

313. Microcomputer Structures and Interfacing Laboratory: 1 Hr. PR: CPE 310 and CPE 311. COREQ: CPE 312. A microcomputer based single-board computer is designed and built. A semester project is required using standard I/O techniques. (3 hr. lab.)

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.

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.)

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 functions. CAD tools are used for projects. (3 hr. lec.)


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.)

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)

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.)

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. cont., 2 hr. lab.)

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)

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Computer Science (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.

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).

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.)

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.

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.)

221. Analysis of Algorithms. 3 Hr. PR: 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 path.

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.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.)

Courses

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.

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.)

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.

422. Automata Theory. 3 Hr. PR: CS 220 or consent for non-majors. Introduction to 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.

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.

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.)

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.

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.)

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.)

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.

455. Computer Architecture. 3 Hr. PR: CS 350 or consent for non-majors. Computer structure; 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.)

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.

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.

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.)

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.)

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.)

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

492 A-Z. Directed Study. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. 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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

Counseling (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.
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.

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.

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.

493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

Curriculum and Instruction (C and I)

Note: Some CandI courses are being phased out and replaced by new Education (EDUC) courses as part of the revised teacher preparation program. See your advisor for a current course listing.

324. Teaching Language Arts: Secondary School. I, II. 3 Hr. Includes an examination and application of relevant curricular materials and teaching techniques.

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.

410. Early Childhood Education 1. I, II, S. 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.

411. Early Childhood Education 2. I, II, S. 3 Hr. PR: CandI 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.


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.

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.

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.)

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.

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.


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.

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.


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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

Dance (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.

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.

120. Advanced Modern Dance. I, II. 1 Hr. PR: DANC 102 or consent.

121. Intermediate Modern Technique. I, II. 2 Hr. PR: DANC 102 or DANC 160. 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.

130. Intermediate Jazz Dance. I, II. 1 Hr. Development of jazz technique and appreciation of jazz as an American art form.

131. Elementary Jazz. I, II. 2 Hr. PR: DANC 102 or consent. 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.

132. Intermediate Jazz. II. 2 Hr. PR: DANC 131. 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.

140. Ballet. I, II. 1 Hr. Ballet vocabulary with emphasis on barre work and adagio and allegro technique.

141. Introduction to Ballet. I, II. 2 Hr. PR: DANC 102 or Consent. Simple ballet techniques, positions, basic barre work, and motor combinations will be developed.


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.

160. Technique and Composition I. I. 2 Hr. PR: DANC 102. 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.

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.

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.

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.

241. Advanced Ballet. I, II. 2 Hr. PR: DANCE 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.

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.

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.


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.

362. Advanced Choreography. II. 3 Hr. PR: DANC 262. 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.

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.

493 A-Z. Special Topics. I, II. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

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

496. Senior Thesis. 3 Hr.

498. Honors. 3 Hr.

Dental Hygiene (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.
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.

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.

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.


220. Dental Nursing Techniques. 2 Hr. PR: Enrollment in Dental Hygiene. Emergency first aid and principles of nursing applicable to the dental office.

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.

293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

300. Anesthesia for Dental Hygiene. 1. 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.

320. Dental Radiology. 2 Hr. PR: Enrollment in Dental Hygiene. Basic principles and procedures in oral radiology techniques and interpretation.

322. Dental Radiology. 1 Hr. PR: DTHY 320. The application of radiology principles and techniques. Clinical integration and case presentations will be emphasized.


351. Dental Health Education. 3 Hr. PR: Enrollment in Dental Hygiene. Methods, materials, and resources used in teaching dental health to various population groups.

360. Dental Materials. 3 Hr. PR: Enrollment in Dental Hygiene. Lecture and laboratory covering the science and manipulation of dental materials.

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.)

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.

364. Periodontics 2. 2 Hr. PR: DTHY 363. A sequential course to DTHY 363.

366. Technical Expression and Dental Literature. 1 Hr. PR: Dental Hygiene Major. Preparation and analysis of professional communications.

367. Research Methods. 1 Hr. PR: DTHY 351. Methods and techniques utilized in dental hygiene research. Major emphasis on obtaining IRB approval for two-year research project.


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.

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.


406. Advanced Clinical Dental Hygiene 2. 3-4 Hr. PR: Fourth year in Dental Hygiene. Continuation of clinical practice experience in dental hygiene procedures.


440. Senior Integration Seminar. 1 Hr. PR: Consent. A through analysis and integration of didactic, laboratory and clinical content via lectures, discussions and cases in preparation for licensure.

Courses

Economics (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.

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.

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.

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.)

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.


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.

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.

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.

425. Introductory Econometrics. 3 Hr. PR: ECON 202 and (ECON 225 or STAT 211.) Analysis of economic models using basic econometric methods. Specification, computation, and interpretation of linear regression.

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.


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.

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.

453. Economic Transition in Europe. 3 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 students' expense.

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.


455. Economic Development. 3 Hr. PR: ECON 202. The problems, changes, and principal policy issues faced by non-industrialized countries.

461. Regional Economics. I. 3 Hr. PR: ECON 202. Analysis of the regional economy’s spatial dimension, emphasizing inter-regional 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.

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.

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.

481. American Economic History. 3 Hr. PR: ECON 220. Central issues in the development of the American economy.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Education (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. (First offered Fall, 1995.)

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. (First offered Spring 1997.)

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.

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. (First offered Fall, 1997.)

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. (First offered Spring, 1996.)

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 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. (First offered Fall, 1998.)

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. (First offered Spring, 1999.)

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.

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. (First offered Fall, 1998.)

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. (First offered Spring, 1999.)
414. Promoting Creative Expression in Elementary Classrooms. II. 3 Hr. PR: EDUC 410. Includes an examination of creative experiences for children in elementary school, pre-school-grade 6. Topics include the use of the creative arts in learning activities, curriculum development, and instructional strategies.

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.

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.

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.

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.

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.

498. Honors. I, II, 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Educational Psychology (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.

490. Teaching Practice. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

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

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Electrical Engineering (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, average and RMS values, complex power, (3 hr. lec.) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

222. Introduction to Electrical Engineering Laboratory. 1 Hr. Co-Req: EE 221. Design and experimental exercises basic electrical circuits. Use of the digital computer to solve circuit problems. (3 hr. lab.)

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.

224. Electrical Circuits Laboratory. 1 Hr. Co-Req: 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.)

251. Digital Electronics. 3 Hr. PR: EE 221 and CPE 271 and PHY 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.)

252. Digital Electronics Laboratory. 1 Hr. Co-Req: 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.)


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.)

328. Signals and Systems Laboratory. 1 Hr. PR: EE 327 and Co-Req: EE 329. Laboratory experiments in measurement and analysis of systems and signals. (3 hr. lab.)

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.)

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.)

345. Engineering Electromagnetics. 3 Hr. PR: MATH 261 and PHYS 112. Introduction to electromagnetic theory and applications. Electric charge, electric and magnetic fields, scalar potentials, boundary value problems. Laplace’s and Poisson’s equations, electric and magnetic materials. Maxwell’s equations. (3 hr. lec.)

355. Analog Electronics. 3 Hr. PR: EE 223 and EE 251. Electronic devices in analog circuits. Small-signal and graphical analysis of BJTs and FETs; frequency response, feedback, and stability. Linear and nonlinear operational amplifier circuits. Power amplifiers and power control by electronic devices. (3 hr. lec.)

356. Analog Electronics Laboratory. 1 Hr. Co-Req: 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.)

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.)

413. Introduction to Digital Control. 3 Hr. PR: EE 327. Sampling of continuous-time signals and transform analysis. Stat-variable analysis for linear discrete-time systems and design of digital controller. (3 hr. lec.)

425. Bioengineering. 3 Hr. 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. Co-listed with MAE 473. (3 hr. lec.)

426. 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.

431. 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.)

435. Introduction to Power Electronics. 3 Hr. PR: EE 335 and EE 355 and EE 356 or consent. Application of power semiconductor components and devices to power system problems; power control; conditioning processing, and switching. Course supplemented by laboratory problems. (3 hr. lec.)

436. Power Systems Analysis. 3 Hr. PR: EE 335 and EE 336. Incidence and network matrices, Y-Bus, symmetrical and unsymmetrical faults, load-flow and economic dispatch, MW-frequency and MVAR-voltage control. The power system simulator will be used for demonstrations. (3 hr. lec.)

437. 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.)

445. Communications Electromagnetics. 3 Hr. PR: EE 345 or Equivalent. Development of Maxwell’s equations and general electromagnetics theory underpinning communication transmission and device applications. Wave propagation in unbounded and bounded media, guided wave propagation in common waveguide geometries, radiation, and antennas.

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.)

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.)

455. Introduction to Microfabrication. 1, 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.

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.)

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.)

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.)

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.)

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.)

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. cont.)
Courses

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.)

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.

490. Teaching Practicum. I, II. 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.

493 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. 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.

496. Senior Thesis. I, II. S. 1-3 Hr. PR: Consent.

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

Engineering (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.

102. Engineering Problem-Solving 2. 2 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.

199. Orientation to Engineering. I. 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.

293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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, look for a job, and assessing job offers.

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.

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.

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.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

English as a Second Language (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.

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.

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.

293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.
490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a max. of 18 hrs.) 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.

493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

**English Language and Literature (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.

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.

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.

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.

131. Poetry and Drama. I, II. 3 Hr. An introduction to the genres.


154. African American Literature. I, II. 3 Hr. A historical introduction and survey from its beginnings to the present.

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.

199. Orientation to English Studies. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

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.

212. Creative Writing: Fiction. I, II. 3 Hr. An open enrollment introduction to the writing of fiction.

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.


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.

225. Western World Literature. I, II. 3 Hr. Selected readings in the canon of Western world literature, both ancient and modern.

226. Non-Western World Literature. I, II. 3 Hr. Selected readings in non-Western world literature, ancient and modern.

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.

231. Prose. I, II. 3 Hr. Study of prose genres, including autobiography, biography, travel narrative, and nature writing.


233. The Short Story. I, II. 3 Hr. The short story’s structure, history, and contemporary forms.

234. Drama. I, II. 3 Hr. The drama’s structure, history, and contemporary forms.

235. Novel. I, II. 3 Hr. The novel’s structure, history, and contemporary forms.

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.

241. American Literature 1. I, II. 3 Hr. A historical introduction and survey from its beginnings to the mid-nineteenth century.

242. American Literature 2. I, II. 3 Hr. A historical introduction and survey from the mid-nineteenth century to the present.
Courses

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.

252. Appalachian Fiction. I, II. 3 Hr. Reading of short stories, novels, and other narratives by Appalachian authors.


254. African American Literature. I, II. 3 Hr. Studies in the literature of African American authors, 1845 to the present.

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.

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.

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.

261. British Literature 1. I, II. 3 Hr. A historical introduction and survey from the Middle Ages through the eighteenth century.

262. British Literature 2. I, II. 3 Hr. A historical introduction and survey from the late eighteenth century to the present.

263. Shakespeare 1, I, II. 3 Hr. Several of Shakespeare’s most important plays.


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.

286. Sexual Diversity in Literature and Film. I, II. 3 Hr. Representation of lesbians, gay men, and bisexuals in literature and film.

293 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

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.

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.

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.

309. Approaches to Teaching Composition. I, II. 3 Hr. PR: ENGL 201. Surveys attitudes toward and techniques of teaching writing in elementary and secondary schools. Provides experiment in class with methods of teaching writing.

312. Creative Writing Workshop: Fiction. I, II. 3 Hr. PR: Grade of “B” or higher in ENGL 212. Advanced workshop in creative writing for students seriously engaged in writing fiction.

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.

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.

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.

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.

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.

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.

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.
339. Theatre Tour. I, II. 3 Hr. Introduces students to texts in performance by reading dramatic text and traveling to see those texts in performance. Performance sites may include either international or US locations.


344. Modern American Poetics. I, II. 3 Hr. A close study of those poets who have shaped the aesthetics of contemporary American poetry.

345. American Literature to 1800. I, II. 3 Hr. Major genres, authors, themes, and topics in American literature, c. 1500 to 1800.

346. American Literature 1800-1865. I, II. 3 Hr. Major genres, authors, themes and topics in American Literature from 1800 to 1865.

347. American Literature 1865-1915. I, II. 3 Hr. Major genres, authors, themes, and topics in American Literature from 1865 to 1915.

348. 20th Century American Literature. I, II. 3 Hr. Major genres, authors, themes, and topics in American literature from 1900 to 1999.

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.

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.

352. Topics in Appalachian Studies. I, II. 3 Hr. Studies of authors, genres, themes, or topics in Appalachian literature.

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.

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.

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.

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.

362. Literature of the 16th Century. I, II. 3 Hr. Studies from Caxton to Bacon, from Skelton to Shakespeare.

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.

364. Literature of the 17th Century. I, II. 3 Hr. Studies from Donne to Dryden.

365. Milton. I, II. 3 Hr. All of Milton's poems and a few selected prose works.

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.

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.

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.

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 Brontes, Eliot, and Hardy.


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.

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.

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.

381. Literary Criticism. I, II. 3 Hr. Literary criticism from Aristotle to modern times.

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.

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.
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.

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.

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.

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.

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.

405. *Fiction for Adolescents.* I, II. 3 Hr. A survey of fiction for adolescents with special attention to literary theories that assist its interpretation.

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.

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

491 A-Z. *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.

493 A-Z. *Special Topics.* I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

496. *Senior Thesis.* I, II. 3 Hr. PR: Consent. Careful investigation of and independent research on a topic approved in advance by the thesis director and the department.

498 A-Z. *Honors.* I, II. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

499. *Global Service Learning.* 3 Hr. PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

**Entomology (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.

293 A-Z. *Special Topics.* I, II. S. 1-6 Hr. PR: Consent Investigation of topics not covered in regularly scheduled courses.

301. *Apiculture.* I. 4 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. (Offered in spring of odd years.)

302. *Apiculture Laboratory.* II. 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. (Offered in spring of odd years.)

404. *Principles of Entomology.* I. 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.

410. *Insect Pests in the Agroecosystems.* I. 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.) (Offered fall even years.)

412. *Pest Management.* II. 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 ENWP 412.)

470. *Forest Pest Management.* II. 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. (Cross-listed with PFTH 470.)

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.

493. *Special Topics.* I, II. S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar.* I, II. S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.
498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Entrepreneurship (ENTR)
293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
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.
492. Directed Study. 1-3 hr. Directed study, reading, and/or research.
493. Special Topics. 1-6 Hr. PR: Consent Investigation of topics not covered in regularly scheduled courses.

Environmental Microbiology (ENVM)
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.
401. Environmental Microbiology. II. 4 Hr. PR: ENVM 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 420.)
408. Applied Water Microbiology. 3 Hr. PR: ENVM 341. Microbiology and health hazards associated with surface and ground water intended for consumption, recreation, waste disposal, and agriculture/industry applications.
420. Soil Microbiology. I. 3 Hr. PR: ENVM 341. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of microorganisms in soil. (Offered in fall of even years. Also listed as AGRN 420 and ENVP 420.)
445. Food Microbiology. II. 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 and technologies and predictive microbiology will be introduced.
449. Food Microbiology Lab. 1 Hr. PR: ENVM 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 ENVM 445.
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.
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.
496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.
498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Environmental Protection (ENVP)
155. Elements of Environmental Protection. II. 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.
355. Environmental Sampling and Analysis. I. 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.
401. Environmental Microbiology. II. 4 Hr. PR: ENVM 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 ENVM 401.)
412. Pest Management. II. 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.)
420. Soil Microbiology. I. 3 Hr. PR: ENVM 341. Microbiology and biochemistry of the soil environment. Occurrence, distribution, ecology, and detection of microorganisms in soil. (Offered in fall of even years. Also listed as ENVM 420 and AGRN 420.)
425. Environmental Soil Management. II. 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.)
451. Principles of Weed Control. I. 3 Hr. PR: PLSC 206 and AGRN 202 and AGRN 203 or consent. Fundamental principles of weed science. Identification of common weeds, biology, ecology and control measures. (Offered in Fall of odd years.) (Also listed as AGRN 451.)
Students will develop a book review, analyze discipline-specific texts, and write scientific literature reviews. Includes a review of style and language use. Field trip required. (Also listed as AGRN 455.)

Environmental Impact Assessment. I, 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.

Exercise Physiology (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.


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.)

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.

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.

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.

450. Theory of Aquatic Therapy. 3 Hr. PR: Junior standing or consent. An introduction to aquatic therapy. It covers the historical perspective, biophysiological response to water immersion, and application of aquatic therapy to specific physical diagnoses.

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.

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.

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.)


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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

Family and Consumer Sciences (F&CS)

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

460. Communications of Consumer Information. I, II. 3 Hr Provides opportunities to use a variety of communication techniques in professional settings to meet the informational needs of consumers.

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.


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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.
Finance (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.
310. Investments. 3 Hr. PR: BCOR 340. Investment analysis and management for the individual and the financial institution.
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.
340. Real Estate. 3 Hr. Principles and practices of real estate business.
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.
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.
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.
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.
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 management of the completed project.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.
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.
493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
496. Senior Thesis. 1-3 Hr. PR: Consent.
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)**

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.

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. (Offered in spring of even years)

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.

367. Muscle Foods Technology Laboratory. 1 Hr. Co-Req: FDST 365. Laboratory training in the processing 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. (Offered in fall of even years).

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.

436. Food Quality Evaluation Lab. 1 Hr. Co-Req: 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.

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.

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 ENVM 545.

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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent study, reading or research.

**Foreign Literature in Translation (FLIT)**

113. Introduction to French Literature. 3 Hr. Major writers and representative movements in French literature from its beginning to the present.

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.

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.

116. Introduction to Latin American Literature. 3 Hr. Reading and discussion of representative works of twentieth century Latin American writers.

117. Introduction to Russian Literature. 3 Hr. Major writers and representative movements in Russian literature from its beginning to the present.

118. Introduction to Italian Literature. 3 Hr. Italian literary masterpieces will be examined in historical perspective and in relation to the European mainstream.

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.

205. Greek Literature in Translation 1. 3 Hr.

206. Greek Literature in Translation 2. 3 Hr.

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.

212. Italian Literature in Translation 2. 3 Hr. Selected Italian work from the nineteenth and the twentieth centuries. Readings and discussion in English.

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.

221. Chinese Literature in Translation. 3 Hr. Survey of selected works of Chinese literature from ancient times through the eighteenth century.

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.

225. Latin Literature in Translation 1. 3 Hr.

226. Latin Literature in Translation 2. 3 Hr.

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.

232. German Literature in Translation 2. 3 Hr. Selected German works from the period of Naturalism to the present. Readings and discussion in English.

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.

242. Spanish Literature in Translation 2. 3 Hr. Selected Spanish works from the nineteenth and the twentieth centuries. Readings and discussion in English.

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.

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.

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.

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.

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.

263. French Women Writers. 3 Hr. Selected works of French women writers. (3 hr. lec.)

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.

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.

272. Russian Fairy Tales. 3 Hr. Introduces a wide selection of Russian fairy tales and examines the aesthetic, social, and psychological values that the reflect; general introduction to the study of folklore with a broad spectrum of approaches (psychoanalysis, structuralism, feminism).

273. Russian Literature in Translation 1. 3 Hr. Major works of Russian authors from the beginning to 1880, including those of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy. Russian major will read selections in the original.

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.

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.

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.

293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

336. Weimar Cinema. 3 Hr. A study of representative German films from the years 1919-1932. (May be cross listed with GER 433.)

344. Fascism and Film. 3 Hr. A study of representative German films from the years 1919-1945. (May be cross listed with GER 434.)

345. The New German Cinema. 3 Hr. A study of representative German films from 1962 to the present. (May be cross listed with GER 435.)

400. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498 A-Z. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Forensic Identification Program (FIDP)

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.

201. Introduction to Forensic Identification. 3 Hr. A survey course of the competencies required to successfully complete the Forensic Identification Program including overview of the history and components of fingerprint classification systems, newest identification technologies and skills, insight into personal/career characteristics.

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.

301. Science/Technology of Fingerprint Identification I. 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.

302. Crime Scene Investigation I. 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/prosecuting evidence.

304. Latent Fingerprint. 3 Hr. PR: FIDP 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.

386. Forensic Identification Internship. 6-9 Hr. PR: FIDP 201 and FIDP 301 and FIDP 302 and FIDP 304 and must preregister 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.

402. Crime Scene Investigation II. 3 Hr. PR: FIDP 302. An extension of FIDP 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.

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.

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.

408. Forensic Journal Club. 1 Hr. Familiarize students with primary forensic literature including original research papers, legal documentation, and articles from professional publications by conducting a literature search on a topic and preparing and presenting an analysis to the class.

409. Blood Spatter Analysis. 3 Hr. Violent crimes frequently produce evidence such as bloodstains and related trace evidence. Scientific analyses of trace evidence and blood patterns at crime scene investigations and their applications in solving crimes.

410. Forensic Capstone. 6 Hr. An inquiry based experience, which culminates the four-year academic program for Forensic Identification undergraduate students. Students will work in teams on forensic research projects and critically evaluate a series of speakers presenting relevant forensic talks.

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.


495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available though regular course offerings.

498 A-Z. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Forest Hydrology (FHYD)

444. Watershed Management. II. 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.

Forest Management (FMAN)

212. Forest Ecology. I, II. 3 Hr. PR: FOR 205. Forest and environment factors; site and type characteristics.

222. Forest Mensuration. II. 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.

311. Silvicultural Systems. I. 4 Hr. PR: FOR 205 and ((FMAN 212 and FMAN 322) 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.
316. Forest Genetics and Tree Improvement. I. 3 Hr. Forest genetic principles and their application to forest tree improvement, including crossing methods, selection systems and other techniques.

322. Advanced Forest Measurements. I. 3 Hr. PR: FMAN 322 or equivalent. Measurement and computer simulation of forest growth; principles of growth and yield; statistical methods applied to forest measurement problems.

330. Principles of Forestry Economics. II. 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.

400. Forest Resources Management Field Practice. S. 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.

413. Regional Silviculture. I. 2 Hr. PR: Forestry major or Consent, FMAN 212; PR or CONC: FMAN 311. Major forest types of the United State: their composition, management, problems, and silvicultural treatment.


434. Forest Resources Management Planning. II. 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.

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.

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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent study, reading or research.

Forestry (FOR)

101. Careers in Natural Resources Management. I. 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.

140. West Virginia's Natural Resources. I, II, S. 3 Hr. Survey of policies and practices in development and use of soil, water, forest, wildlife, mineral, and human resources in West Virginia.

203. Careers in Natural Resources. 1 Hr. Planning a career in forestry and natural resources professions. Developing a career strategy, resume building, and conducting a successful job search.

205. Dendrology. I. 3 Hr. Classification and silvical characteristics of North American forest trees.

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.


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. (Cross listed with WMAN 421.)

425. Global Forest Resources. II. 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.

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.


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.
Courses
492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors and consent by the Honors Director. Independent reading, study or research.

**General Engineering (ENGR)**

190. Teaching Practicum. 1-3 hr.


194. 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.

195. Seminar. 1-3 hr.

196. Senior Thesis. 1-3 hr.

197. Honors. 1-3 hr.

198. Cooperative (Co-Op) Education Experience. 0-18 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.

**Genetics (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.


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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

**Geography (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.

106. Physical Geography Laboratory. 1 Hr. PR or CONC: GEOG 107.

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.

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.

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.

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.

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.

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.)

201. Map and Image Interpretation. 3 Hr. PR: (GEOG 101 and GEOG 102) or (GEOL 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.)
205. **Natural Resources.** 3 Hr. Introduces the concept of natural resources and surveys such topics as land, soil, range-land, forests, water, atmosphere, minerals, and energy. Emphasis is on the United States within the context of the global environment.

207. **Climate and Environment.** 3 Hr. Examination of atmospheric processes and the impact of human activity on climate.

209. **Economic Geography.** 3 Hr. PR: GEOG 108. Examination of the world economy particularly the spatial patterns of agriculture, manufacturing and services.

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.

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.

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.

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.

243. **Geography of Africa.** 3 Hr. Systematic and regional characteristics and geographic problems of political, social, and economic development.

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.

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.

293 A-Z. **Special Topics.** 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

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 resource, conservation, and environmental perceptions and policies.

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.

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.

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.

311. **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.)

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.)

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.)

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.


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.

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.

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.
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.

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.)

453. Geographic Information Science: Design and Implementation. 3 Hr. PR: GEOG 350 and Consent. Geographic database design and implementation using contemporary GIS software.

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.)

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.

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.)

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

492 A-Z. Directed Study. 1-3 Hr. Directed study, reading, and/or research.

493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

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.)

498. Honors. 1-3 Hr. PR: Students in the Honors Program and Consent by the Honors Director. Independent reading, study or research.

499. Honors Thesis. 3-6 Hr. PR: Departmental Consent. Thesis proposal, writing, and defense for students admitted to the Honors Program.

Geology (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 hrs. credit in a laboratory science in geology.) (Students cannot receive credit for GEOL 101 and GEOL 110 or GEOG 110.)

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.)

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.)

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.)

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 hrs. credit in laboratory science.) (Also listed as GEOG 110; students may not receive credit for GEOL 110 and GEOG 110.)

111. Environmental Geoscience Laboratory. 1 Hr. PR or CONC: GEOL 111. (Also listed as GEOG 110; students may not receive credit for GEOG 110 and GEOL 102.)

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.)

201. Geologic Interpretation. 3 Hr. PR: (GEOL 101 and GEOL 102) or (GEOL 110 and GEOL 111) or (GEOG 110 and GEOG 111). 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.)

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.

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.)
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>310. Physical Geology</strong></td>
<td>3 Hr. PR: GEOL 100 and GEOL 101. Composition and structure of the earth and the geologic processes which shape its surface.</td>
</tr>
<tr>
<td><strong>311. Physical Geology for Teachers</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>312. Physical Geology Laboratory</strong></td>
<td>1 Hr. PR: GEOL 101 and GEOL 102 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.)</td>
</tr>
<tr>
<td><strong>313. Introductory Petrology</strong></td>
<td>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 weekend field trip. Students will be required to pay a portion of the expenses.)</td>
</tr>
<tr>
<td><strong>314. Stratigraphy and Sedimentation</strong></td>
<td>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 trip at student’s expense.)</td>
</tr>
<tr>
<td><strong>315. Geomorphology</strong></td>
<td>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.)</td>
</tr>
<tr>
<td><strong>316. Paleontology</strong></td>
<td>3 Hr. PR: GEOL 103 and GEOL 104 and STAT 211. Uses of paleontologic data in geology: biostratigraphy, paleocology, evolution, extinction, and biogeography; lab emphasis on identification and utilization of marine invertebrate fossils. (Required weekend field trip at student’s expense.)</td>
</tr>
<tr>
<td><strong>317. Structural Geology</strong></td>
<td>3 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.)</td>
</tr>
<tr>
<td><strong>318. Structural Geology for Engineers</strong></td>
<td>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.)</td>
</tr>
<tr>
<td><strong>319. Geomathematics</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>320. Environmental Geology</strong></td>
<td>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.)</td>
</tr>
<tr>
<td><strong>321. Environmental Practicum</strong></td>
<td>4 Hr. PR: GEOL 200. Practical experience in collecting and evaluating data required to address the complex environmental issues facing professional geoscientists. (Required field trip during spring break.)</td>
</tr>
<tr>
<td><strong>322. Physical Geology for Teachers</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>323. Geology Field Camp</strong></td>
<td>5 Hr. PR: GEOL 284 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.)</td>
</tr>
<tr>
<td><strong>324. Carbonate Sedimentation of Florida</strong></td>
<td>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.)</td>
</tr>
<tr>
<td><strong>325. Introductory Paleobotany</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>326. Geographic Information Science: Applications</strong></td>
<td>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.) (Also listed as GEOG 452.)</td>
</tr>
<tr>
<td><strong>327. Environmental and Exploration of Geophysics I</strong></td>
<td>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.</td>
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<tr>
<td><strong>328. Introduction to Remote Sensing</strong></td>
<td>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.)</td>
</tr>
<tr>
<td><strong>329. Physical Hydrogeology</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>330. Applied Hydrogeology Seminar</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>331. Mineral Resources</strong></td>
<td>3 Hr. PR: GEOL 101 and GEOL 284. Description, mode of occurrence, and principles governing the formation of ore deposits.</td>
</tr>
<tr>
<td><strong>332. Petroleum Geology</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>333. Petroleum Geology Laboratory</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>334. Minerals and the Environment</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>
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.

Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

Professional Field Experience. 1-18 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) Preamarranged 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.

Directed Study. 1-6 Hr.

Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Seminar. 1-6 HR. Seminars arranged for advanced graduate students.

Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Senior Thesis. 1-3 Hr. PR: Consent.

Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

German (GER)

Intensive Elementary German. 6 Hr. The equivalent of GER 101 and GER 102 combined into one course.

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.)

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.

Intensive Intermediate German. 6 Hr. PR: GER 102 or 100 or consent. The equivalent of GER 203 and GER 204 combined into one course.

Intermediate German 1. 3 Hr. PR: GER 102 or GER 100.

Intermediate German 2. 3 Hr. PR: GER 203, or consent. Continuation of GER 203.

Advanced German Conversation 1. 3 Hr. PR: GER 204. Content-based conversation course with grammar review.

Advanced German Conversation 2. 3 Hr. PR: GER 301. Content-based conversation course with grammar review.

Advanced German Composition 1. 3 Hr. PR: GER 302. Content-based composition course with grammar review.

Advanced German Composition 2. 3 Hr. PR: GER 303. Content-based composition course with grammar review.

Survey of German Literature 1. 3 Hr. PR: GER 204. Readings of representative selections from major periods through Romanticism.

Survey of German Literature 2. 3 Hr. PR: GER 204. Readings of representative selections from major periods since Romanticism.

German Cultural History. 3 Hr. PR: GER 204. A study of cultural, political, social, and economic developments in the German-speaking countries.

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.

Commercial German 2. 3 Hr. PR: GER 361 or consent. Continuation of GER 361. Preparation for Diplom Wirtschafts-deutsch.

Weimar Cinema. 3 Hr. A study of representative German films from the years 1919–1932. (May be crosslisted with FLIT 433.)

Fascism and Film. 3 Hr. A study of representative German films from the years 1919–1945. (May be crosslisted with FLIT 434.)

The New German Cinema. 3 Hr. A study of representative German films from 1962 to the present. (May be crosslisted with FLIT 435.)

German Culture Since 1945. 3 Hr. PR: Consent. An exploration of postwar German culture with a focus on the contemporary situation since unification.

Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a max. of 18 hrs). Preamarranged 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. 1-6 Hr. Directed study, reading, and/or research.

493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Special topics.

495. Independent Study. 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Gerontology (GERO)
293 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

410. The Rural Elderly. 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)

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.)

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.

493 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

History (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.

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.

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.

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 problems, relations with the West, cultural patterns and changes in the modern era.

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.

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.

124. Modern South Asia. 3 Hr. Survey of South Asia from the early modern period to the present; traditional background, Mughal conquest and decline, British Raj, nationalist and independence movements, partitions, independent states, and current issues.

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.

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.

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.

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.

199. Orientation to History. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

201. History of Ancient Times: Stone Age to the Fall of Rome. 3 Hr. Ancient civilizations of the Near East and the Mediterranean.

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.
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.

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.

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.

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.

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.

208. *Twentieth Century Europe.* 3 Hr. Traces the major political, economic, and social developments of Europe from World War I to the present.

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.

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.

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.

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 in-action of bystanders.

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.

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.

242. *Latin America: Reform and Revolution.* 3 Hr. History of modern Latin America, concentrating on the durability of nine-teenth-century social, economic, and political institutions, and the twentieth-century reformist and revolutionary attempts to change those institutions.

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.


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.

257. *Antebellum America: 1821-1861.* 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.

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.

261. *Recent America: The United States since 1918.* 3 Hr. (Primarily for non-history majors.) The 1920’s, the New Deal, World War II, and a survey of developments since World War II.

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.

271. *Science/Religion and Myth.* 3 Hr. Surveys human understandings of nature from prehistoric astronauties and Babylonian myths through ancient and medieval thought to the new sciences of Copernicus, Galileo, and Newton.

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.

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.

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.
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.)

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.)

293 A-Z. **Special Topics.** 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

316. **World War I 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.


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.

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.

400. **Greece and Rome.** 3 Hr. Covers the Minoan and Mycenaean 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.

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, Pirenne Thesis, and transition to feudal society.

404. **Ancient and Medieval Science.** 3 Hr. Investigations of the natural world in classical antiquity and medieval Europe.

407. **The Rise of Modern Science.** 3 Hr. The emergence of the scientific world view from the Renaissance through the Enlightenment.

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.

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.

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.

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.

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.

413. **France from the Renaissance to Napoleonic.** 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.

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.


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.

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.)

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.)

419. **Revolutions in 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.

420. **U.S.S.R. and After: 1953 to Present.** 3 Hr. Crisis of late Stalinism; Kruschev, destalinization, reforms; Brezhnev, stabilization, militarization, corruption, stagnation; Gorbachev, perestroika, glasnost’, disintegration; Yeltsin, shock therapy, criminalization, decline.

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.
242. 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.

244. 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.)

245. 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.

246. 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.

247. 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.

248. 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.

249. 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.

250. History of Africa: European Domination to Independence. 3 Hr. History of Africa from the middle of the nineteenth century to the 1960’s. Political and economic trends will form major focus.

251. 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.

252. 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.

253. 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.)

254. 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.

255. 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.)

256. 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.)

257. 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.

258. 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.

259. 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.


261. 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.

262. 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.

263. 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.

264. The United States From McKinley to the New Deal, 1898 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.

265. 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.

266. 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.

267. American Diplomacy to 1947. 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.
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.

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.)

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.

American Economic History Since 1865. 3 Hr. Scope similar to HIST 466.

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.

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.

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.

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.

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.

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.

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.

Introduction to Historic Preservation. 3 Hr. Introduction to historic preservation issues, including law, economics, not-for-profit organizations, site interpretation, architectural history, industrial archeology federal programs, downtown revitalization, and landmarks commissions.

Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

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

A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

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

Senior Thesis. 1-3 Hr. PR: Consent.

Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

A-Z. Global Service Learning. 3 Hr. PR: Consent.

Honors (HONR)

Orientation to Honors. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Research. I, II, S. 1-6 Hr. Independent research projects.

Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

Professional Field Experience. 1-9 Hr. PR: Consent. (May be repeated up to a maximum of 9 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-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

A-Z. Seminar. 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.

496. Senior Thesis. 1-3 Hr. PR: Consent.


498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

**Horticulture (HORT)**

220. General Horticulture. I. 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.

226. Flower Judging. II. 1 Hr. One laboratory period per week. Identification and judging of flowers with emphasis on the aesthetic values which underlie desirability in a variety.

227. Vegetable Identification and Judging. I. 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.

251. Floral Design. I. 3 Hr. Basic course in flower arrangement to cover occasions for the home and retail flower shop.

260. Woody Plant Materials. I. 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.) (Offered fall of odd years.)

262. Herbaceous Plant Materials. I. 3 Hr. Identification, description, adaptability, and evaluation of selected herbaceous annuals and perennials with emphasis on their use as design elements. (Offered fall of even years.)

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

420. Plant Propagation. II. 3 Hr. PR: PLSC 206 or consent. Study of practices of plant propagation and factors involved in reproduction in plants. (Offered spring of even years.)

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.

442. Small Fruits. I. 3 Hr. PR: PLSC 206, HORT 220, or Consent. (One 2-day field trip required.) Taxonomic, physiological, and ecological principles involved in production and handling of small-fruits. (2 hr. lec., 1 hr. scheduled lab.) (Offered in fall of odd years.)

443. Vegetable Crops. I. 3 Hr. PR: PLSC 206 or consent. (One 3-day field trip required.) Botanical and ecological characteristics influencing the production of vegetable crops. (2 hr. lec., 1 hr. lab.) (Offered in fall of even years.)

444. Handling and Storage of Horticultural Crops. I. 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.) (Offered in fall of odd years.)

445. Greenhouse Management. II. 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.

446. Tree Fruits. I. 3 Hr. PR: PLSC 206 or consent. Principles and practices involved in production of tree fruits. (2 hr. lec., 1 hr. scheduled lab.) (Offered in fall of even years.)

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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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

**Human Nutrition and Foods (HN and F)**

171. Introduction to Human Nutrition. I, II. 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.

271. Contemporary Issues in Nutrition. 3 Hr. PR: HNandF 171. Contemporary issues in nutrition including a critical review of food practices and recent trends in nutrition. (Odd years.)

293 A-Z. Special Topics. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.


350. Cross-Cultural Dietary Patterns. II. 4 Hr. PR: HNandF 171 and HNandF 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., 3 1/2 hr. lab.)
Courses

353. Food Service Systems Management. II. 4 Hr. PR: Dietetics major and MATH 126 or HNandF 350 and PR or Conc.: ENVM 241. Introduction to food service systems and systems management. Field experience in institutional and commercial food services.


472. Community Nutrition. 3 Hr. PR: HNandF 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.

474. Nutrition in Disease. II. 4 Hr. PR: HNandF 171; physiology or consent. Nutritional care aspects of patients. Modification of diet to meet human nutrition needs in various medical conditions.

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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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

Humanities (HUM)

101. Introduction to Western Civilization I, I. S. 3 Hr. Presents the high points of Greco-Roman and Medieval European civilizations: their art, architecture, philosophy, religion, literature and music.

102. Introduction to Western Civilization II. 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.

103. Honors Seminar in Humanities I. 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.

104. Honors Seminar in Humanities II. 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.

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.

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.

107. The Humanities of Egypt. 3 Hr. This course will focus on the cultural history of Egypt from ancient until modern times.

109. 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.

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.

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.

120. Humanities of China. 3 Hr. Introduction to the nature and role of philosophy, literature, and art in classical and contemporary China.

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.)

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.)

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.)

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.)

293 A-Z. Special Topics. 3 Hr. Investigation of topics not covered in regularly scheduled courses.
490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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

493 A-Z. Special Topics. 3 Hr. Investigation of topics not covered in regularly scheduled courses.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

**Industrial and Labor Relations (ILR)**

462. Collective Bargaining and Labor Relations. 3 hr. PR: Consent. Examination of the theory and practice of collective bargaining. Topics include economic and historical environment, labor law, unionization, contract negotiation, patterns in contract content, conflict resolution, grievance handling, and an introduction to arbitration.

494. Seminar. 1-3 hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

**Industrial Engineering (IENG)**

200. Fundamentals of Industrial Engineering. 1 Hr. PR: Sophomore standing. An introduction to the basic principles of industrial engineering.

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.


293. Special Topics. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

304. Materials and Costing. 3 Hr. PR: IENG 377 and MAE 243. Lectures and demonstrations concerning material properties, mechanical properties of materials, and costing systems for evaluating material costs and manufacturing costs.

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.

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.

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.

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.

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.

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.

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.

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.

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.


422. 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.

423. 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.


455. *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.

461. *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.

471. *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.


473. *Team Facilitation*, 3 Hr. This course prepares students to facilitate continuous improvement teams. Students learn basics of team operations, facilitation tools and facilitation practices.

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.

493 A-Z. *Special Topics*, 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar*, 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.

496. *Senior Thesis*, 1-3 Hr. PR: Consent.

498. *Honors*, 1-3 Hr. PR: Consent. Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

**Intensive English Program (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.

**Interior Design (ID)**

100. *Interior Design Peer Mentoring*, I. 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.

110. *Introduction to Interior Design*, I. 3 Hr. Design philosophy, elements and principles, analysis, and aesthetic and functional evaluation in the context of design as a means of human communication.

125. *Design Foundations*, I. 3 Hr. PR or CONC: ID 110. Application of the theoretical elements and principles of design to two and three dimensional compositions.


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.


230. *History of Interiors and Furniture 1*, I. 3 Hr. PR: Six hours of ID or consent. Interiors, furnishings, and decorative arts from antiquity through neoclassical periods in France, England, and America.

235. *Interior Design Graphics II*, 3 Hr. PR: ID 155. Studio course in spatial graphics; experience in constructing and using perspective grids; perspective drawing and basic color rendering.


270. *Interior Lighting Design*, II. 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.

293 A-Z. *Special Topics*, 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
325. Computer-Aided Drafting and Design. II. 2 Hr. PR: ID 376. Lecture/studio using computer-aided drafting and design for interior design; emphasis on CADD as a drafting tool.

355. Contract Interior Design 1. 3 Hr. PR: ID 375 and ID 376. Studio experience in contract interior design and problems; emphasis on design of offices as work experience.

375. Residential Interior Design. I, II. 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.

376. Interior Design Graphics 3. II. 2 Hr. PR: ID 155. Studio course to strengthen drafting, detailing, and presentation skills; production of typical design construction drawings.

356. Contract Interior Design 1. 3 Hr. PR: ID 270 and ID 260 and TXCL 240. Studio experience in contract interior design problems; emphasis on design process, problem solving, functional and aesthetic considerations, critiquing and graphic presentations.

400. Interior Design Internship. II. 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.


450. Interior Design Seminar. II. 1 Hr. PR: ID 420. Professionals in interior design discuss professional organizations, ethics, entry-level positions, and business practices.

455. Contract Interior Design 2. II. 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.

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.


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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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

International Studies (INTS)

199. Orientation to International Studies. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

488. Capstone International Studies. 3 Hr. Capstone experience required for all majors. Options include study abroad, internships, simulations, and senior research projects.

Italian (ITAL)

101. Elementary Italian 1. 3 hr.


203. Intermediate Italian 1. 3 hr. PR: ITAL 102.

204. Intermediate Italian 2. 3 hr. PR: ITAL 203. Continuation of ITAL 203.

293. Special Topics. 1-3 hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

303. Composition and Conversation. 3 hr. PR: ITAL 204.

304. Advanced Conversation. 3 hr. PR: ITAL 204.

490. Teaching Practicum. 1-3 hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 Special Topics. 1-3 hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

496. Senior Thesis. 1-3 hr. PR: Consent.

498. Honors. 1-3 hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study, or research.

Japanese (JAPN)

101. Elementary Japanese 1. 3 hr.


204. Intermediate Japanese 2. 3 hr. PR: JAPN 203.

293. Special Topics. 1-3 hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. Advanced Japanese 1. 3 hr. PR: JAPN 204.

302. Advanced Japanese 2. 3 hr. PR: JAPN 301.


304. Advanced Japanese 4. 3 hr. PR: JAPN 303.

490. Teaching Practicum. 1-3 hr. PR: Consent. Teaching practice as a tutor or assistant.

491. Professional Field Experience. 1-18 hr. PR: Consent (May be repeated up to 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.

493. Special Topics. 1-3 hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. Seminar. 1-3 hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. Senior Thesis. 1-3 hr. PR: Consent.

498. Honors. 1-3 hr. PR: Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

**Journalism (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.

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.”

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.)

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.)

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.)

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.

293 A-Z. Advanced Journalism Problems. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.)

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.)


421. Mass Communications Research Methods. 3 Hr. A broad study of scientific and critical research methods as they apply to mass media practices; review of relevant sources for historical data gathering, readership, and audience analysis; evaluation of marketing and public opinion research. (2 hr. lec., 1 hr. field experience.)

431. Multimedia Reporting. 3 Hr. PR: JRL 220 or Consent. Reporting/production for online media, Ethics and role of visual journalist. Software basics and use of audio, video and still photography in online reporting.

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.

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.)

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. eight-20 hours per week for a minimum of 10 weeks, while taking other courses. (Graded on a Pass/Fail basis.)
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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Graded on a Pass/Fail basis.)

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. (Graded on a Pass/Fail basis.)

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Landscape Architecture (LARC)

105. Introduction to Landscape Architecture. I, II. 3 Hr. A general overview of the field of landscape architecture, environmental design and planning.

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.)

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.)

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.)

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.)

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.)

231. Landscape 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.)

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.)

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.)

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.)

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.)

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.)

331. Landscape Architectural Construction 2. II. 4 Hr. PR: LARC 330. Study and preparation of parkway plans (road alignment), surface and sub-surface drainage plans, advanced grading plans, and cost estimates. (2 hr. lec., two 3-hr. studios.)

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.)

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.)

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.) (2 day field trip required at student’s expense.)

361. Interior Plantscaping. II. 2 Hr. PR: BIOL 101 and BIOL 103, 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.)

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.)
450. Advanced Landscape Architectural Design I. 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.) (Four-day field required at student’s expense.)

451. Advanced Landscape Architectural Design II. 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.)

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.)

455. 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.)

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 even years.)

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.)

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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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

Language Teaching Methods (LANG)

293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

421. The Teaching of Foreign Languages. 3 Hr. PR: Consent. Required of all students who are prospective foreign language teachers on the secondary level.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.)

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.

492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study, or research.

Leadership Studies (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.

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.

382. Readings in Leadership. 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.

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 service-learning course to suit their own majors and interests.
### Library Science (LS)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100.</td>
<td>Using Books and Libraries</td>
<td>I, II</td>
<td>1 Hr.</td>
<td>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.</td>
</tr>
<tr>
<td>401.</td>
<td>Reference and Bibliography</td>
<td>I, II</td>
<td>3 Hr.</td>
<td>Basic reference materials in print and non-print formats (dictionaries, encyclopedias, indexes, yearbooks, computerized data bases, etc.) are studied and evaluated. Emphasizes theory of information seeking and practical experience with materials. Presently required for School Library Media certification in West Virginia.</td>
</tr>
<tr>
<td>402.</td>
<td>Professional Field Experience</td>
<td>I, II</td>
<td>S. 1-18 Hr.</td>
<td>Faculty supervised study of topics not available through regular course offerings.</td>
</tr>
<tr>
<td>404.</td>
<td>Young Adult Literature</td>
<td>I, II</td>
<td>3 Hr.</td>
<td>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.</td>
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<tr>
<td>405.</td>
<td>Independent Study</td>
<td>I, II</td>
<td>1-6 Hr.</td>
<td>Faculty supervised study of topics not available through regular course offerings.</td>
</tr>
<tr>
<td>406.</td>
<td>Teaching Practicum</td>
<td>I, II, S.</td>
<td>1-3 Hr. PR: Consent</td>
<td>Teaching practice as a tutor or assistant.</td>
</tr>
<tr>
<td>407.</td>
<td>Honors</td>
<td>I, II</td>
<td>S. 1-3 Hr. PR: Consent</td>
<td>Students in Honors Program and consent by the Honors Director. Independent reading, study or research.</td>
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</tbody>
</table>

### Linguistics (LING)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101.</td>
<td>Introduction to Language</td>
<td>3 Hr.</td>
<td>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.</td>
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<tr>
<td>102.</td>
<td>Structure of German</td>
<td>3 Hr.</td>
<td>Description of the phonological or grammatical systems of German, with emphasis on contrastive analysis (German/English) and applied linguistics.</td>
<td></td>
</tr>
<tr>
<td>103.</td>
<td>Structure of Modern French</td>
<td>3 Hr.</td>
<td>Comparison of various Indo-European languages.</td>
<td></td>
</tr>
<tr>
<td>293.</td>
<td>Special Topics</td>
<td>1-6 Hr.</td>
<td>Investigation of topics not covered in regularly scheduled courses.</td>
<td></td>
</tr>
<tr>
<td>301.</td>
<td>Introduction to Structural Linguistics</td>
<td>3 Hr. PR: FRCH 203 or GER 203 or JAPN 203 or RUSS 203 or SPAN 203 or equivalent</td>
<td>A detailed examination of language structure (phonology, morphology, syntax, and semantics) and its relation to language use (sociolinguistics).</td>
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<tr>
<td>302.</td>
<td>Structure of Spanish</td>
<td>3 Hr. PR: 18 Hr. of Spanish and LING 311 or Consent</td>
<td>Description of the phonological or grammatical systems of Spanish, with emphasis on contrastive analysis (Spanish/English) and applied linguistics.</td>
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<tr>
<td>303.</td>
<td>Structure of Modern French</td>
<td>3 Hr. PR: 18 Hr. of French and LING 311 or Consent</td>
<td>Study of phonology, morphology, and syntax of modern French together with a contrastive analysis of French and English.</td>
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<tr>
<td>304.</td>
<td>Structure of German</td>
<td>3 Hr. PR: 18 Hr. of German and LING 311 or Consent</td>
<td>Phonological, morphological and syntactical structure of contemporary German language.</td>
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<tr>
<td>311.</td>
<td>Introduction to Structural Linguistics</td>
<td>3 Hr. PR: FRCH 203 or GER 203 or JAPN 203 or RUSS 203 or SPAN 203 or equivalent</td>
<td>Required for foreign language majors. A detailed examination of language structure (phonology, morphology, syntax, and semantics) and its relation to language use (sociolinguistics).</td>
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<tr>
<td>312.</td>
<td>Syntax</td>
<td>3 Hr. PR: LING 101 or LING 311</td>
<td>Emphasis on generative syntax in English, German, Romance, and Slavic languages.</td>
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<tr>
<td>490.</td>
<td>Teaching Practicum</td>
<td>1-3 Hr. PR: Consent</td>
<td>Teaching practice as a tutor or assistant.</td>
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<tr>
<td>491.</td>
<td>Professional Field Experience</td>
<td>1-18 Hr. PR: Consent</td>
<td>Faculty supervised study of topics not available through regular course offerings.</td>
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<tr>
<td>492.</td>
<td>Directed Study</td>
<td>1-6 Hr.</td>
<td>Directed study, reading, and/or research.</td>
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<tr>
<td>493.</td>
<td>Special Topics</td>
<td>1-6 Hr. PR: Consent</td>
<td>Investigation of topics not covered in regularly scheduled courses.</td>
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<tr>
<td>494.</td>
<td>Seminar</td>
<td>1-3 Hr. PR: Consent</td>
<td>Investigation of topics not covered in regularly scheduled courses.</td>
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<tr>
<td>495.</td>
<td>Independent Study</td>
<td>1-6 Hr.</td>
<td>Faculty supervised study of topics not available through regular course offerings.</td>
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<tr>
<td>496.</td>
<td>Senior Thesis</td>
<td>I, II</td>
<td>1-3 Hr. PR: Consent</td>
<td></td>
</tr>
<tr>
<td>498.</td>
<td>Honors</td>
<td>I, II</td>
<td>1-3 Hr. PR: Consent</td>
<td>Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.</td>
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</tbody>
</table>
Management (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.

351. Database Management Systems. 3 Hr. PR: BCOR 330. Introduction to database theory, design, implementation, management, and models; development of database applications for management systems.

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.

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.

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.

360. International Business. 3 Hr. PR: BCOR 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.

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.

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.

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.

428. Management Science 1. 3 Hr. PR: BCOR 370. Study and application of quantitative methods to business problems in which deterministic conditions prevail.

429. Management Science 2. 3 Hr. PR: MANG 428. Study and application of quantitative methods to business problems in which probabilistic conditions prevail.

430. Personnel Management. 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 appraisal, compensation, safety and health, and labor relations.

432. Personnel and Compensation. 3 Hr. PR: MANG 430. 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.

434. Human Resource Management Research Methods. 3 Hr. PR: MANG 430. Research methods and measurement in human resource management; philosophy of science, ethics in research, research design, and analytical methods.

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.

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.

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.


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

495. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research 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.
Marketing (MKTG)

310. Marketing Research. 3 Hr. PR: BCOR 350. Scientific approach to the solution of marketing problems with emphasis on research methods and techniques.

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.

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.

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.

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.

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.

400. 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.

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.

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.

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.

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.

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.)

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-6 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Mathematics (MATH)

22. Algebra. I, II. 3 Hr. PR: One year of high school algebra. Covers the material of high school algebra through quadratics. Credits earned in MATH 22 are not counted in the 64 hours required for graduation in pre-baccalaureate programs at Potomac State College. (Not offered on the Morgantown campus–several alternative options are available, including a non-credit, student-funded Pre-College Algebra Workshop, which is designed specifically to prepare students for College Algebra.)

121. Introductory Concepts of Mathematics. I, II. 3 Hr. (Designed for non-science majors who do not need the techniques of mathematics for other course work in their programs.) Topics in modern mathematics.

124. College Algebra for Applications. I, II, S. 3 Hr. PR: Two units of algebra, 1 unit geometry, and satisfactory performance on departmental placement exam; or successful completion of pre-college algebra workshop or its equivalent. Review of real number system and algebraic expressions, equations, inequalities, systems of equations and inequalities, graphing, functions, mathematics of finance, basic matrix operations, linear programming. This course is not open to students who have credit for MATH 126, MATH 129, or equivalents.) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

126. College Algebra. I, II, S. 3 Hr. PR: 2 units of algebra, 1 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, basic matrix operations and properties systems of equations, polynomials, counting, and probability. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.
128. Plane Trigonometry. I, II. 3 Hr. PR: 2 units of algebra, 1 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.

129. Pre-Calculus Mathematics. I, II. 4 Hr. PR: 2 units algebra and 1 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.

150. Introduction to Calculus. I, II, S. 3 Hr. PR: MATH 126 or MATH 129 or MATH 124 or Consent. For 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.

155. Calculus 1. I, II, S. 4 Hr. PR: 2 units algebra, 1 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.

156. Calculus 2. I, II. S. 4 Hr. PR: MATH 155 Techniques of integration, applications of the definite integral, polar coordinates, indeterminate forms, infinite series.

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.)

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.)

218. History of Mathematics. I. 3 Hr. PR: MATH 155. Development of mathematics through calculus, with emphasis on mathematical techniques and principles of each period and their historical evolution.

222. Numerical and Symbolic Methods in MATH/STAT. I, II. 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.)

231. Algebra and Geometry for Elementary Teachers. I, II. 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.

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.

251. Multivariable Calculus. I, II. S. 4 Hr. PR: MATH 156. Introduction to solid analytic geometry, vector algebra, matrix algebra, calculus of several variables.


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 Godel’s proof of the incompleteness of arithmetic. (Equiv. to PHIL 360.) (Not offered on a regular basis.)

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.

293. Special Topics. I, II. S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

332. Introduction to Mathematics for the Elementary Teacher 2. I, II. S. 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.

341. Introduction to Algebraic Structures. II. 3 Hr. PR: MATH 283 or consent. A study of groups, rings, and fields together with their substructures, quotient and products, morphisms; the fundamental homomorphism theorems.

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.

364. Mathematics of Compound Interest. II. 3 Hr. PR: MATH 156 or MATH 150. A problem-solving course focusing on the measurement of interest, annuities, amortization schedules, and sinking funds, and the valuation of bonds and other securities.


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.

378. Discrete Mathematics. II, III. 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.)

381. Topology. II, III. 3 Hr. PR: MATH 283 or consent. Introduction to metric and topological spaces. Topics include: continuity, convergence, separation, compactness, and connectedness.

420. Numerical Analysis 1, 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 squares approximations. (Equiv. to CS 460.)

421. Numerical Analysis 2, III. 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.

441. Applied Linear Algebra. I, II, III. 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.


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.

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.


480. Mathematical Logic 2. 3 Hr. PR: MATH 280 or PHIL 360.

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

491. Professional Field Experience. I, II, III. 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.

493 A-Z. Special Topics. I, II. S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

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

495A. Independent Study. 1-6. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. I, II. S. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Mechanical and Aerospace Engineering (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.)

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.)

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.

242. Dynamics. 3 Hr. PR: MAE 241 and MATH 156. Newtonian dynamics of particles 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.)

243. Mechanics of Materials. 3 Hr. PR: MAE 241 and MATH 156. Stress, deformation, and failure of solid bodies under the action of forces. Internal force resultants, stress, strain, Mohr’s circle, mechanical properties of materials, generalized Hooke’s Law. Axial, bending and buckling loads and combinations. (3 hr. lec.)
Courses


293. Special Topics. I, II, S 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

299A-C. Special Problems. 1-6 Hr. PR: Consent.

316. Analysis of Engineering Systems. 3 Hr. PR: ENGR 102 and MATH 261 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.

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.)

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.)

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.)

331. Fluid Mechanics. 3 Hr. PR: 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.)


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.


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.)

411. Advanced Mechatronics. 3 Hr. PR: MATH 261 and MAE 211 and EE 221 and PR or CONC: EE 222. Instrumentation and measurements emphasizing systems that combine electronic 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.)

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.)


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.)

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.)


427. Heating, Ventilating, and Air Conditioning. 3 Hr. PR: MAE 321 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.)

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.)

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.)
446. Mechanics of Composite Materials. 3 Hr. PR: MATH 251 and MAE 243. Fundamental methods for structural analysis of fiber reinforced composites. Characteristics of composite applications in design and manufacturing of structural components: performance tailoring, failure criteria, environmental effects, joining and processing. (3 hr. lec.)

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.)

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.)

454. Machine Design and Manufacturing. 3 Hr. PR: MAE 342 and MAE 343. Mechanical design of mechanical elements such as shaft systems, bearings, gears, springs, screws and fasteners, clutches and brakes, and flexible drive elements. Design for manufacturability considerations. (3 hr. lec.)

456. CAD and Finite Element Analysis. 3 Hr. PR: (MAE 342 or MAE 345) and MAE 343. Computer-aided design fundamentals, finite element concepts and solution techniques. Exposure to CAD and finite element packages. Design case studies. (3 hr. lec.)


461. Applied Feedback Control. 3 Hr. PR: MAE 480 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.)

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.)

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.)

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 Skywagon airplane. Flight test data analysis and report preparation. (1 hr. lec., 6 hr. lab.)

469. Microprocessor 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.)

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.)

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.)

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.)

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.)

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. (1 hr. lec., 6 hr. lab.)

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.)

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.


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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Medical Technology (MTEC)

100. Medical Technology. 1 Hr. Introduction to the profession of medical technology and the clinical laboratory specialties. (Pass/Fail grading only.)

101. Medical Technology. 2. II. 1 Hr. Continuation of MTEC 100.

200. Medical Technology Terminology. 1 Hr. General medical and basic medical technology terminology.

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.)

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.

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.

329. Basic Clinical Chemistry. 1 Hr. PR: Students in Medical Technology Program. Basic clinical chemistry procedures and theory. (1 hr. lec.)

381. Research and Educational Methodology. 2 Hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.

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.

402. Rural Health Practicum. 1 Hr. PR: Senior Year MT Program. Enrichment rotations in rural settings in West Virginia. (Grading will be Pass/Fail.)

403. Community Service Practicum. 1 Hr. PR: Senior year MT Program. Students will spend time performing community service projects. (Grading will be Pass/Fail.)

420. Immunohematology and Blood Banking. 3 Hr. Lectures on immunohematology and blood banking theory and practice.

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.

430. Clinical Chemistry. 3 Hr. Lectures in clinical chemistry analysis, clinical significance, and implications of diagnosis with laboratory practice in methods of measurement.

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.

440. Clinical Hematology. 3 Hr. Lectures in hematologic theory and practice, including coagulation and body fluids laboratory.

441. Clinical Hematology Laboratory. 3 Hr. PR: MTEC 440. Application of hematological principles to laboratory medicine. Emphasis on routine and specialized procedures, evaluation, and problem-solving.

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.

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 antibigrams.
460. Clinical Laboratory Instrumentation. 2 Hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.

465. Clinical Laboratory Management. 2 Hr. Laboratory organization and principles of laboratory management.

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.)

470. Clinical Microscopy. 1 Hr. PR: Senior standing in Medical Technology or consent. The analysis of body fluids (urine, fluids, etc.) for abnormalities.

471. Clinical Microscopy Laboratory. 1 Hr. PR: Senior standing in Medical Technology, or consent. Laboratory practicum in urinalysis, and other procedures.

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.

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr.

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

495. Independent Study. 1-6 Hr.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research

Microbiology and Immunology (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.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

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.)

197. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

200. Medical Microbiology. 3 Hr. PR: CHEM 111 and CHEM 112.

220. Pathogenic Microbiology. (For pharmacy students.) 4 Hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.

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.

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.


302. Microbiology. (For Dental students only.) I. 5 Hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.

310. Structure and Activities of Microorganisms. II. 2-7 Hr. PR or Conc.: Biochemistry, Consent. Molecular biology of ecoli and other selected organisms.

311. Prin Infection and Resist. 1-5 Hr.

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.
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.

325. Medical Mycology. 4 Hr.

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.


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 a dissertation. (Grading may be S/U.)

399. Special Topics in Microbiology, Cell Biology. II. 3 Hr. PR: Biochemistry; 1 yr. undergraduate biology; consent. Lectures in selected areas of cell biology.

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.)

491 A-Z. Advanced Topics. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

492. Directed Study. I, II, S. 1-6 Hr. Directed study, readings, and/or research.

493 A-Z. Special Topics. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

494 A-Z. Seminar. 1-6 Hr. PR: Consent. Seminars arranged for advanced graduate students.

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.

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

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.)

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.)

499. Graduate Colloquium. 1-6 Hr. PR: Consent. For graduate students not seeking coursework 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 coursework 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)

Army ROTC

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.

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.

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.

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.

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.

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.


494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Minerals (M)

105. Energy in Appalachia. I. PR: None. Introduction to coal, oil, and natural gas industries in Appalachia; emphasis on social, cultural, economic, and technical developments.

190. Teaching Practicum. 1-3 hr.
Mining Engineering (MINE)

201. 

Mine Surveying. I. 3 Hr. Principles of surveying; field experience in underground and surface surveying with map work and calculations.

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.

206. 

Surface Mining Systems. II. 4 Hr. PR: GEOL 101. Surface mining methods, surface mining equipment, explosives and blasting design fundamentals, and slope stability.

207. 

Engineering CAD. 2 Hr. 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.


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.

305. 

Coal Mining. I. 3 Hr. PR: Junior standing or Consent. Not open to mining engineering students.) Introduction to elements of coal mining.

306. 

Mineral Exploration and Evaluation. I, 3 Hr. PR: GEOL 342 and STAT 211. Methods and procedures for mineral reconnaissance and exploration; geological considerations, various prospecting and exploration techniques, reserve estimation, and engineering economy.

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.

327. 

Coal Preparation. 4 Hr. PR: MATH 156 and CHEM 116. Coal formation, petrography and characteristics; principles of coal beneficiation, washability analysis and cooking; colloid characteristics and flotation; unit operations of concentration, flotation, agglomeration, dewatering and tailings disposals.

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.

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.

343. 

Industrial Safety Engineering. I. 3 Hr. PR: Senior 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.

376. 

Mine and Mineral Reserve Valuation. I. 3 Hr. PR: Senior standing. Methods used to value mineral properties; factors affecting value of mineral properties.

381. 

Applied Mineral Computer Methods. I. 3 Hr. PR: ENGR 102 and MATH 156. Problem solving in mineral processing, mineral resources, mining, and petroleum engineering. Emphasis on applications using various computing technologies.

392. 

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.

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.

411. 

Rock Mechanics and Ground Control. I. 4 Hr. PR: MINE 205 and MINE 206 and MAE 241 and MAE 243 and GEOL 342. Rock properties and behavior, in-situ stress field, mine layout and geological effects; design of entry, pillar, and bolt systems, convergence and stress measurements, surface subsidence, roof control plan, slope stability, and laboratory sessions.

414. 

Rock Mechanics. I. 3 Hr. PR: MAE 243 or Consent. Elastic and plastic properties of rock, Mohr’s criteria of failure, elastic theory, stress distributions around underground openings, open pit and underground stability, rock testing techniques.

427. 

Coal Preparation. 4 Hr. PR: MATH 156. Coal formation, petrography, and characteristics; principles of coal beneficiation, washability analysis and cooking; colloid characteristics and flotation, unit operations of concentration, flotation, agglomeration, dewatering, and tailings disposals.
Introduction to Technology and Society 2. I, II, 3 Hr. PR: MDS 128. (May be credited to University LSP Cluster B.) Continuation of MDS 91.

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.

Orientation to MDS. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

Introduction to Gerontology. I, II, 3 Hr. PR: Sophomore standing. (May be credited to University LSP Cluster B.) Introduction to biological, psychological, and sociological processes and problems associated with human aging, with attention to selected social policies.

Courses
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.

230. Introduction to Celtic Studies. 3 Hr. PR: ENGL 101. A team-taught, multi-disciplinary course focusing on ancient and contemporary Celtic cultures (Britany, Cornwall, Ireland, Isle of Man, Scotland, Wales). Course topics include history, religion, myth, literature, language, politics, art and music.


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.


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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Music (MUSC)

100. Band: Wind Symphony. I, II. 0-2 Hr. (May be repeated for credit.)

100A. Band: Concert Band. I, II. 0-2 Hr. (May be repeated for credit.)

100B. Band: Varsity Band. I, II. 0-2 Hr. (May be repeated for credit.)

100C. Band: Symphonic Band. I, II. 0-2 Hr. (May be repeated for credit.)

100D. Band: Marching Band. I, II. 0-2 Hr. (May be repeated for credit.)

101. Glee Club. 1 Hr.

102. University Choral Union. I, II. 0-1 Hr. (May be repeated for credit.)

103. Orchestra. I, II. 0-2 Hr. (May be repeated for credit.) University-community symphony orchestra, opera orchestra, musical theatre orchestra.

104. 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.

105. University Choir. I, II. 0-2 Hr. (May be repeated for credit.)

105A. University Choir: Concert. I, II. 0-2 Hr. (May be repeated for credit.)

106. Applied Music: Bassoon. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

107. Applied Music: Cello. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

108. Applied Music: Clarinet. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

109. Applied Music: Euphonium. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

110. Applied Music: Flute. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement is required.

111. Applied Music: Guitar. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement is required.

112. 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.

113. Applied Music: Harpsichord. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

114. Applied Music: Horn. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.

115. Applied Music: Oboe. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
116. Applied Music: Percussion. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
117. Applied Music: Percussion Drum Set. I, II. (May be repeated for credit.) Audition for placement required.
118. Applied Music: Piano. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
119. Applied Music: Pipe Organ. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
120. Applied Music: Saxophone. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
121. Applied Music: String Bass. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
122. Applied Music: Trombone. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
123. Applied Music: Trumpet. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
124. Applied Music: Tuba. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
125. Applied Music: Viola. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
126. Applied Music: Violin. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
127. Applied Music: Voice. I, II. 1-4 Hr. (May be repeated for credit.) Audition for placement required.
130. Piano Class Level 0. I, II. 1 Hr.
131. Piano Class Level 1/2. I, II. 1 Hr. Auditorium for placement is required.
132. Piano Class Level 1. I, II. 1 Hr. Auditorium for placement is required.
133. Piano Class Level 2-2 1/2. I, II. 1-2 Hr. (May be repeated for credit.) Auditorium for placement is required.
134. Piano Class Advanced. I, II. 1-2 Hr. (May be repeated for credit.) Auditorium for placement is required.
135. Guitar Class 1. I, II. 1 Hr. (May be repeated for credit.)
136. Guitar Class 2. I, II. 1 Hr. (May be repeated for credit.) PR: MUSC 136 or permission.
137. Voice Class 1. I, II. 1-2 Hr. (May be repeated for credit.)
138. Voice Class 2. I, II. 1-2 Hr. (May be repeated for credit.) PR: MUSC 139 or permission.
139. Chamber Music: Brass. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
140. Chamber Music: Guitar. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
141. Chamber Music: Piano 4 Hand. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
142. Chamber Music: Strings. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
143. Chamber Music: Woodwind. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
144. Chamber Music: Vocal. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
145. Chamber Music: Mixed Ensemble. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
146. Chamber Music: Mountaineer Singers. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
147. Chamber Music: New Music. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
148. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149A. Chamber Music: Brass Choir. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149B. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149C. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149D. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149E. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149F. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149G. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149H. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149I. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149J. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149K. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

149L. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149M. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149N. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149O. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149P. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149Q. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149R. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149S. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149T. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149U. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149V. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149W. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149X. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
149Y. Chamber Music: Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
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.

150. Chamber Music: Freshman Percussion. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
151. Chamber Music: Percussion 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
152. Chamber Music: Percussion 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
153. Chamber Music: Percussion 3. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
154. Chamber Music: Gamelan. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
155. Chamber Music: Steel Band 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
156. Chamber Music: Steel Band 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
157. Chamber Music: Steel Band 3. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
158. Chamber Music: Ethnic. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
159. Chamber Music: Percussion Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
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.)
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, and non-harmonic tones.
162. Written Theory 1. I. 2 Hr. Elementary theory (scales, keys, triads, and dominant seventh chords) and introduction to diatonic harmony (part-writing and analysis.)
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.
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.
166. 20th Century American Pop Music. 3 Hr. Introduction to history and development of American popular music.
167. 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.
168. 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.
169. 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.
The text appears to be a catalog of courses with descriptions and prerequisites. Here is a brief summary of the key points:

- **Introduction to Music**: 1, 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.

- **Music in Appalachia**: 1. (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.

- **Music in Western Culture**: 1. 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.

- **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.

- **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.

- **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.

- **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.

- **Introduction to Music Listening**: I, 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.

- **Fundamentals of Conducting**: 1, II. 2 Hr. PR: MUSC 200 or consent. Development of techniques of score study; rehearsal preparation. Rehearsals of laboratory ensemble. Study of string, wind, and choral scores.

- **Conducting and Score Interpretation**: I, II. 2 Hr. PR: MUSC 200 or consent. Development of techniques of score study; rehearsal preparation. Rehearsals of laboratory ensemble. Study of string, wind, and choral scores.

- **Conducting and Rehearsing**: I, II. 2 Hr. PR: MUSC 201 or consent. Intensive study of wind, choral, and orchestral scores, rehearsed by the laboratory ensemble. Conducting of a major performance ensemble in rehearsal.


Courses

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.


266. Orchestration and Band Arranging. II. 2 Hr. PR: MUSC 265. Problems in scoring for orchestra and band.

267. Choral Arranging. 2 Hr.

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.

271. History of Western Musical Traditions 2. II. 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.

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.

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.

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.

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.

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


293 A-Z. Special Topics. I, II. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

300. Composition. I. 2 Hr. PR: MUSC 264 or consent. (May be repeated for credit; max. 8 Hr.) Creative writing.

301. 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.)

302. 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.)

303. 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).


305. 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.

311. 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.

312. Methods and Pedagogy. I. 0-2 Hr. PR: Junior standing or consent.

313. Methods and Pedagogy. II. 1-2 Hr. PR: MUSC 432 or consent.

314. Repertoire. I. 0-2 Hr.

315. Repertoire: Voice. II. 0-2 Hr.

348A. Repertoire: Piano. II. 0-2 Hr.

348B. Repertoire: Other. II. 0-2 Hr.

348C-Z. Repertoire. II. 0-2 Hr.

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.
492J. Directed Study: Chamber Music in France. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492K. Directed Study: Graduate Theory Review. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

492L. Directed Study: Music Education. I, II, S. 1-3 Hr. Directed study, reading and/or research.

492M. Directed Study: Introduction to World Music. I, II, S. 1-3 Hr. Directed study, reading and/or research.

492N. Directed Study: Recording Technology. I, II, S. 1-3 Hr. Directed study, reading and/or research.

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

Native American Studies (NAS)

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.


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 freshmen.

491 A-Z. Special Topics. I, II. S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. Seminar. 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.

499. Global Service Learning. 3 Hr.

News-Editorial (N-E)

408. The Community Newspaper. 2 Hr. (Open to all University students.) Fundamental problems and techniques in operation of community newspapers.

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.)

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 conference stresses story building and revision. (Lab fees will be assessed for this course.)

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.

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 and public agencies, including circuit court, police to develop and publish stories. (Lab fees will be assessed for this course.)


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.

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (Course will be graded on a Pass/Fail basis.)

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.)

493 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
Physiological system dysfunction. The emphasis is on the professional nursing role in complex physiological health restoration and critical thinking; examines family health assessment.

Nursing (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.


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.

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.

245. Nursing Interventions 2. 4 Hr. PR: NSG 221 and NSG 225 and 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.

251. Basic Concepts of Nursing. 3 Hr. PR: B.S./B.A./B.S.N. 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.

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.

322. Concepts: Pediatric Health. 2 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 children.

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.

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.

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.

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.

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.

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.


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.


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.

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.

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 pathological physiology. Particular emphasis is on patient/family teaching of pharmacological goals in order to maximize health potential.

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.
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.

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.

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.

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.

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.

441. Concepts: Community. 3 Hr. PR: Senior standing in nursing or consent. Co-Req: 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.

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.

445. Interventions: Community. 5 Hr. PR: Senior standing in nursing or consent. Co-Req: 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 across the life span. Focus on vulnerable populations.

455. Interventions: Capstone. 1 Hr. PR: Senior standing in nursing or Consent. Co-Req: NSG 441 and NSG 445. Synthesis of theoretical and practical knowledge acquired in undergraduate nursing career. Emphasis critical thinking, ethical decision-making and civic responsibility in the design and implementation of a service-learning project addressing a community health need.

463. 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.

481. Cardiac Nursing. 2 Hr. Web-based. Mastery format. NSG juniors and seniors. Introduction to the interpretation and treatment of cardiac arrhythmias.

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.

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.

488. 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.

497. Research. 1-6 Hr. Independent research projects.

498. Honors. I, II, 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study or research.

Occupational Therapy (OTH)

300. Essentials of Clinical Anatomy. 4 Hr. PR: OTH student status. A study of human gross anatomy, micro anatomy and embryology with major emphasis on the musculoskeletal system.

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.


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.

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.


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.

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.

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.)

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.)


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.

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.

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.

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.


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.


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.

493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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


**Orientation (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.

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.
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.

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.

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.

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.

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.

165. Starting Your Career. 1 Hr. This class helps students prepare for the issues they will encounter early in their careers.

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.)


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.)

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.)


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). Preadmitted 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.

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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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

Pathology (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.

302. Oral Pathology. II. 3 hr. PR: PATH 301, dental hygiene major, or Consent. Application of fundamental knowledge of general pathology to pathologic conditions that occur in the oral cavity.

Petroleum and Natural Gas Engineering (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.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.


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.

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.

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, rheological models, and liquid and solid determination.

332. Petroleum Properties and Phase Behavior. 3 Hr. PR: Junior standing. Theoretical and applied phase behavior of hydrocarbon systems and hydrocarbon fluid properties. Applications to petroleum reservoir and production engineering design. (2 hr. lec., 3 hr. lab.)

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.

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.

420. Production Engineering. 3 Hr. PR: PNGE 310. Well completion, performance of productive formulation, drill stem tests, completion of wells, flowing wells, gas lift methods and equipment, pumping installation design, well stimulation, emulsion, treating, gathering and storage of oil and gas, field automation. (3 hr. lec.)

432. Petroleum Reservoir Engineering Laboratory. 1 Hr. PR or CONC: PNGE 333. Laboratory evaluation of basic and special petroleum reservoir rock properties. (3 hr. lab.)

434. Applied Petroleum Reservoir Engineering. 3 Hr. PR: PNGE 333 and PR or CONC: STAT 215 or IENG 213. Application of reservoir engineering data to calculation of recovery potentials and to analysis, simulation and prediction of reservoir performance under a variety of production methods to effect maximum conservation.

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.

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.

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.

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.)

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 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.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Pharmacology and Toxicology (PCOL)

260. Pharmacology. II. 3 Hr. Interactions of clinically useful therapeutic agents with the mammalian systems.

Pharmacy (PHAR)

449. Drugs and Medicines. I. 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.

497. Research. 1-6 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Philosophy (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.

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.

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.
140. Historical Introduction to Philosophy. 3 Hr. An introductory survey of the major philosophers and philosophical movements from ancient times to the present.

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.

210. Philosophy of Fundamentalism. 3 Hr. Christian fundamentalism as philosophy; analysis of traditional doctrines for rational defense of inerrantist interpretation.

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.

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.

260. Introduction to Symbolic Logic. I, II. 3 Hr. 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.

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 191.) (Not offered every year.)

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.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

304. Feminist Philosophy. 3 Hr. PR: 3 Hr. philosophy. An examination of fundamental metaphysical, methodological, ethical and legal issues in feminist philosophy.

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.

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.

310. Philosophy of Science. 3 Hr. PR: 3 Hr. philosophy or science major. Philosophical problems associated with the concepts and methodology of science.

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.

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.

323. Social and Political Philosophy. I. 3 Hr. PR: 3 Hr. philosophy or political science major. 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.

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.

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.

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.

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.

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.

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.

353. Analytic Philosophy. 3 Hr. PR: 3 Hr. philosophy. A critical study of twentieth-century Western analytical philosophy (for example, Russell, Logical Positivism, Wittgenstein).

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.
355. Existentialism. 3 Hr. PR: 3 Hr. philosophy or literature course in existentialism. Survey of the major existentialist thinkers.

360. Mathematical Logic I. 3 Hr. PR: PHIL 260. Axiomatic method, “naive” and axiomatic set theory, Russell’s Paradox, infinity and unaccountability, "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.)

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.


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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

492. Directed Studies. 1-3 Hr. Directed study, reading, and/or research.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. II. 3 Hr. PR: 12 Hr. in philosophy, 6 Hr. at the 200 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.

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

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.

497. Research. 1-6 Hr. PR: Consent. Independent research projects.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Physical Education (PE)

101. Badminton. 1 Hr. Introduction to beginning knowledge and skills in badminton.

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.

104. Intermediate Basketball. 1 Hr. Introduction to intermediate knowledge and skills in basketball.

107. Basketball Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for basketball.

108. Football Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for football.

109. Baseball Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for baseball.

110. Military Physical Conditioning. 1 Hr. Introduction to basic conditioning techniques for military training.

111. Air Force Military Physical Conditioning. 1 Hr. Introduction to basic conditioning techniques for military training.

112. Gymnastics Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for gymnastics.

113. Soccer Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for soccer.

114. Tennis Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for tennis.

115. Volleyball Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for volleyball.

116. Wrestling Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for wrestling.

118. Swim Conditioning/Weight Training. 1 Hr. Introduction to basic conditioning and weight training techniques for swimming.

120. Canoeing. 1 Hr. PR: Swimming skill. Types of canoeing strokes, life-saving techniques for recreational canoeing.

122. Billiards. 1 Hr. Introduction to beginning knowledge and skills in billiards.

123. Advanced Billiards. 1 Hr. Introduction to advanced knowledge and skills in billiards.

125. Aerobics. 1 Hr. Introduction to beginning knowledge and skills in aerobics.

126. Aqua Aerobics. 1 Hr. Introduction to beginning knowledge and skills in aqua aerobics.
127. Clogging. 1 Hr. Introduction to beginning knowledge and skills in clogging.
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.
130. Flag Football. 1 Hr. Introduction to beginning knowledge and skills in flag football.
131. Frisbee. 1 Hr. Introduction to beginning knowledge and skills in frisbee.
134. Gymnastics. 1 Hr. Introduction to beginning knowledge and skills in gymnastics.
135. Horsemanship 1. 1 Hr. Introduction to beginning knowledge and skills in horsemanship.
136. Horsemanship 2. 1 Hr. Introduction to intermediate and advanced knowledge in horsemanship.
137. Ice Skating. 1 Hr. Introduction to beginning knowledge and skills in ice skating.
138. Snow Skiing. 1 Hr. Introduction to beginning and intermediate knowledge and skills in snow skiing.
144. Aikido. 1 Hr. Introduction to beginning knowledge and skills in aikido.
145. Karate. 1 Hr. Introduction to beginning knowledge and skills in karate.
146. Self-Defense. 1 Hr. Introduction to beginning knowledge and skills in self defense.
147. Kung Fu. 1 Hr. Introduction to beginning knowledge and skills in kung fu.
148. Beginning Jujitsu. 1 Hr. Introduces students to a powerful self-defense technique originally developed in Japan, a precursor to Judo and Aikido.
149. Tae Kwon Do. 1 Hr. Introduction to beginning knowledge and skills in tae kwon do.
150. Martial Arts Fitness. 1 Hr. Introduction to beginning knowledge and skills in martial arts fitness.
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.
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.
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.
154. Racquetball. 1 Hr. Introduction to beginning knowledge and skills in racquetball.
155. Riffery. 1 Hr. Introduction to beginning knowledge and skills in riflery.
156. Slow Pitch Softball. 1 Hr. Introduction to beginning knowledge and skills in slow pitch softball.
158. Indoor Soccer. 1 Hr. Introduction to beginning knowledge and skills in indoor soccer.
159. Soccer. 1 Hr. Introduction to beginning knowledge and skills in soccer.
160. Beginning Tennis. 1 Hr. Introduction to beginning knowledge and skills in tennis.
162. Intermediate Tennis. 1 Hr. Introduction to intermediate/advanced knowledge and skills in tennis.
164. Weight Training. 1 Hr. Introduction to beginning knowledge and skills in weight training.
165. Conditioning. 1 Hr. Introduction to beginning knowledge and skills in conditioning.
170. Volleyball. 1 Hr. Introduction to beginning knowledge and skills in volleyball.
173. Beginning Swimming. 1 Hr. Introduction to beginning knowledge and skills in swimming.
174. Intermediate Swimming. 1 Hr. Introduction to intermediate knowledge and skills in swimming.
175. Lifeguard Training. 2 Hr. Red Cross certification for lifeguards.
176. Advanced Swimming. 1 Hr. Introduction to advanced knowledge and skills in swimming.
179. Orientation to Scuba. 1 Hr. Introduction to beginning knowledge and skills in scuba diving.
182. Bowling. 1 Hr. Introduction to beginning knowledge and skills in bowling.
185. Fencing. 1 Hr. Introduction to beginning knowledge and skills in fencing.
186. Outdoor Leisure Pursuits. 1 Hr. Introduction to knowledge and skills in outdoor leisure pursuits.
187. Golf. 1 Hr. The course is designed to introduce students to the rules, skills, and strategies involved in golf.
188. Folk, Square, and Ballroom Dance. 2 Hr. This class will introduce the student to beginning levels of folk, square, and ballroom dance.
293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.


Physical Education Teaching (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.

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.

167. Introduction to Physical Education. 2 Hr. Historical and philosophical bases, major issues, and professional practices in physical education teaching.

175. Motor Development. 3 Hr. To examine changes in human movement behavior across the lifespan and the factors that contribute to those changes.

206. Behavioral Technology for Physical Education. 2 Hr. Basic concepts and instructional techniques associated with applying behavior analysis to school-aged children.

228. 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.

234. Physical Education Teaching Practicum. 1 Hr. Demonstration of competencies in an instructional setting involving the general population of college students.

276. Special Physical Education. 2 Hr. Examines motor developmental characteristics of various handicapped groups and emphasizes physical education role in remediating possible developmental deficiencies.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.


337. Teaching Track and Field. 2 Hr. Basic concepts and instructional techniques for teaching track and field in public schools. (Activity.)

338. Teaching Wrestling. 1 Hr. Basic concepts and instructional techniques for teaching wrestling in public schools. (Activity.)

339. Teaching Volleyball. 1 Hr. Basic concepts and instructional techniques for teaching volleyball in public schools. (Activity.)

340. Teaching Soccer. 1 Hr. Basic concepts and instructional techniques for teaching soccer in public schools. (Activity.)

341. Teaching Basketball. 1 Hr. Basic concepts and instructional techniques for teaching basketball in public schools. (Activity.)

342. Teaching Flag Football. 1 Hr. Basic concepts and instructional techniques for teaching flag football in public schools. (Activity.)

343. Physical Education for Elementary Teachers. 2 Hr. Philosophy, objectives, curriculum, and methods of teaching physical education activities for children.

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.

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.

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.

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.

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.

355. Teaching Aquatics. 1 Hr. Basic concepts and instructional techniques for teaching aquatics in public schools. (Activity.)

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.

358. Teaching Softball/Baseball. 1 Hr. Basic concepts and instructional techniques for softball/baseball in public schools. (Activity.)

359. Teaching Elementary Rhythms. 1 Hr. Developing the cognitive, affective, and psychomotor competencies for teaching elementary rhythms in physical education.
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.

Advanced Gymnastics. 2 Hr.

Teaching Elementary Physical Education. 2 Hr. This is about the content and methods of teaching elementary physical education.

Kinderskills/Gym. 2 Hr. This course stresses developing, implementing and evaluating appropriate movement experiences for pre-school children. A laboratory with children is included.

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.

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.

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.

Teaching Badminton. 1 Hr. Basic concepts and instructional techniques for teaching badminton in public schools. (Activity.)

Teaching Golf. 1 Hr. Basic concepts and instructional techniques for teaching golf in public schools. (Activity.)

Secondary Fitness Laboratory. 1 Hr. Scientific principles of strength conditioning and aerobic training.

Teaching Outdoor Leisure Pursuits. 2 Hr. Basic concepts and instructional techniques for teaching basic backpacking, orienteering, and snow skiing in public schools. (Activity.)

Teaching Dance in Physical Education. 2 Hr. Basic concepts and instructional techniques for teaching dance in physical education in public schools. (Activity.)

Teaching Tennis. 1 Hr. Basic concepts and instructional techniques for teaching tennis in public schools. (Activity.)

Special Physical Education Practicum. 1 Hr. PR: Open to departmental majors only. A supervised practice teaching experience in special physical education.

Issues in Physical Education. 2 Hr. Issues affecting the teaching of physical education links the elements of the student’s professional preparation.

Supervision in Physical Education. 1 Hr. Evaluation and feedback techniques for supervising physical education teachers.

Student Teaching: Elementary. 3 Hr. COREQ: PET 487. A final, school-based practice teaching experience in elementary schools.

Student Teaching: Secondary. 3 Hr. COREQ: PET 487. A final, school-based practice teaching experience in secondary schools.

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.)

Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

Directed Study: 1-6 Hr. Directed study, reading, and/or research.

A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Physical Science (PHSC)

101. Introductory Physical Science 1. 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.

102. Introductory Physical Science 2. 4 Hr. PR: PHSC 101. Continuation of PHSC 101. Concepts include electricity, motion, heat and temperature, energy, and chemistry.

111. General Physical Science 1. 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.

112. General Physical Science 2. 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.
293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

491. Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Preadarranged 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.

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

496. Senior Thesis. 1-3 Hr. PR: Consent.

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)

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. Preerequisite(s) and/or co-requisite(s) may differ on regional campuses.

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.

103. 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.

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.

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.

111. General Physics. 4 Hr. PR: A grade of C or better in MATH 155. Survey of classical mechanics, thermodynamics and waves.

112. General Physics. 4 Hr. PR: PHYS 111. Survey of electricity, magnetism, and optics.

199. Orientation to Physics. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

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.

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.

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.

290. Teaching Practicum. 1-3 Hr.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

313. Introductory Electronics. 3 Hr. PR: PHYS 111 and PHYS 112. Principles and applications of integrated circuits and digital electronics.

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.

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.

325. Atomic Physics. 3 Hr. PR: PHYS 213. Relativistic mechanics, atomic structure, and spectra.

331. 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.

332. 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.

333. 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 in matter.
Electricity and Magnetism. 3 Hr. PR or CONC: PHYS 333 or equiv. and MATH 261. Maxwell’s equations, reflection and refraction, wave guides and cavities.

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.

Physics Seminar. (No credit.) (Suggested for junior, senior, and graduate physics majors.) These lectures acquaint students with topics of current interest in physics.

Introductory Quantum Mechanics. 3 Hr. PR: PHYS 213 and MATH 261. Fundamental principles of quantum mechanics; state functions in position and momentum space, operators, Schrödinger’s equation, applications to one-dimensional problems, approximation methods, the hydrogen atom, angular momentum and spin.

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.

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.

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.

Nematology. 3 Hr. Nematode biology, ecology, taxonomy, and control, with particular emphasis on plant parasitic forms. (Offered in Spring of odd years).

Forest Pest Management. II. 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 170.)

Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) P rearranged 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.

Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

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

Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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.)

Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

Plant Pathology (PPTH)


Nematology. 3 Hr. Nematode biology, ecology, taxonomy, and control, with particular emphasis on plant parasitic forms. (Offered in Spring of odd years).

Forest Pest Management. II. 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 170.)

Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

Professional Field Experience. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) P rearranged 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.

Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

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

Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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.)

Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.
Plant Science (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.


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).

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.) Preamarranged 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.


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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

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

Political Science (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.

199. Orientation to Political Science. 1 Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

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.

220. State and Local Government. I, II, S. 3 Hr. The legal basis, structure, politics and operation of state and local governments, in the content of the American federal system.

230. Introduction to Policy Analysis. I, II, S. 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.


250. Introduction to Comparative Politics. I, II, S. 3-3 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.

260. Introduction to International Relations. I, II, S. 3 Hr. Theories and concepts in international politics and their application to contemporary world politics.

270. History of Political Thought I. I, II, S. 3 Hr. Major political philosophers and ideas from the Greeks to the 17th century.


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.

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.

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.

310. American Presidency. I, II, S. 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.

311. Political Parties and Elections. I, II, S. 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.
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.

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.

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.

315. Law and Public Policy. I, II. S. 3 Hr. PR: POLS 210 or Consent. Advanced examination of the role of trial courts in policy-making, including agenda-setting and policy formulation by courts, the outcomes of policy litigation, and the politics of legal reform.

316. Public Opinion and Politics. I. II. S. 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.

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.

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.


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.

332. 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.

333. 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.

334. 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.

335. 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.


337. 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.

340. 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.

341. 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.

350. Government of Japan. II. 3 Hr. Survey of political institutions and governmental processes in Japan with special emphasis on the analysis of political development in the post-war period.

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.

352. 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.


355. Politics of the Middle East. II. 3 Hr. Survey of the domestic and international political dynamics of the Middle East.

356. Politics of Africa. II. 3 Hr. Historical legacies and current political processes of tropical African countries.

361. International Organization. II. 3 Hr. International agencies created since the close of World War II. Analysis of the development of international law and the United Nations.
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.

363. **International Law.** I. 3 Hr. Law governing relations among nations, including development of rules, means of enforcement, and conflict between theory and practice.

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.

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.

366. **Russian Foreign Policy.** II. 3 Hr. The origins and conduct of Russian foreign policy during the Soviet and post-Soviet periods. Emphasis will be placed on the foreign politics of the former Soviet Republics.

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.

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.

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.

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.

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.

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.

389 A-Z. **Selected Topics.** (Honors.) I, II. 3 Hr.

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.

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.

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.

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

491. A-Z. **Professional Field Experience.** I, II. S. 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.

493 A-Z. **Special Topics.** I, II. S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. **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.

496. **Senior Thesis.** I, II. S. 1-3 Hr. PR: Consent.

498. **Honors.** I, II. S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

499 A-Z. **Global Service Learning.** 3 Hr. PR: Consent.
Portuguese (PORT)
101. Elementary Portuguese 1. 3 Hr.
102. Elementary Portuguese 2. 3 Hr. PR: PORT 101 or equiv.
203. Intermediate Portuguese 1. 3 Hr. PR: PORT 102 or equiv.
204. Intermediate Portuguese 2. 3 Hr. PR: PORT 203 or equiv.
293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.
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.
493. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
496. Senior Thesis. 1-3 Hr. PR: Consent.
498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Psychology (PSYC)
101. Introduction to Psychology. 3 Hr. Survey of general psychology.
201. Psychology as a Profession. 1 Hr. PR: PSYC 101. Orientation to opportunities for experience, employment, and graduate and professional training in psychology.
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.
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.
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 of cinema on the individual and society. Analysis of psychological themes is emphasized.
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.
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.
281. Introduction to Abnormal Psychology. 3 Hr. PR: PSYC 101. Introduction to major categories of behavior disorders; etiology, prevention and treatment.
293 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.
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.
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.
342. Prenatal and Infan Development. 3 Hr. PR: PSYC 241 and junior or senior standing. Behavior and development from conception to two years. Includes behavioral genetics and hazards of prenatal development, as well as sensory- motor, cognitive, language, and socioemotional behavior during infancy.
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.
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.

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.

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.

363. Personality Theory. 3 Hr. PR: (PSYC 202 or PSCY 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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (No more than three hours of PSYC 490 may be counted toward the 44 hours of psychology to which psychology majors are limited.)

490A. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant. (No more than three hours of PSYC 490 may be counted toward the 33 hours of psychology to which psychology majors are limited.)

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.

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.

492. Directed Study. 1-3 Hr. PR: Consent. Directed study, reading, and/or research.

492A. Directed Study. 1-3 Hr. PR: Consent. Directed study, reading, and/or research.

493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regularly scheduled courses.

495A. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regularly scheduled courses.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.
organizations, including policy, legal foundations, organization, personnel, and finance.

Public Relations (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.

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.

321. Public Relations Research and Theory. 3 hr. PR; STAT 211 and JRL 318 and PR 215.

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.

422. Public Relations Case Studies. 3 hr. PR; PR 324 and JRL 421 or consent. Seminar based on in-depth studies of public relations programs developed and applied in support of our institutions. Primary emphasis on successful campaigns, but unsuccessful efforts also will be examined for causes of failure.

490. Teaching Practicum. 1-3 hr. PR; Consent. Teaching practice as a tutor or assistant. (Course will be graded on a pass/fail basis.)

491. Professional Field Experience. 1-18 hr. PR; Consent (May be repeated up to a max. of 18 hrs.) 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.)

493. Special Topics. 1-3 hr. PR; Consent. Investigation of topics not covered in regularly scheduled courses.

494. Seminar. 1-3 hr. PR; Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. Senior Thesis. 1-3 hr. PR; Consent. (Course will be graded on a pass/fail basis.)

498. Honors. 1-3 hr. PR; Students in Honors Program and consent by the Honors director. Independent reading, study, or research.

Reading (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 studies in reading.

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.

422. Reading in the Content Areas. I, II, 2 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.

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.

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

Recreation, Parks, and Tourism Resources (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.

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.

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.

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.

251. Leadership in Recreation, Parks and Tourism. I. 3 hr. PR; RPTR major or Consent. Leadership functions and techniques, group dynamics, supervision, and use of volunteers. (Field placement with a local agency, some transportation costs.)

263. Program Planning in Recreation, Parks and Tourism. II. 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.

293 A-Z. Special Topics. I, II, S. 1-6 hr. PR; Consent. Investigation of topics not covered in regularly scheduled courses.

335. Management in Recreation, Parks and Tourism Organizations. II. 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.
365. Planning and Design in Recreation, Parks and Tourism. I. 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.

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.


343. Wilderness in American Society. II, 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.

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.

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.

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.

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.

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

491 A-Z. Professional Field Experience. I, II, S. 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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Religious Studies (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.

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.

210. Contemporary Theology 1. 3 Hr. Issues include: function of reason in Judaism-Christian faith and relationship of reason and revelation to each other; Judaism-Christian understanding of history; the question of biblical literalism.

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.

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 Judaism-Christian faith.

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.

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.

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.

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.

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.

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.
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.

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.

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.

293 A-Z. Special Topics. 3 Hr. Investigation of topics not covered in regularly scheduled courses.

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.

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.

350. 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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

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

493 A-Z. Special Topics. 3 Hr. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 3 Hr. PR: A previous religious studies course. 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.

496. Senior Thesis. 1-6 Hr. PR: Consent.

497. Research. 1-6 Hr. Independent research projects.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Resource Management (RESM)


390. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

495. Independent Study. 1-3 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Russian (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.

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.

203. Intermediate Russian 1. 3 Hr. PR: RUSS 102. Continued development of basic skills in listening, reading, speaking, and writing Russian.

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.

293 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. Conversation and Composition 1. 3 Hr. PR: RUSS 204. Emphasis on development of written and oral communicative skills of contemporary Russian.

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.
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.


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.

332. The Russian Short Story. 3 Hr. PR: RUSS 204. Reading, discussing, and writing in Russian about short stories of selected contemporary Russian writers.

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.

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.

451. Russian Culture. 3 Hr. PR: RUSS 204. A study of Russian civilization, customs, and ethos.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.

Safety Management (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.

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.

471. Motor Fleet Safety. 3 Hr. Safety elements of automotive transportation including design, operation, planning, control, and effects of legislation.

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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

Social and Cultural Foundations (SCFD)
490. Teaching Practicum. 1-3 hr. PR: Consent. Teaching practice as a tutor or assistant.

491. Professional Field Experience. 1-18 hr. PR: Consent. (May be repeated up to a maximum of 18 hrs.) 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.

493. Special Topics. 1-6 hr.

494. Seminar. 1-3 hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

496. Senior Thesis. 1-3 hr. PR: Consent.

498. Research. 1-6 hr. Independent research projects.

Social Work (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.)

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.

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.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.)

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.)

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.

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.)

324. Methods 3: Org and Communities. 3 Hr. PR: SOWK 319 and SOWK 320 and SOWK 322. Focuses on applying theories and concepts of generalist social work practice at the macro (organization/community) system level with an emphasis on rural environments.

330. HBSE 1. 3 Hr. PR: SOWK 147 and SOWK 151. Human Behavior in the Social Environment 1: Individual Development. 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.

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.

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.

491. Professional Field Experience. 1-12 Hr. PR: Consent. (May be repeated up to a maximum 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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

499. Global Service Learning. 3 Hr.

499A. Global Service Learning. 3 Hr.

Sociology and Anthropology (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.

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.


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.

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.

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.

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.


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.

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.
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.

250. Archeology Laboratory. 1 Hr. Co-Req: SOCA 258. Experiential activities to accompany SOCA 258 lecture material.

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-culture, and evolutionary perspectives.

252. Physical Anthropology. 3 Hr. Fossil evidence for human evolution, racial variation, and relationship between biology and behavior.

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.

256. Traditional and Changing Africa. 3 Hr. A survey of traditional social institutions found in hunting/collection, agricultural, and pastoral societies of sub-Saharan Africa. Labor migration, urbanization, agricultural cooperatives, and other consequences of colonial rule will be considered.

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.

258. Introduction to Archaeology. 3 Hr. Co-Req: SOCA 250. Methods and techniques of reconstructing prehistoric cultures, explaining cultural change, and explaining the formation of the archeological record.

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.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

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.

322. Third World Development. I, 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 an specific knowledge of Third World development for issues related to population, food, debt, health, education, environment, and human rights.


325. Illness and Health Care. 3 Hr. An overview of behavioral factors relating to occurrence of and response to illness, with particular emphasis on American medicine. Designed especially for students interested in health-related careers.

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.

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.

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.

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.

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.

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.

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.

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.

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.
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.

353. *Anthropology of Religion*. 3 Hr. PR: 6 hr. 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.

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.

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.


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.

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.

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.)

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.)

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.

402. *The Investigating Professions*. 3 Hr. An inside view of the investigative work and controversial social relations of trial attorneys and a variety of paid scientific experts who commonly evaluate and prepare legal cases.

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.

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.

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.

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.


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.

488. *The Capstone Experience*. 1 Hr. PR: SOCA 101 and SOCA 105 and Sr. standing. Co-Req: Enroll simultaneously in one of the approved capstone experiences. An undergraduate course designed to facilitate the completion of the capstone experience. (Grading will be Pass/Fail.)

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

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.

493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar*. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495 A-Z. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
Courses

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study and research.

499 A-Z. Global Service Learning. 3 Hr. PR: Consent.

Spanish (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.

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.)

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.

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.

203. Intermediate Spanish 1. 3 Hr. PR: SPAN 102 or score of S3 on placement exam. Continuation of SPAN 102.

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.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

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.

304. Advanced Reading and Composition. 3 Hr. PR: SPAN 302. Study of different genres and styles. Class discussion and written analyses in Spanish.

330. Latin American Culture. 3 Hr. PR: SPAN 302 Survey of Latin American civilization and culture from the pre-Colombian period to the present.

331. Early Spanish American Literature. 3 Hr. PR: SPAN 304. Readings in Spanish American literature from the colonial period to Modernism.

332. Modern Spanish American Literature. 3 Hr. PR: SPAN 304. Readings in Spanish American literature from Modernism to the present.

340. Culture of Spain. 3 Hr. PR: SPAN 302. Survey of Spanish civilization and culture from its origins to the present day.

341. Early Literature of Spain. 3 Hr. PR: SPAN 304. Readings in Spanish literature from the medieval period to the eighteenth century.

342. Modern Literature of Spain. 3 Hr. PR: SPAN 304. Readings in Spanish literature from the eighteenth century to the present.

401. Grammar Review. 3 Hr. Intensive grammar review for graduate students. (Credit does not count toward 36 hrs. required for master’s degree.)

431. Caribbean Literature. 3 Hr. PR: At least one literature course in Spanish. Readings of selected works by Hispanic writers from the Caribbean region.

461. Commercial Spanish 1. 3 Hr. PR: 12 Hr. upper-division Spanish or consent.) Development of advanced speaking, reading and writing skills appropriate for business contexts within the Spanish-speaking world.

462. Commercial Spanish 2. 3 Hr. PR: SPAN 461 Continuation of SPAN 461.

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study, or research.

**Special Education (SPED)**

302. Special Education Assessment. 3 hr. Development of expertise in various forms of cognitive and effective assessment techniques, understanding psychoeducational needs of exceptional learners, and designing appropriate educational prescriptions from assessment protocols.

303. Strategies for Addressing Behavioral and Management Problems. 3 Hr. Theory and classroom application of procedures to implement behavior changes in children with mild/moderate disabilities and/or problems; effective group and individual behavior management.

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.

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.

355. Introduction to Mental Retardation. 3 Hr. PR: Consent. Historical, etiological, social, educational, and vocational aspects of mental retardation.

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.

362. Educating Students with Mild/Moderate MR. 3 Hr. PR: SPED 350 and SPED 360. Curriculum development based upon individual needs; application of classroom instructional methods for students with mental retardation.


364. Educating Students With Learning Problems. 3 Hr. Curriculum planning, informal diagnosis techniques, teaching strategies, and opportunities to use strategies in student designed programs.

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.

491. Professional Field Experience. 1-6 Hr. PR: Consent. Student teaching with the mentally impaired.

**Speech Pathology and Audiology (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.

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.)

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.

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.


276. Intermed 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.

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.

293. Special Topics. I, II. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.


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.

326. Articulation and Cleft Palate. II. 3 Hr. PR: SPA 322 Characteristics and etiology of articulatory and phonological disorders; survey of diagnostic and therapeutic procedures. Characteristics of articulation and resonance, and survey of evaluation and treatment considerations for cleft palate.


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.

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.

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.

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.

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.

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.

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.


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.

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.

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.)

483. Clinical Practice/Audiology. I, II. S. 3 Hr. PR: Consent. Orientation to clinical methods for evaluation and treatment of hearing disorders. (Graded Pass/Fail.)

484. Clinical Study and Application 1. 1 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 20 relevant sources.

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.

493 A-Z. Special Topics. I, II. S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

**Sport and Exercise Psychology (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.

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.

271. Sport in American Society. 3 Hr. Sociocultural investigation of sport in American society.

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.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

373. African Americans in Sports. 3 Hr. Sociocultural and historical overview of the contributions of African-Americans in sport in America.
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.

383. Exercise Psychology. 3 Hr. Introduction to motivational and mental health factors associated with exercise participation.

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent Teaching practice as a tutor or assistant.

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.

492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors program and consent by the Honors Director. Independent reading, study or research.

Sport Management (SM)

167. Introduction to Sport Studies. 3 Hr. Examines the historical and philosophical bases, major issues and professional practices in sport studies.

293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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.

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.

425. Facility Planning. 3 Hr. PR: Consent. An in-depth study of sport facilities, including planning, design, liability and facility management concepts and evaluation.

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.

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.

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.

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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

492. Directed Study. 1-6 Hr. Directed study, reading, and/or research.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

498. Internship. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.
Statistics (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.

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.

211. Elementary Statistical Inference. I, II. 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.)


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.

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.)

293 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

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.

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.


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.

421. Statistical Analysis System (SAS). I, II. 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.

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.


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.

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. Professional Field Experience. 1-15 Hr. PR: Consent. (May be repeated up to a maximum of 18 hours.) P refered experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Includes temporary placement with public or private enterprise for professional competence development.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. Seminar. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.
Technology Education (TE)

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 contributions in Third World development.

493 A-Z. Special Topics. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

Textiles, Apparel, and Merchandising (TA&M)
120. Textile and Apparel Complex. I. 3 Hr. Textile and apparel industries will be described and analyzed, in order, from concept to consumer purchase on four levels: primary (raw materials), secondary (design/manufacturing), tertiary (retail), and auxiliary (service/advisory).


220. Social-Psychological Aspects of Dress. I. 3 Hr. PR: TA&M 120 and (SOCA 101 or SOCA 105) and PSYC 231. Interdisciplinary approach to the study of apparel including cultural, historical, social, psychological, physical, economic, and aesthetic factors and their significance to individuals and society.

221. Visual Merchandising. II. 3 Hr. PR: TA&M 140 and TA&M 220. Visual merchandising including display and store design; on-site store analysis and development of design proposals by student teams.

230. Apparel Construction and Fitting. I. 3 Hr. PR: (MATH 124 or MATH 126 or MATH 129) and TA&M 140 and Sophomore standing. Majors only. Basic principles of apparel construction, pattern alteration, and fitting used in the apparel industry.

231. History of Costume. II. 3 Hr. PR: TA&M 140 and TA&M 220. History of costume from the ancient civilizations to the present in relation to technological, social, cultural, and economic influences.


320. Merchandise Buying and Management 1. I, II. 3 Hr. PR or CONC: TA&M 230 and TA&M 231. This course serves 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.

321. Merchandising Study Tour. II. 1 Hr. PR: Junior standing in TA&M. Study of textile, apparel and retail industries through visits to historic costume collections, apparel firms, design showrooms, buying offices, and retail establishments. (May be repeated for a maximum of 2 hr. credit.)

332. Flat Pattern Design. II. 3 Hr. PR: TA&M 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.)

340. Textiles and Apparel in the Global Economy. 3 Hr. PR: TA&M 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.)

420. Merchandise Buying and Management 2. I, 3 Hr. PR: TA&M 320 or Consent. 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.

424. Functional Apparel. I, 3 Hr. PR: ENGL 101 and ENGL 102 and TA&M 220 and TA&M 230. Physical, sociological, and psychological clothing needs of individuals with functional needs. Historical developments and research needs explored. Students conduct a service-learning project.

433. Apparel Design and Illustration. II. 3 Hr. PR: TA&M 230 and TA&M 231 and TA&M 332 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.)

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

491. Merchandising Internship. 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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.
Theatre (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.

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.

110. Stagecraft I. 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.

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.

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.

113. Stage Management. Principles. I. 1 Hr. PR: THET 112 An examination of the fundamental principles that govern the contemporary stage manager.

143. Freshman Directing Workshop. I, II. 1 Hr. Exploration of the collaborative relationship between actor and director from the actor's point of view.

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.

145. Fundamentals of Acting. II. 3 Hr. PR: THET 144. Continuation of THET 144.

170. World Theatre and Drama. I. 3 Hr. Introduction to theatre and drama traditions in ten world cultures. An intercultural study of theatres, performance and staging practices, the cultural milieu, and dramatic literature.

200. Sophomore Practicum. I. 1 Hr. Assigned theatre projects as an introduction to the elements of theatrical production. (May be repeated for 4 credit hrs.)

201. Theatre Management. 3 Hr.

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.)

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.

221. Theatre Makeup. I, II. 3 Hr. Lecture-laboratory course in art of stage makeup. Practical makeup for the University theatre productions.

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.

225. Introduction to Stage Design I. 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.

226. Introduction to Stage Design II. 3 Hr. PR: THET 225. 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.

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.

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.

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.


244. 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.

245. Intermediate Acting. II. 3 Hr. PR: THET 244. Continuation of THET 244.

293 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

302. Directing. I, II. 3 Hr. Fundamental theory and practice of directing for live theatre with emphasis on script analysis, director-actor communication, groundplan, and composition.
310. **Stagecraft I**. 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.

314. **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.

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.

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.

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.)

324. **Costume Design I**. I, II. 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, paper-work and budgeting.

325. **Lighting Design I**. 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. 9 credit hours.)

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.)

327. **History of Costume and Decor I**. I. 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.)

328. **History of Costume and Decor II**. 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.)

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.

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.


342. **Stage Movement I**. 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.

343. **Stage Movement II**. 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.

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.


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.

347. **Physical Acting**. 2 Hr. A practical survey of physical approaches to acting and their relevance to a contemporary actor’s craft.

350. **Theatre Dance I**. 2 Hr.

351. **Theatre Dance II**. 2 Hr.

352. **Musical Theatre Repertory**. 2 Hr.

353. **Musical Theatre Literature**. 3 Hr.

360. **Theatre in the Modern World I, II**. 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.

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.
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<tr>
<th>Course Name</th>
<th>Credits</th>
<th>Description</th>
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<tr>
<td>362. <em>Euro-American Theatre: 1650-1850.</em> II, 3 Hr. PR: THET 112</td>
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<td>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.</td>
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<tr>
<td>363. <em>Modern and Contemporary Theatre.</em> II, 3 Hr. PR: THET 112</td>
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<td>A survey of theatre history, with emphasis on the development or performance conditions, from the late nineteenth century to the present.</td>
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<td>400. <em>Theatre Performance and Rehearsal Laboratory.</em> 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.</td>
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<td>401. <em>Capstone Experience.</em> 3 Hr.</td>
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<td>This course provides a culminating senior project for students in the areas of B.F.A. acting, design, puppetry, and children’s theatre, as well as for the B.A. in theatre.</td>
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<td>402. <em>Repertory Theatre.</em> 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.)</td>
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<td>403. <em>Advanced Directing.</em> II, 3 Hr. PR: THET 302 and THET 427 or Consent</td>
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<td>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.</td>
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<td>404. <em>Playwriting.</em> 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.</td>
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<tr>
<td>405. <em>Advanced Playwriting.</em> II, 3 Hr. PR: THET 404</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>420. <em>Costume History.</em> 3 Hr.</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>421. <em>Lighting Design Techniques.</em> 3 Hr. PR: THET 325 and THET 200</td>
<td></td>
<td>An Advanced study of lighting design with emphasis on design development, cueing, and design refinement during technical rehearsals.</td>
</tr>
<tr>
<td>423. <em>Costume Crafts.</em> II, 3 Hr. PR: THET 111 and THET 425</td>
<td></td>
<td>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.</td>
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<tr>
<td>424. <em>Advanced Technical Production.</em> II, 3 Hr. PR: THET 110</td>
<td></td>
<td>Study of advanced technical procedures including rigging, welding, new materials and special effects. Emphasis on the practices and development of skills through projects.</td>
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<tr>
<td>425. <em>Advanced Costume Construction.</em> I, II, 3 Hr. PR: THET 111</td>
<td></td>
<td>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.)</td>
</tr>
<tr>
<td>427. <em>Lighting Techniques.</em> 3 Hr. PR: THET 220</td>
<td></td>
<td>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.</td>
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<tr>
<td>428. <em>Scene Painting.</em> 3 Hr. PR: THET 322 and THET 622 or Consent</td>
<td></td>
<td>An introduction to the basic tools, materials, and techniques of scene painting for the stage.</td>
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<tr>
<td>429. <em>Sound Seminar.</em> 3 Hr. PR: THET 110</td>
<td></td>
<td>An exploration of sound design for the theatre with practical emphasis on producing and recording sound effects using ProTools and other computer software.</td>
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<tr>
<td>433. <em>Model Building.</em> 3 Hr. PR: THET 225 and THET 226</td>
<td></td>
<td>Design and construction methods of the scenographic model are examined. Mastery is attained through the construction of three or four projects in the design studio.</td>
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<tr>
<td>440. <em>Advanced Vocal Techniques.</em> I, 2 Hr. PR: Consent.</td>
<td></td>
<td>Meeting the demands of heightened texts requiring greater emotional and physical commitments. Tutorials.</td>
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<tr>
<td>441. <em>Advanced Vocal Techniques 2.</em> II, 2 Hr. PR: THET 440 and Consent</td>
<td></td>
<td>Integrating vocal techniques in the context of rehearsal and performance in plays of heightened text and issues of period and style.</td>
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<tr>
<td>442. <em>Advanced Stage Movement 1.</em> I, II, 2 Hr. PR: THET 343 or Consent</td>
<td></td>
<td>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.</td>
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<tr>
<td>443. <em>Advanced Stage Movement 2.</em> II, 1 Hr. PR: THET 442</td>
<td></td>
<td>Continuation of THET 442 through work directed projects; special topics in issues related to physicality in performance.</td>
</tr>
<tr>
<td>444. <em>Advanced Acting Studio.</em> I, 3 Hr. PR: Consent.</td>
<td></td>
<td>Continuation of advanced exercises focusing on the works of Shakespeare. Includes verse scansion, text analysis, dynamics, scene study, exercise work and characterization.</td>
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<tr>
<td>445. <em>Advanced Acting Studio.</em> II, 3 Hr. PR: Consent.</td>
<td></td>
<td>Continuation of THET 444. Rehearsal and presentation of style project, (Shakespeare, Comedy of Manners, Shaw, etc.). Also includes seminars in special topics in performance.</td>
</tr>
<tr>
<td>446. <em>Creative Dramatics.</em> I, II, S, 3 Hr. PR: THET 144</td>
<td></td>
<td>Study and practice of creative drama for theatre education or classroom/curriculum use. Instructional methods for drama techniques and practical activities are stressed.</td>
</tr>
</tbody>
</table>
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.


490. Teaching Practicum. 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 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.

493 A-Z. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. 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.

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.


498 A-Z. Honors. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

United States Air Force (USAF)

131. The Air Force Today 1. 2 Hr. The Air Force in the contemporary world through a study of the total force structure, strategic offensive and defensive forces, general purpose forces, aerospace support forces and separate operating agencies. (Also includes leadership laboratory.)


251. The Air Force Way 1. 2 Hr. The development of air power from dirigibles and balloons through the peaceful employment of U.S. air power in relief missions and civic actions programs in the late 1960s and the air war in Vietnam; leadership and managerial communicative skills are stressed by having students prepare both written and oral presentations. (Also includes Leadership Laboratory.)


293. Special Topics. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

371. Air Force Leadership and Management 1. 3 Hr. PR: GMC or equiv. (Equivalent credit may be granted by WVU Director of Admissions and Records and the professor of Aerospace Studies on the basis of prior military service or ROTC training other than courses in aerospace studies and six weeks of field training.) Course focuses on leadership, management, and the progressive development of communicative skills needed by junior officers. It emphasizes the individual as a manager in the Air Force. Individual motivational and behavioral processes, leadership, communication and group dynamics are covered to provide a foundation for the development of the junior officer’s professional skills. Organizational power, politics and managerial strategy and tactics are discussed within the context of business and military organizations. Students will make field trips, prepare individual and group presentations for class, write reports, and participate in group discussions, seminars, and conferences. (Also includes Leadership Laboratory.)


481. Preparation for Active Duty 1. 3 Hr. PR: USAF 371 and USAF 372. The course is a study of U.S. national security policy which examines the formulation, organization, and implementation of national security; context of national security; evolution of strategy; management of conflict; and civil-military interaction. It also includes blocks of instruction on the military profession, the military justice system. The course is designed to provide future Air Force officers with a background of U.S. national security policy so they can effectively function in today’s Air Force. (Also includes leadership laboratory.)

482. Preparation for Active Duty 2. 3 Hr. PR: USAF 371 and USAF 372 and USAF 481. Continuation of USAF 481. USAF 131, 132, 251, 252, 371, 372, 481 and 482 may be taken out of sequence, if unusual circumstances warrant and the student has received approval from the professor of aerospace studies.

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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.
University

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."

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."

194. Freshman Seminar. 1-3 Hr. Presentation and discussion of topics of mutual concern to students and faculty.

Veterinary Sciences (VETS)

302. Animal Pathology. II. 3 Hr. PR: ANPH 301 or Consent. Diseases of farm animals with special emphasis on their cause, prevention, and control.

405. Parasitology. II. 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.) (Offered in fall of even years.)

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). (Offered in fall of even years.)

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.


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

496. Senior Thesis. I, II, S. 1-3 Hr. PR: Consent.

498. Honors. I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.

Wildlife and Fisheries Management (WMAN)

100. The Tradition of Hunting. I. 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.


175. Introduction to Wildlife and Fisheries. II. 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.

221. Interpretive Bird Study. II. 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., 3 hr. lab.)

224. Vertebrate Natural History. I. 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.

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.


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)

425. Mammalogy. II. 3 Hr. PR: BIOL 117 or consent. Mammals and their biological properties with emphasis on life history, ecology, and distribution of regional forms.

426. Ornithology. II. 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.)

445. Introduction to Fisheries Management. II. 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.

446. Limnology. II. 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.
Women's Studies (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.

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 culture.

215. **African Women Writers.** 3 Hr. Selected works by African women writers. (Also listed as FLIT 215.)

220. **Medieval Women Mystics.** 3 Hr. History, writings, and impact of mystics, including but not limited to, Hildergard of Bingen, Saint Clare of Assisi, Julian of Norwich, Saint Catherine of Siena, Saint Catherine of Genoa, and Saint Teresa of Avila.

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.

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.

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.

293 A-Z. **Special Topics.** I, II, S. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.

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.

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.

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.

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.

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.

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

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

491. **Independent Study.** I, II, S. 1-6 Hr. PR: Consent. Teaching practice as a tutor or assistant.

492 A-Z. **Directed Study.** 1-6 Hr. Directed study, reading and/or research.

493 A-Z. **Special Topics.** 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

496. **Senior Thesis.** 1-3 Hr. PR: Consent.

498. **Honors.** I, II, S. 1-3 Hr. PR: Students in Honors Program and Consent by the Honors Director. Independent reading, study or research.
Wood Science (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.


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.

293. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

300. Wood Machining. I. 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. (Offered in fall of even years.)

337. Wood Adhesion and Finishing. II. 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.

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.

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.)

351. Forest Products Protection. II. 3 Hr. PR: WDSC 223. Biological organisms responsible for deterioration of wood products, their control by preservative methods, and study of fire retarding methods. (Offered in odd numbered years.)

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.)


401. Wood Industries Field Trip. S. 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.

413. Wood Chemistry. I. 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.

422. Harvesting Forest Products. II. 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.)


460. Plant Layout for Wood Industries. II. 3 Hr. PR: Senior standing. Relates knowledge of wood product processes to optimize production. Study of proper arrangement of machines, and work and storage areas.

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.)

490. Teaching Practicum. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

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.

493. Special Topics. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

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

495. Independent Study. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

496. Senior Thesis. 1-3 Hr. PR: Consent.

498. Honors. 1-3 Hr. PR: Students in Honors Program and consent by the Honors Director. Independent reading, study or research.