The 1999-2001 West Virginia University Undergraduate Catalog 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 University of West Virginia Board of Trustees, 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.
West Virginia University Calendar 1999-2000

### First Semester

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<tbody>
<tr>
<td>Saturday, September 11</td>
<td>Rosh Hashannah (day of special concern)</td>
</tr>
<tr>
<td>Monday, September 6</td>
<td>Labor Day recess</td>
</tr>
<tr>
<td>Friday, July 28</td>
<td>Last day to drop a class for second six-week session</td>
</tr>
<tr>
<td>Friday, July 7</td>
<td>Last day to register, add new courses, make section changes, change pass/fail and audit</td>
</tr>
<tr>
<td>Monday, September 20</td>
<td>Yom Kippur (day of special concern)</td>
</tr>
<tr>
<td>Friday, October 8</td>
<td>Mid-semester</td>
</tr>
<tr>
<td>Tuesday, October 12</td>
<td>Mid-semester reports due</td>
</tr>
<tr>
<td>Friday, October 29</td>
<td>Thanksgiving recess</td>
</tr>
<tr>
<td>Thursday, December 9</td>
<td>Last day to withdraw from University</td>
</tr>
<tr>
<td>Friday, December 10</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>Friday, December 10</td>
<td>December convocation</td>
</tr>
<tr>
<td>Monday, December 13</td>
<td>First day of classes</td>
</tr>
<tr>
<td>Saturday, March 25</td>
<td>Late registration fee in effect for first six-week session for all students</td>
</tr>
<tr>
<td>Monday, January 10</td>
<td>Last day to drop a class</td>
</tr>
<tr>
<td>Tuesday, February 29</td>
<td>Mid-semester reports due</td>
</tr>
<tr>
<td>Friday, March 17</td>
<td>Last day to drop a class</td>
</tr>
<tr>
<td>Monday, February 7</td>
<td>West Virginia University Day</td>
</tr>
<tr>
<td>Monday, January 17</td>
<td>Martin Luther King's birthday recess</td>
</tr>
<tr>
<td>Friday, February 25</td>
<td>Mid-semester</td>
</tr>
<tr>
<td>Tuesday, February 29</td>
<td>Mid-semester reports due</td>
</tr>
<tr>
<td>Friday, March 25</td>
<td>First day of classes</td>
</tr>
<tr>
<td>Thursday, April 2</td>
<td>Passover (day of special concern)</td>
</tr>
<tr>
<td>Friday, April 21</td>
<td>Easter recess</td>
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<tr>
<td>Thursday, April 27</td>
<td>Last day to withdraw from university</td>
</tr>
<tr>
<td>Friday, April 28</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>Monday, May 1</td>
<td>Final examination week</td>
</tr>
<tr>
<td>Monday, May 8</td>
<td>Grade reports for all graduates due in dean's office</td>
</tr>
<tr>
<td>Tuesday, May 9</td>
<td>Election Day recess</td>
</tr>
<tr>
<td>Monday, May 8</td>
<td>Grade reports for all graduates due in dean's office</td>
</tr>
<tr>
<td>Wednesday, May 10</td>
<td>Dean's reports on graduates due in ARC</td>
</tr>
<tr>
<td>Saturday, May 13</td>
<td>Alumni day</td>
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<tr>
<td>Sunday, May 14</td>
<td>Commencement</td>
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### Second Semester

<table>
<thead>
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<th>Date</th>
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<tbody>
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<tr>
<td>Friday, January 7</td>
<td>General registration</td>
</tr>
<tr>
<td>Monday, January 10</td>
<td>First day of classes</td>
</tr>
<tr>
<td>Monday, January 10</td>
<td>Late registration fee in effect for all students</td>
</tr>
<tr>
<td>Friday, January 14</td>
<td>Last day to register, add new courses, make section changes, change pass/fail and audit</td>
</tr>
<tr>
<td>Monday, January 17</td>
<td>Martin Luther King's birthday recess</td>
</tr>
<tr>
<td>Monday, February 7 (Not a holiday.)</td>
<td>West Virginia University Day</td>
</tr>
<tr>
<td>Friday, February 25</td>
<td>Mid-semester</td>
</tr>
<tr>
<td>Tuesday, February 29</td>
<td>Mid-semester reports due</td>
</tr>
<tr>
<td>Friday, March 17</td>
<td>Last day to drop a class</td>
</tr>
<tr>
<td>Saturday, March 25</td>
<td>First day of spring recess</td>
</tr>
<tr>
<td>Thursday, April 2</td>
<td>Passover (day of special concern)</td>
</tr>
<tr>
<td>Friday, April 21</td>
<td>Easter recess</td>
</tr>
<tr>
<td>Thursday, April 27</td>
<td>Last day to withdraw from university</td>
</tr>
<tr>
<td>Friday, April 28</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>Monday, May 1</td>
<td>Final examination week</td>
</tr>
<tr>
<td>Monday, May 8</td>
<td>Grade reports for all graduates due in dean's office</td>
</tr>
<tr>
<td>Tuesday, May 9</td>
<td>Election Day recess</td>
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<tr>
<td>Monday, May 8</td>
<td>Grade reports for all graduates due in dean's office</td>
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<tr>
<td>Wednesday, May 10</td>
<td>Dean's reports on graduates due in ARC</td>
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<tr>
<td>Saturday, May 13</td>
<td>Alumni day</td>
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<tr>
<td>Sunday, May 14</td>
<td>Commencement</td>
</tr>
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### Summer Session I

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Tuesday, May 23</td>
<td>First day of classes</td>
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<tr>
<td>Wednesday, May 24</td>
<td>Late registration fee in effect for first six-week session for all students</td>
</tr>
<tr>
<td>Friday, May 26</td>
<td>Last day to register for first six-week session and last day to add courses or make section changes in second six-week session</td>
</tr>
<tr>
<td>Monday, May 29</td>
<td>Memorial Day recess</td>
</tr>
<tr>
<td>Friday, June 16</td>
<td>Last day to drop a class for first six-week session</td>
</tr>
<tr>
<td>Thursday, June 29</td>
<td>Last day to withdraw for first six-week session</td>
</tr>
<tr>
<td>Friday, June 30</td>
<td>Last day of classes for first six-week session</td>
</tr>
<tr>
<td>Friday, June 30</td>
<td>Final exam for first six-week session</td>
</tr>
</tbody>
</table>

### Summer Session II

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, July 3</td>
<td>Registration</td>
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<tr>
<td>Monday, July 3</td>
<td>First day of classes</td>
</tr>
<tr>
<td>Tuesday, July 5</td>
<td>Independence day recess</td>
</tr>
<tr>
<td>Wednesday, July 5</td>
<td>Late registration fee in effect for second six-week session for all students</td>
</tr>
<tr>
<td>Friday, July 7</td>
<td>Last day to register for second six-week session and last day to add courses or make section changes in second six-week session</td>
</tr>
<tr>
<td>Friday, July 28</td>
<td>Last day to drop a class for second six-week session</td>
</tr>
<tr>
<td>Wednesday, August 9</td>
<td>Last day to withdraw for second six-week session</td>
</tr>
<tr>
<td>Thursday, August 10</td>
<td>Last day of classes for second six-week session</td>
</tr>
<tr>
<td>Thursday, August 10</td>
<td>Final exam for second six-week session</td>
</tr>
<tr>
<td>Friday, August 18</td>
<td>Degree conferring date (No ceremonies)</td>
</tr>
</tbody>
</table>

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### First Semester

- **Wednesday, Thursday, Friday, August 16, 17, 18**
  - New student orientation
- **Friday, August 18**
  - General registration
- **Monday, August 21**
  - First day of classes
- **Monday, August 21**
  - Late registration fee in effect for all students
- **Friday, August 25**
  - Last day to register, add new courses, make section changes, change pass/fail and audit
- **Monday, September 4**
  - Labor Day recess
- **Saturday, September 30**
  - Rosh Hashanah (day of special concern)
- **Friday, October 6**
  - Mid-semester
- **Sunday, October 8**
  - Yom Kippur (day of special concern)
- **Tuesday, October 10**
  - Mid-semester reports due
- **Friday, October 27**
  - Last day to drop a class
- **Tuesday, November 7**
  - Election Day recess
- **Saturday, November 18 through Sunday, Nov. 26**
  - Thanksgiving recess
- **Thursday, December 7**
  - Last day to withdraw from university
- **Friday, December 8**
  - Last day of classes
- **Friday, December 8**
  - December convocation
- **Monday, December 11 thru Saturday, December 16**
  - Final examination week
- **Sunday, December 17 thru Tuesday, January 2**
  - Christmas recess
- **Friday, December 29**
  - Degree conferring date (no ceremonies)

### Second Semester

- **Wednesday, Thursday, Friday, January 3, 4, 5**
  - New student orientation
- **Friday, January 5**
  - General registration
- **Monday, January 8**
  - First day of classes
- **Monday, January 8**
  - Late registration fee in effect for all students
- **Friday, January 12**
  - Last day to register, add new courses, make section changes, change pass/fail and audit
- **Monday, January 15**
  - Martin Luther King’s birthday recess
- **Wednesday, February 7 (Not a holiday)**
  - West Virginia University Day
- **Friday, February 23**
  - Mid-semester
- **Tuesday, February 27**
  - Mid-semester reports due
- **Friday, March 16**
  - Last day to drop a class
- **Saturday, March 24 through Sunday, April 1**
  - Spring recess
- **Sunday, April 8**
  - Passover (day of special concern)
- **Friday, April 13**
  - Easter recess
- **Thursday, April 26**
  - Last day to withdraw from university
- **Friday, April 27**
  - Last day of classes
- **Monday, April 30 through Saturday, May 5**
  - Final examination week
- **Monday, May 7**
  - Grade reports for all graduates due in dean's office
- **Tuesday, May 8**
  - Dean’s reports on graduates due in ARC
- **Saturday, May 12**
  - Alumni Day
- **Sunday, May 13**
  - Commencement

### Summer Session I

- **Tuesday, May 22**
  - Registration
- **Tuesday, May 22**
  - First day of classes
- **Wednesday, May 23**
  - Late registration fee in effect for first six-week session for all students
- **Friday, May 25**
  - Last day to register for first six-week session and last day to add courses or make section changes in second six-week session
- **Monday, May 28**
  - Memorial Day recess
- **Friday, June 15**
  - Last day to drop a class for first six-week session
- **Thursday, June 28**
  - Last day to withdraw for first six-week session
- **Friday, June 29**
  - Last day of classes for first six-week session
- **Friday, June 29**
  - Final exam for first six-week session

### Summer Session II

- **Monday, July 2**
  - Registration
- **Monday, July 2**
  - First day of classes
- **Tuesday, July 3**
  - Late registration fee in effect for second six-week session for all students
- **Wednesday, July 4**
  - Independence Day recess
- **Friday, July 6**
  - Last day to register for second six-week session and last day to add courses or make section changes in second six-week session
- **Friday, July 27**
  - Last day to drop a class for second six-week session
- **Wednesday, August 8**
  - Last day to withdraw for second six-week session
- **Thursday, August 9**
  - Last day of classes for second six-week session
- **Thursday, August 9**
  - Final exam for second six-week session
- **Friday, August 17**
  - Degree conferring date (No ceremonies)
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West Virginia University
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Morgantown, WV 26506-6009
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FAX: (304)293-3080
www.wvu.edu

Graduate Programs
Office of Graduate Education
West Virginia University
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Morgantown, WV 26506-6203
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Director, Housing and Residence Life
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Morgantown, WV 26506-6430
Phone: (304)293-4491  FAX: (304)293-3369

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Veterans Educational Assistance
Student Financial Aid Office
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Morgantown, WV 26506-6004
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Dean, Student Life
West Virginia University
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Morgantown, WV 26506-6411
Phone: (304)293-5611  FAX: (304)293-7028
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President, WVU Foundation, Inc., Duke Perry
President, West Virginia University Hospitals, Inc., Bruce McClymonds
Special Assistant to the President and Provost, Virginia J. Petersen
Executive Assistant to the President, Nancy Wood
President, Potomac State College of WVU, Anthony Whitmore, Interim
President, West Virginia University at Parkersburg, Eldon Miller
President, West Virginia University Institute of Technology, Karen LaRoe

Deans
College of Agriculture, Forestry and Consumer Sciences/Agricultural and Forestry Experiment Station, Rosemary R. Haggett
Eberly College of Arts and Sciences, M. Duane Nellis
College of Business and Economics, Sydney V. Stern
College of Creative Arts, Philip J. Faini
School of Dentistry, Robert Hombrook, Interim
College of Engineering and Mineral Resources, Allen C. Cogley
College of Human Resources and Education, William L. Deaton
Perley Isaac Reed School of Journalism, William T. Slater
College of Law, John W. Fisher, Ill
University Libraries, Myra N. Lowe, Interim
School of Medicine, Robert M. D’Alessandri, M.D.
School of Nursing, E. Jane Martin
School of Pharmacy, George R. Spratto
School of Physical Education, Daria D. Brooks
Student Affairs, Herman L. Moses

Directors
AAO/EEP Program, Jennifer McIntosh
Academic Computing, Don E. McLaughlin
ADA Compliance, Barbara T. Judy
Administrative Business Systems, Deanna McMillian
Admissions and Records, Cheng H. Khoo
Aerospace Studies, Col. Richard G. Evans
Alumni Activities, Stephen L Douglas
Budget Planning, Narvel G. Weese, Jr.
Bureau of Business Research, Tom S. Witt
Business and Procurement, Jeri Ireland
Career Services Center, Robert L. Kent
Center on Aging, Hana Hermanova
Center for Black Culture and Research, Katherine Bankole
Center for Women’s Studies, Barbara Howe, Interim
Computing Services, David Swartz
Concurrent Engineering Research Center, Ramana Reddy
Controller, C.G. Jesse Mancini
Counseling Services, Catherine A. Yura
Dining Services, Jeff DeMoss
Environmental Health and Safety, Roger L. Pugh
Extended Learning, Sue Day-Perroots
Distinguished Professors

Arthur B. Hodges Professor of Law, Franklin D. Cleckley
Asphalt Technology Professor in the Department of Civil and Environmental Engineering, John Zaniek
C. Eugene Bennett Chair of Chemistry, Kenneth Showalter
C. W. Benedum Professor of Economics, Emeritus, William H. Miernyk
C. W. Benedum Professor of English, Emeritus, Ruel E. Foster
C. W. Benedum Professor of Mineral Processing, Thomas P. Meloy
C. W. Benedum Professor of Physics, Bernard R. Cooper
C. W. Benedum Professor of Theatre, Frank Gagliano
Centennial Professor of Chemistry, Emeritus, Gabor B. Fodor
Centennial Professor of Geology, Thomas W. Kammer
Centennial Professor of Psychology, Hayne W. Reese
Charles E. Compton Chair of Nutrition, Robert Hoeldtke
Charles T. Holland Professor of Mining Engineering, Syd S. Peng
Eberly College of Arts and Sciences Centennial Professor of English, Patrick Conner
Eberly College of Arts and Sciences Centennial Professor of Psychology, Kennon Lattal
Eberly Professor for Outstanding Teaching, Carl Rotter
Eberly Professor for Outstanding Teaching, Patricia Rice
Eberly Professor for Outstanding Teaching, Robert DiClerico
Eberly Professor of American History, Ronald Lewis
Eberly Professor of American Literature, Brian McHale
Eberly Professor of Clinical Psychology, George Eifert
Eberly Professor of Physics (Materials Science), Mohindar Seehra
Edward J. Van Liere Professor of Physiology, David Kreulen
GE Plastics Professor of Materials Engineering, Rakesh K. Gupta
George Berry Chair of Engineering, Echol "Bud" E. Cook
Hazel Ruby McQuain Chair of Rheumatology & Arthritis Diseases, Anthony DiBartolomeo, M.D.
Hazel Ruby McQuain Professor of Neurology, Ludwig Gutmann, M.D.
Jackson Chair of English, Robert Moss Markley
Louis F. Tanner Professor of Public Accounting, Robert S. Maust
Margaret Sanger Chair of Family Planning and Reproductive Physiology, Mark Gibson, MD, OB/GYN
Mylan Chair of Pharmacology, William W. Fleming
N. LeRoy Lapp Professor of Pulmonary and Critical Care Medicine, Daniel Banks, M.D.
Orlando Gabriele Chair of Radiology, Mathis Frick, M.D.
Power Professor of Electrical and Computer Engineering, Ronald L. Klein
Warren Point Chair of Internal Medicine (located at Charleston), Shawn Chillag, M.D.
William J. Maier, Jr. Visiting Chair of Law, Penny J. White
Woodrow A. Potesta Professor of Law, Charles R. DiSalvo

West Virginia University is a member of the North Central Association of Colleges and Schools. The University's educational programs are accredited by the North Central Association and by the appropriate accreditation agencies for professional programs.
Established in 1867, West Virginia University is the state’s major research, doctoral degree-granting, land-grant institution. WVU provides high quality programs of instruction, offering 166 degree programs at the undergraduate, graduate, and first-professional levels, including the state’s only law school; 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 WVU’s 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 17:1. Enrollment in one of the University’s 13 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 and permits quick and easy access to major locations within the University and downtown Morgantown.

The diversity of our student body is apparent in the fall 1999 enrollment of 22,238 students, as all 55 counties of West Virginia, 48 of 50 states, and 96 other countries are represented. WVU has had 25 Rhodes Scholars, 13 Truman Scholars, 17 Goldwater Scholars, and one British Marshall Scholar.

WVU is one of only 43 public universities that serve their states as research and land-grant institutions. 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 begin 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. Coal and energy are a major focus of University research because of WVU’s location in the eastern coal fields.

WVU campuses combine traditional and modern architectural styles, and eleven campus buildings are listed on the National Register of Historic Places. Many of these original buildings, including Stalnaker Hall, have been restored and renovated.

Current library holdings include 1.4 million volumes; 2.2 million microforms; 7,453 subscriptions; 20,482 linear feet of archival materials (in excess of 5,000,000 items); 38,670 audiovisuals; and various electronic databases. All libraries are automated with the NOTIS system.

WVU programs and services are accessibly located throughout West Virginia. Regional campuses include West Virginia University at Parkersburg, Potomac State College of West Virginia University, and West Virginia University Institute of Technology. WVU operates the Charleston Division of the Robert C. Byrd Health Sciences Center and the Wheeling Division of the School of Medicine. In addition, there are six extended learning regional centers at Charleston, Clarksburg, WVU-Parkersburg, Potomac State College, Shepherd College, and West Liberty State College.

West Virginia University operates eight experimental farms in Hardy, Jefferson, Monongalia, Monroe, and Preston counties; five experimental forests in Monongalia, Preston, Randolph, and Wetzel counties; a geology camp in Greenbrier County; 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 land-grant, doctoral degree-granting research university in the state of West Virginia. As such, the institution occupies a unique position within the state.

The Role of the University

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. The University nurtures these symbiotic interactions to build intellectual, social, and economic development for all of West Virginia.
West Virginia University'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, West Virginia University, including the regional campuses of Potomac State College of West Virginia University, West Virginia University at Parkersburg, and West Virginia University Institute of Technology, enrolls approximately 26,000 students and has an annual budget in excess of $461 million. The relationships between the University and its regional campuses are outlined in a study entitled West Virginia University: Regional Campus Relationships (1991). Human, physical plant, and budgetary assets are expended in three areas: instruction, research and scholarship, and service.

Instruction
Degrees are awarded at the baccalaureate, master's, doctoral, and professional levels. The University offers 166 degree programs through the departments/divisions of 13 colleges and schools:
- The College of Business and Economics, including the Departments of Accounting, Business Management, Economics, Finance, and Marketing.
- The College of Creative Arts, including the Divisions of Art, Music, and Theatre and Dance.
- The School of Dentistry, including the Departments of Dental Hygiene, Endodontics, and Orthodontics.
- 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.
- The Perley Isaac Reed School of Journalism, including sequences in Broadcast News, News-Editorial, and Public Relations.
- The College of Law.
- The School of Medicine, including the Departments of Anatomy, Anesthesiology, Behavioral Medicine and Psychiatry, Biochemistry, Community Health Promotion, Community Medicine, Exercise Physiology, Family Medicine, Medical Technology, Medicine Microbiology and Immunology, Neurology, Neurosurgery, Obstetrics and Gynecology, Occupational Therapy, Ophthalmology, Orthopedics, Otolaryngology, Pathology (Medical Technology), Pediatrics, Pharmacology and Toxicology, Physical Therapy, Physiology, Public Health, Radiology, Surgery, and Urology, the HSC branch campus at Charleston, and the Division at Wheeling.
- The School of Nursing.
- The School of Pharmacy.
- The School of Physical Education.

The University conducts graduate studies in Morgantown and at five off-campus centers 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 Gerontology Center, the Institute for Public Affairs, the Center for Women’s Studies, the Center for Economic Research, the Harley O. Staggers National Transportation Center, the Energy and Water Research Center, the Appalachian Hardwood Research Center, the Concurrent Engineering Center, the Institute of Occupational Health and Safety, the Center for Constructed Facilities, etc.

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.

West Virginia University 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 West Virginia University 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 serves the people of all 55 counties of West Virginia through direct patient care both at its campuses and at outreach clinics throughout the state. The Health Sciences Center maintains a cancer information service, a drug information service, and a poison control center. HSC 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 Health Sciences Center conduct basic research focusing on the specific needs of West Virginians.

Potomac State College of West Virginia University

Potomac State College of West Virginia University, situated in West Virginia’s Eastern Panhandle in the town of Keyser, provides students in the freshman and sophomore years with liberal arts and sciences and pre-professional studies in agriculture, business and economics, education, engineering, forestry, journalism, medical technology, music, nursing, pharmacy, physical therapy, social work, and veterinary medicine. Career-Technical programs at Potomac State College, which lead to the associate in applied science degree, include general business, accounting, industrial management, small business administration, agriculture, microcomputer applications, programming, electronics technology, horticulture technology, executive secretarial, medical secretarial, and information processing. A certificate is offered in desktop publishing. Established in 1901, Potomac State College is a residential campus of WVU and program offerings transfer easily to university/college parallel programs or provide immediate access to a variety of careers. This college serves as the cultural hub and educational leader of its five-county Potomac Highlands Region and attracts students from across West Virginia, the nation, and world. Phone 1-800-262-7332; Web: http://pscvax.psc.wvnet.edu.

West Virginia University at Parkersburg

As a regional higher education center for a seven-county service area in West Virginia’s Mid-Ohio Valley, West Virginia University at Parkersburg delivers community-based educational programs that meet the broad educational goals of area residents. Established in 1961, WVU-P offers programs in development studies, general education, and specialized and technical training. Its offerings consist of a blend of one and two-year career and academic programs and selected baccalaureate degrees. Career programs include certificates in industrial maintenance, surgical technology, and welding. Associate in applied science degrees are available in business technology, criminal justice, engineering technology, environmental
technology, industrial maintenance, journalism, manufacturing processes, nursing, occupational development, paramedic science, social services technology, welding management technician, and welding skills technology. Transfer programs include the Associate in arts and the associate in science degrees in business administration, computer science, data processing, engineering, and pre-professional sciences, WVU-P also offers a bachelor of arts degree in business administration and a bachelor of science in elementary education. Many of WVU-P’s program offerings transfer easily to university/college parallel programs. Phone: 1-800-WVA-WVUP; Web: www.wvup.wvnet.edu; e-mail address: wvupinfo@alpha.wvup.wvnet.edu.

West Virginia University Institute of Technology

The West Virginia University Institute of Technology is WVU’s southernmost regional campus. Located in Montgomery, WVUIT serves the region and the state by preparing students at the associate, baccalaureate, and master’s level for careers in the basic and applied sciences (e.g., engineering, business, technology, and the health, life, and physical sciences). WVUIT serves as the sole preparer of vocational-technical teachers in the state as well as prepares students through the community college division for technically-oriented occupations. It not only provides for community education needs in the region, but also addresses the statewide and regional needs for delivery of engineering and technical programs through extension offerings, continuing education, and consultative activities of the faculty. WVUIT currently offers certificates and associate’s degrees in 13 fields, baccalaureate degrees in 27 fields, and a master’s degree in engineering. WVU in Morgantown and WVUIT, along with the other regional campuses, are working together to use technology to expand offerings available to students in the southern part of the state. Phone: 1-800-554-TECH, Web: http://wvit.wvnet.edu.

Commitment to Social Justice

West Virginia University’s role as the 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 of color, including women; people of color; persons with disabilities; gays, lesbians, and bisexuals; veterans; and persons of different religions, sexual orientation, ages, and international, ethnic, and economic backgrounds benefit from the many opportunities the institution provides.

In keeping with this responsibility, the members of the academic community are expected to demonstrate civility and mutual respect for all persons, understanding, and appreciation for 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 West Virginia University’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

The University System of West Virginia Board of Trustees is vested by law with the authority for the control and management of the University and all other institutions of the University System of West Virginia. The governor appoints the members of the board who serve with the chairs of the Advisory Council of Faculty, the Advisory Council of Classified Staff, and the Advisory Council of Students, the Chancellor of the Board of Directors of the State College System, and the State Superintendent of Schools. The University president, appointed by the Board of Trustees, is the chief executive officer of the University.

The University’s Board of Advisors reviews all WVU proposals involving its mission, academic programs, budget, capital facilities, institution-wide personnel policies, and other matters requested by the president. It also serves as the search and screening committee for new university presidents under guidelines established by the Board of Trustees (in this role, the Board appoints three additional WVU faculty, and the Trustees appoint three additional members to comprise a 17-member committee).
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 Trustees. Senators are elected by members of the University faculty to represent their colleges and other constituencies. Each senator represents twenty 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 a population of 47,000; Monongalia County, 79,000. 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 of the city varies from 800 to 1,150 feet above sea level, and the surrounding hills rise eastward to reach an altitude of 2,600 feet just ten miles from the city. The area’s temperate climate has four distinct seasons of about equal length. Morgantown averages 40 inches of precipitation a year. Autumn is beautiful when the leaves turn red, orange, and yellow. A north-south interstate highway (I-79) is one mile west of Morgantown. U.S. 19 and U.S. 119 pass through Morgantown in a north-south direction. Interstate 68, an east-west highway, links I-79 at Morgantown to I-81 in the Cumberland/Hagerstown, Maryland, region.

Because of WVU’s resources, the Morgantown area is a major research center in the Appalachian region. Four 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), Morgantown Energy Technology Center of the Department of Energy, and Soil Conservation Service (West Virginia headquarters).
Housing and Residence Life

The University owns and operates nine residence halls with a capacity of approximately 3,400. 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, 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 (H&RL) also operates apartment complexes. Although primarily for graduate students, the Medical Center Apartments accommodate juniors, seniors, and students 21 or older based on availability. Information about University-owned apartments is available by calling (304) 293-5840. Visit Housing and Residence Life via the Internet at www.hrl.wvu.edu.

Office of Academic Computing

The Office of Academic Computing is a service unit of WVU Office of Information Technology (WVU-OIT). Academic Computing 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. Academic Computing operates computer labs on the downtown and Evansdale campuses. A new large computer lab will open in White Hall in late 1999. These labs provide student, faculty, and staff access to computing resources including word processing, spreadsheet, database, and graphics software, e-mail the Internet and World Wide Web. They also provide access to selected instructional software programs for specific courses. Additionally, the Office of Academic Computing 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 Instructional Technology Resource Center, and the operation of multi-media distribution system (Project 320). Call 293-2900 or check the website www.access.wvu.edu to get more information about the Office of Academic Computing, its services, and programs.
Part 2 Admission

West Virginia University 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.

West Virginia University 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, test results—are reviewed carefully.

You may receive an application for admission at many local high schools, or you may write to:

Office of Admissions and Records  
Box 6009  
Morgantown, WV 26506-6009

Or call:  
(304) 293-2121 and 1-800-344-WVU1.  
E-mail address: wvuadmissions@wvu.edu  
Web page: http://www.arc.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

Please complete of the application, and return it to your high school counseling office. Your counselor will mail the application with the official record of your high school transcript to WVU. When you graduate, ask your counselor to send your final high school transcript verifying graduation to the Office of Admissions and Records.

General Credit Requirements

In addition to your application you must request an official high school transcript and proof of measles and rubella immunization. To be considered for freshman admission, you must present the following high school credits:
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.

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 nonresident, 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 their senior year. If you do not meet one of the requirements, you may still apply and the admissions review committee will review your application. Please submit a written statement telling us 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), request that the State Department of Education mail copies of your scores to the Office of Admissions. Request that the high school you last attended send a copy of your transcript to WVU, listing the course work 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.

High School Specials

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. A regular application for admission must be submitted along with the high school transcript, a letter of recommendation from the high school counselor or principal, and a letter of permission from the parent(s) or guardian(s). Course work 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 have also 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 listed previously in the Freshman Admissions section of this catalog. You must have your principal or guidance counselor submit a letter supporting your application. Your parents 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
P.O. Box 6004
Morgantown, WV 26506-6004
(304) 293-5242
1-800-344-WVU1
E-mail: Finaid@wvnvm.wvnet.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 credit for physical education courses (PE 1 and 2) and for military science under our advanced placement program.

Health Sciences Center

The Admissions and Records Office at the 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
West Virginia University
P.O. Box 9815
Morgantown, WV 26506-9815
or call (304) 293-3521.

If you are an applicant for freshman admission, you should use the regular application (except for dental hygiene) 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: Intrauniversity

If you are a student at Potomac State College, WVU at Parkersburg, or WVU Institute of Technology (WVUIT), you may transfer to the Morgantown campus if you meet admission requirements. In addition, you must meet the requirements of the program that 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 North Central Association of Colleges and Schools or by other regional accrediting associations accepted by West Virginia University. 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 meet freshman admission standards (see page 16). Some individual programs have differing course requirements and higher grade-point average requirements than those stated here.

To be considered for transfer admissions please submit a complete 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, please 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, please submit ACT or SAT scores and a high school transcript as part of your application. We may only evaluate transferable credit after receipt of complete official transcripts and admission to West Virginia University. 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 those college-level courses completed at any institution in the West Virginia State System of Higher Education may be transferable toward a bachelor’s degree, if appropriate to that school or college. No more than 72 hours of credit and grades earned for courses completed at community colleges in the West Virginia State System of Higher Education may transfer toward a bachelor's degree, if appropriate to that degree.

Only credits, not grades, in which you earned a grade of D or higher (effective Fall 1997), are transferable from institutions outside the West Virginia system for college-level courses, if course content is appropriate to a WVU degree. Transfer credits from two-year community colleges and junior colleges outside of the West Virginia system are limited to 72 hours of lower-division courses. Total hours transferred from all community or junior colleges are limited to a maximum of 72 hours of lower division courses.
International Student Admission

West Virginia University is authorized under federal law to enroll nonimmigrant 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 nonacademic requirements. April 1 has been established as the application deadline for the fall semester. International students applying for admission to West Virginia University must submit the following:

- Completed International Student Admission Application.
- Application service fee.
- Results of the Test of English as a Foreign Language (TOEFL). TOEFL results must be sent to WVU directly from the Educational Testing Service (ETS).
- 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. Wherever possible, all application material should be submitted at one time (TOEFL 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 can not 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 or not 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 United States send their official transcript directly to WVU.

Documents received by WVU can not be returned to the applicant or copied for the applicant. It is therefore recommended that students who receive only one original copy of their credentials submit certified copies with their 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) as the measure of English language proficiency. A score of 213 on the Computer-Based TOEFL or 550 on the Paper-Based TOEFL 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 the 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).
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 scores and who will enroll in the 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 for the Intensive English Program should be directed to:

Intensive English Program  
Department of Foreign Languages  
West Virginia University  
P.O. Box 6298  
Morgantown, WV 26506-6298

**Financial Documents and Student Visa**

International students requiring a form I-20 or IAP-66 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 IAP-66 can be issued.

**Study Abroad Programs**

West Virginia University strongly encourages students to take part in a study abroad program as part of their undergraduate educational experience. WVU considers an international experience an integral part of preparing all students to enter the workforce. In addition, students who participate in an overseas experience may increase self-reliance, motivation, and focus in their academic and life goals.

Students may go abroad for one or more semesters. In order to transfer credit back to WVU, a D or higher (or the host institution’s equivalent) is required. Credit is counted toward graduation, but grades are not transferred and do not affect the GPA.

Students have several options for programs. The study abroad advisor in Stansbury Hall advises students on finding the right program for their academic and personal needs and assists with departure and re-entry preparations. For more information, call (304) 293-6955.

**Other Options**

Students may also choose to enroll in other institutions’ study abroad programs. These must be approved for transient credit by the Office of Admissions and Records and the student’s academic department and college. WVU Summer study abroad programs are offered by the Department of Foreign Languages and through the Office of International Programs.

**Exchange Programs**

The International Student Exchange Program (ISEP) is a multilateral student exchange network involving over 135 international universities from which students can choose to study for a semester or a year. Students pay room, board, tuition and fees at WVU and then take the place of an outgoing student at an ISEP-member institution. For more information, call (304) 293-3519
The National Student Exchange Program (NSEP) offers WVU students the opportunity to study at another higher education institution. There are more than 130 consortium schools located throughout the United States and territories. Students pay their regular tuition costs or in some cases pay in-state tuition at the host college. This unique program affords students the opportunity to continue studying in their major field while enjoying a new collegiate environment for up to one academic year. If you are interested in exploring the new opportunities and adventures awaiting you, contact the National Student Exchange Coordinator located on the 3rd floor in Purinton House, or call (304) 293-6871.

WVU Sister Institutions
Each year, a number of sister institutions around the world allow students to visit as exchange students. Like ISEP, students pay regular tuition and fees, and in some cases, room and board fees at WVU. Currently, WVU has programs at:
Kansai Gaidi University, Japan
Aalborg University, Denmark
Royal Melbourne Institute of Technology, Australia
University of Hertfordshire, England (for engineering students)
University of Ulster, Coleraine, Northern Ireland
International Business School, Lippstadt, Germany (includes an internship)
University of Leeds, England (preference given to honors students and not a regular exchange) For more information, contact the Study Abroad Office at (304) 293-3519

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 will need an official statement of good standing indicating an overall grade point average of 2.0 or an official transcript from the last college attended. In addition, you must complete an undergraduate 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 between your WVU work and your work from 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. Any outstanding financial obligations must be paid before readmission can be processed.

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.

*Note: D grades are accepted only for students entering WVU, Morgantown campus, for the first time during or after Fall 1997. Students entering before Fall 1997 may only transfer grades of C or higher.

**Second or Multiple Degrees**

**WVU Students**

To earn a second bachelor’s degree, an additional 30 credit hours beyond your first degree will be required in most majors. All requirements must be satisfied, departmental and otherwise, for the second degree, as well as all residence requirements. (See “Residence Requirements,” page 33.) To earn two baccalaureate degrees at the same graduation date, you must satisfactorily complete at least 158 credits and meet all requirements, departmental and otherwise, of both degree programs.

**Transfer Students**

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 degree. 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 “Residence Requirements,” page 33.)

**Non-Degree**

**Post-Baccalaureate Students**

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 are not working toward a graduate degree, and credit earned while under this classification is limited to undergraduate credit. Post-baccalaureate students 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.

**Special Students**

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.
Academic Forgiveness Policy

WVU allows an 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 for at least five calendar years and has not 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:

a. Admission to WVU under the academic forgiveness policy is conditional 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.

b. 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.

c. 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.

d. The student must meet and complete all course work 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.

e. A student admitted to WVU under this policy will follow all regulations regarding probation, suspension, and expulsion.

Measles and Rubella Immunization

If you are a new freshman or transfer student, you are required to provide proof of measles and rubella immunization. This requirement can be met by an immunization record signed by a physician or an official copy of your permanent high school health record with a report of the required immunizations. One of these documents must be sent to WVU before enrollment. Exemption from this requirement is granted for religious or medical reasons. Please request an exemption form from the Office of Admissions and Records. Failure to provide your immunization record may prevent you from further registration. For your protection, you are encouraged to get a second measles and rubella immunization.

Campus Visits and Tours

Prospective students and their families are encouraged to visit WVU. The WVU Visitors Center is open from 8:00 a.m. until 6:00 p.m. Monday through Friday; 9:00 a.m. until 4:00 p.m. on Saturday; and from noon until 4:00 p.m. on Sunday. Guided tours are available daily except Sundays; phone 1-800-344-WVU1, press 2. Or, tour campus via cyberspace: http://www.wvu.edu/~instadv/tour.

In addition we sponsor open houses called Mountaineer Visitation Days. For more information, please contact New Student Services at 1-800-344-WVU1; or (304) 293-2124 x 1226.
## Part 3 Academic Information

### Degree Programs Offered by WVU

<table>
<thead>
<tr>
<th>Program</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctorate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multidisciplinary Studies</td>
<td></td>
<td></td>
<td>B.A.</td>
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</tbody>
</table>

#### College of Agriculture and Forestry

- Agricultural and Resource Economics          | M.S.     |
- Agricultural & Environmental Education      | M.S.     |
- Agricultural Sciences                       | Ph.D.    |
- Animal and Veterinary Sciences               | M.S.     |
- Family and Consumer Sciences                | M.S.     |
- Forest Resources Management                  | B.S.F.   |
- Forest Resource Science                      | Ph.D.    |
- Genetics and Developmental Biology           | M.S.     |
- Landscape Architecture                       | B.S.L.A. |
- Natural Resource Economics                   | Ph.D.    |
- Plant and Soil Sciences                      | M.S.     |
- Recreation and Parks Management              | M.S.     |
- Reproductive Physiology                      | Ph.D.    |
- Resource Management                          | M.S.     |
- Wildlife and Fisheries Resources             | M.S.     |
- Wood Industries                              | B.S.F.   |

#### Eberly College of Arts and Sciences

- Biology                                      | B.A., B.S. M.S. Ph.D. |
- Board of Regents                             | B.A. |
- Chemistry                                    | B.A., B.S. M.S. Ph.D. |
- Communication Studies                        | B.A. M.A. |
- Computer Science                             | B.S. |
- Economics                                    | B.A. M.A. Ph.D. |
- English                                      | B.A. M.A. Ph.D. |
- Foreign Languages                            | B.A. M.A. |
- Geography                                    | B.A. M.A. Ph.D. |
- Geology                                      | B.A., B.S. M.S. Ph.D. |
- History                                      | B.A. M.A. Ph.D. |
- Interdepartmental Studies                    | B.A. |
- Latent Fingerprint Identification            | B.S.F.I. |
- Liberal Studies                              | M.A.L.S. |
- Mathematics                                  | B.A. M.S. Ph.D. |
- Philosophy                                   | B.A. |
- Physics                                      | B.A., B.S. M.S. Ph.D. |
- Political Science                            | B.A. M.A. Ph.D. |
- Psychology                                   | B.A. M.A. Ph.D. |
- Public Administration                        | M.P.A. |
- Social Work                                  | B.S.W. M.S.W. |
- Sociology and Anthropology                    | B.A. M.A. |
- Statistics                                   | B.A. M.S. |

#### College of Business and Economics

- Accounting                                   | B.S.B.A. |
- Business Administration                      | M.B.A. |
- Business Management                          | B.S.B.A. |
- Economics                                    | B.S. M.A. Ph.D. |
- Finance                                      | B.S.B.A. |
- Industrial Relations                         | M.S. |
- Marketing                                    | B.S.B.A. |
- Professional Accountancy                     | M.P.A. |

#### College of Creative Arts

- Art                                          | M.A. |
Music ................................................. B.M. ......................... M.M. ....... D.M.A., Ph.D.
Theatre ................................................ B.F.A. ................. M.F.A.
Visual and Performing Art ............................................. B.F.A. ................. M.F.A.

**School of Dentistry**
Dental Hygiene ........................................ B.S. ................. M.S.
Dentistry ............................................................................. D.D.S.
Dental Specialties ................................................. M.S.

**College of Engineering and Mineral Resources**
Aerospace Engineering ....................................... B.S.A.E. .......... M.S.A.E.
Biometrics ......................................................... B.S.E.I.
Chemical Engineering ......................................... B.S.Ch.E. .......... M.S.Ch.E.
Civil Engineering ................................................... B.S.C.E. .......... M.S.C.E.
Computer Engineering ......................................... B.S.Cp.E.
Computer Science ..................................................... M.S.C.S. ............ Ph.D.
Electrical Engineering ..................................... B.S.E.E. .......... M.S.E.E.
Engineering ......................................................... M.S.E. .......... Ph.D.
Engineering of Mines ....................................... B.S.E.M. .......... M.S.E.M.
Industrial Engineering ........................................ B.S.I.E. .......... M.S.I.E.
Mechanical Engineering ..................................... B.S.M.E. .......... M.S.M.E.
Mineral Engineering .............................................. Ph.D.
Occupational Hygiene and Occupational Safety .... M.S.
Petroleum and Natural Gas Engineering ............... B.S.PNGE .......... M.S.P.N.G.E.
Safety and Environmental Management .................. M.S.
Software Engineering ............................................. M.S.

**College of Human Resources and Education**
Education ................................................................. Ed.D.
Counseling ................................................................. M.A.
Counseling Psychology ........................................... Ph.D.
Educational Leadership ............................................. M.A.
Educational Psychology ......................................... M.A.
Elementary Education ............................................. M.A.
Reading ................................................................. M.A.
Rehabilitation Counseling ......................................... M.S.
Secondary Education ............................................... M.A.
Special Education ..................................................... M.A.
Speech Pathology and Audiology ......................... B.S. .......... M.S.
Technology Education ............................................. M.A.

**Perley Isaac Reed School of Journalism**
Journalism .............................................................. B.S.J. .......... M.S.J.

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

**School of Medicine**
Anatomy ............................................................... M.S. .......... Ph.D.
Biochemistry (Medical) ............................................. M.S. .......... Ph.D.
Community Health Promotion .................................. M.S.
Exercise Physiology ................................................. B.S. .......... M.S.
Medical Technology ................................................ B.S. .......... M.S.
Medicine ................................................................. M.D.
Microbiology and Immunology ................................ M.S. .......... Ph.D.
Occupational Therapy ............................................. M.O.T.
Pharmacology and Toxicology ................................ M.S. .......... Ph.D.
Physical Therapy ..................................................... B.S.
Physiology (Medical) ................................................. M.S. .......... Ph.D.
Public Health .......................................................... M.P.H.

**School of Nursing**
Nursing ............................................................... B.S.N. .......... M.S.N.

**School of Pharmacy**
Pharmaceutical Sciences ........................................ M.S. .......... Ph.D.
Pharmacy ................................................................. M.S. .......... Pharm.D.

**School of Physical Education**
Physical Education ........................................... B.S.P.Ed. .......... M.S. .......... Ed.D.
Sport Studies ...................................................... B.S.P.Ed.

26 West Virginia University Undergraduate Catalog
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 intend 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 WVU college or school offering the minor.

2. The student works with her/his major advisor to incorporate minor requirements into schedule planning. Students are welcome to consult with advisors in the minor department of 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 her/his major field.

Available Minors

*Eberly College of Arts and Sciences:* Communications Studies, Economics, English Foreign Languages (including Linguistics and Foreign Literature in Translation), Geography, Geology, History, International Studies, Mathematics, Native American Studies, Philosophy, Physics, Political Science, Religious Studies, Sociology and Anthropology, Statistics, Women’s Studies

*College of Business and Economics:* Business Administration

*College of Creative Arts:* Art History, Music

*College of Engineering and Mineral Resources:* Computer Science

*ROTC:* Aerospace Studies, Military Science

Academic Common Market

West Virginia provides its residents 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 through the Associate Provost for Curriculum and Instruction, 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 University of West Virginia Board of Trustees, 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’s 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, the social sciences, and the natural sciences and an appreciation of the arts should be integrated with course work in the major to facilitate an understanding of the world at large. This foundation for life-long 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 life-long commitment to ethical behavior, responsible citizenship, and public service.

Commitment and 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 West Virginia University. 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 session in which you expect to graduate.

Academic Advising

When you enter West Virginia University, you are assigned an academic advisor. Your advisor assists you as you prepare your schedule, assigns classes as required by your degree program, and certifies your study list to the Director of Admissions and Records. Your advisor is also expected to give you advice and sympathetic guidance. You are expected to meet with your advisor to discuss your academic problems.

Students in Human Resources and Education, Social Work, and some students in Arts and Sciences are admitted to pre-programs in particular majors. You remain in a pre-program until you fulfill all requirements for admission to the degree program. You may choose to enter other pre-programs. Normally, these programs require you to complete 30-58 credits before you are admitted to a degree program. If you select one of these pre-programs, you are advised through the Undergraduate Academic Services Center. The Center provides advising in the following areas: general studies, pre-biology, pre-business and economics, pre-BFL (dual degree program in business and foreign languages), pre-chemistry, pre-communication studies, pre-English, pre-foreign languages, pre-geology, pre-history, pre-interdepartmental majors (including pre-liberal arts), pre-journalism, pre-math, pre-medical technology, pre-nursing, pre-occupational therapy, pre-pharmacy, pre-physical therapy, pre-political science, pre-psychology, and pre-sociology and anthropology.
Students who are undecided on a career field may enroll in general studies. If you choose this option, you can explore several career and academic options before you make a final choice. While you explore these different areas, you enroll in courses that fulfill general University requirements for graduation and also provide a solid liberal arts foundation. You can be a general studies student for four semesters or until you are admitted to a degree program. If you select general studies, your advisor will be located in the Undergraduate Academic Services Center. The Center staff also advises part-time and special (non-degree) students.

Regulations Affecting Degrees

All degrees are conferred by the University of West Virginia Board of Trustees as recommended by the faculties of the various colleges and schools. A degree is granted at the end of the semester or summer session in which you complete the requirements for that degree, provided that you have submitted an application for graduation and diploma 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 University of West Virginia Board of Trustees or by local, state, or federal law.

West Virginia University 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.

West Virginia University will not confer a degree nor 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

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 128 to 145. Required grade averages range from 2.0 to 2.5. The determination to count ROTC courses as free electives or toward fulfillment of Liberal Studies Program 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 LSP requirement in each cluster area.

Liberal Studies Program (LSP)

WVU recognizes the need for students to have a wide range of knowledge and experience to complement their chosen field of study. The LSP serves this purpose and is based on the following two principles.

1. In our world of rapid economic, social, and technological change, universities recognize that a broad educational foundation is necessary for the life-long learning that makes meaningful careers and other goals attainable. WVU’s approach to this foundation is its Liberal Studies Program, which provides baccalaureate graduates with the skills and knowledge to continue their intellectual growth as a life-long process. These skills and knowledge include the ability to:
   • Reason clearly.
   • Communicate effectively.
   • Understand major influences in society.
2. General education helps students to become thoughtful participants in a democratic society and to achieve the intellectual integration and awareness they need to meet changes and challenges in their personal, social, political, and professional lives. General education courses introduce the great ideas and controversies in human thought and experience. These courses provide breadth, perspective, and rigor that enable WVU graduates to:

• Understand the past and its traditions.
• Identify and resolve issues of personal and professional ethics.
• Contribute in meaningful ways to their local, national, and global communities.
• Understand alternative viewpoints and cultures.
• Accept the assume responsibility for themselves and their world.
• Interact constructively with people different from themselves.
• Understand important issues confronting society.
• Gain a critical understanding of the arts, sciences, and humanities.
• Understand an increasingly interdependent world.
• Use quantitative and scientific knowledge and technology accurately.

Program Components

West Virginia University Liberal Studies Program requirements for all students who receive the baccalaureate degree are divided into a skills component and a distribution component. These are described below.

Skills Requirements

Writing:

• All students must successfully complete English 1 and 2. This requirement is in addition to the Cluster A requirements described below.
• 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. These courses will be identified in the LSP portion of the Schedule of Courses by a “W”. The student must complete English 2 before fulfilling the “W” requirement.

Mathematics:

• All students must successfully complete at least three hours of mathematics or statistics. This requirement is in addition to the Cluster C requirement that is described below. Courses approved for the mathematics skills requirement: Mathematics 3, 4, 11, 14, 15, 16, 23, 28, 128, 131, and 168; Economics 125, and Statistics 101.

Distribution Requirements

The University courses in the LSP that provide students with broad liberal knowledge and experience are grouped into three Clusters: Cluster A (Humanities and Fine Arts): The study of humanities develops knowledge of and appreciation for the accumulated wisdom and experience contained in world literature, history, fine arts, religion, and philosophy, with the objective of bringing the student to an active consciousness of the living, operating, and continuing values of human culture. Cluster B (Social and Behavioral Sciences): The social and behavioral sciences develop in students the knowledge and appreciation of both themselves and the world in which they live. Through the study of anthropology, economics, geography, linguistics, political science, psychology, sociology, and communication studies, students are able to comprehend major concepts, evaluate movements and ideas, and anticipate future trends in societies both at home and abroad. Cluster C (Natural Sciences and Mathematics): Courses in the natural sciences and mathematics provide information about the natural world and provide a perspective on how an understanding of the natural world is developed. Educated persons should have a knowledge of the physical, chemical, geological, and biological entities and processes that constitute the natural world. Courses in mathematics, statistics, and computer science can provide the technical tools for an understanding of the natural world, as well as an understanding of the methods and value of mathematics considered as a discipline in itself.
Distribution of Cluster Requirements

Cluster A Requirements: 12 hours of Cluster A courses must be distributed according to the following provisions and successfully completed:

- Courses must be successfully completed in three disciplines.
- Two courses must be successfully completed in the same discipline.
- If foreign language courses are chosen to fulfill Cluster A requirements, no student may use more than one first-semester course of an elementary foreign language. Language courses in a student’s native language may not be used to fulfill Cluster A requirements.
- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster A requirements.

Cluster B Requirements: 12 hours of Cluster B courses must be successfully completed and distributed according to the following provisions:

- Courses must be successfully completed in three disciplines.
- Two courses must be successfully completed in the same discipline.
- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster B requirements.

Cluster C Requirements: 11-12 hours of Cluster C courses must be successfully completed and distributed according to the following provisions:

- Courses must be successfully completed in two disciplines.
- At least one course must include a laboratory (identified in the Schedule of Courses.)
- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster C requirements.

Note: Foreign or Minority Culture Requirement: one three-credit-hour course must focus substantially on the study of a foreign or minority culture or cultures or on women and/or issues of gender.

Inventory of LSP Courses

The courses listed below in Clusters A, B, and C do not constitute an inclusive listing. The Liberal Studies Committee will be changing the list of courses as evaluations are continually made of courses submitted to the LSP Committee for its approval. Students and advisors should consult the latest Schedule of Courses for the most recent inventory of courses included in the Liberal Studies Program. Any course listed at any time during the student’s period of study may be counted for Liberal Studies Program credit.

Cluster A Courses

Arabic 1, 2, 3, 4.
Art 30, 105, 106.
Chinese 1, 2, 3, 4.
Classics 1, 2, 3, 4, 101, 102.
Communication Studies 21, 187.
French 1, 2, 3, 4, 10, 11.
German 1, 2, 3, 4, 10, 11.
Humanities 1, 2, 3, 4, *5, 10, 11, *20.
Italian 1, 2, 3, 4.
Japanese 1, 2, 3, 4.
Landscape Architecture 112.
Linguistics 3.
Mathematics 161, (Equiv. to Phil. 106).
Portuguese 1, 2, 3, 4.
Russian 1, 2, 3, 4.
Spanish 1, 2, 3, 4, 10, 11.
Theatre 30, 50, 74.
Women's Studies *40.

Cluster B Courses
Agricultural Education 162.
Child Development and Family Studies 10.
Economics 51, 54, 55.
Forestry 140.
Journalism 1.
Linguistics 1.
Mineral and Energy Resources 97.
Psychology 1, 141, 151, *170.
Recreation and Parks 43.
Resource Management 1.
Social Work *47.
Sport Studies 72.
Technology Education 181.
Women's Studies *40, *145.

Cluster C Courses
Astronomy 106.
Chemistry †11, *12, *15, †16, †17, †18.
Computer Science 5.
Economics 125.
Environmental Microbiology 141.
Geography 7, 107.
Geology 1, *2, 3, *14, †6, 7.
Human Nutrition and Foods 71.
Mathematics 3, 4, 11, 14, 15, 16, 23, 28, 128, 131, 168.
Multidisciplinary Studies 2, *60, 70, 90, 91.
Philosophy 11.
Physical Science †11, †12
Statistics 101.
* Satisfies the foreign culture, minority, or gender studies requirement.
† Satisfies the laboratory course requirement.

Approved 200-Level Courses
No 200-level courses are included in Clusters A, B, and C because they are deemed to be not ordinarily appropriate for the Liberal Studies Program. However, a student may petition to take one 200-level course from the list of approved courses indicated below in fulfillment of the LSP requirement for each of the three cluster areas. The student must petition through his/her advisor for approval. This can be accomplished with the use of a standard petition form filled out by the student, approved by the advisor, and placed in the student’s file.
Cluster A Courses
Communication Studies 230.
Geography 212.

Cluster B Courses
Communication Studies 221.
Community Health Promotions *290.
Economics 211.
Technology Education *245, 281.

*Satisfies the foreign culture, minority, or gender studies requirement.

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 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.

*Note: D grades are accepted only for students entering WVU Morgantown campus, for the first time during or after Fall 1997. Students entering before Fall 1997 may only transfer grades of C or higher.
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 his 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)

West Virginia University 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 enter the University early, as previously explained, or 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 competence equal to that received by taking the actual college course. The chart on page 36 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 University of West Virginia Board of Trustees allows University credit to be awarded for successful completion of CLEP subject examinations, except English composition and freshman English. Up to 34 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 37 indicates the areas in which WVU grants credit based on the minimum score required. It should be noted that no one is eligible for CLEP credits after he/she has enrolled at WVU.

A veteran may receive advanced placement for specific military experience and should contact the Director of Admissions and Records for specific information.

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.

300-Level Courses

Off-campus. If you are an advanced student and wish to take an off-campus course numbered 300-399, 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 300-level course may be obtained from the Office of Admissions and Records.
On-campus. If you are an undergraduate junior or senior in any class carrying a 300-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.

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 the Office of Admissions and Records. After you get the form, 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). 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 200-399. 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.

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 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 two six-week sessions. Summer Session One begins in the middle of May and ends on June 30. Summer Session Two begins on July 1 and ends the second week of August. Requirements for admission and work performance for the summer sessions are the same as for the regular semesters.

You may earn credit toward a baccalaureate, master’s, doctoral, or professional degree in the summer sessions. Summer offerings vary from year to year. For complete information concerning course offerings during the summer sessions, consult the Summer Session Schedule of Courses.

Evening Classes

If you are unable to attend classes during the day, the University offers evening courses taught by regular faculty. These courses carry full college credit and are offered at both the undergraduate and graduate levels.
## Advanced Placement Program

<table>
<thead>
<tr>
<th>Examination</th>
<th>Minimum Score</th>
<th>Credit Hours</th>
<th>Course Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART (Studio)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drawing Portfolio</td>
<td>3</td>
<td>3</td>
<td>ART 30</td>
</tr>
<tr>
<td>General Portfolio</td>
<td>4</td>
<td>4</td>
<td>ART 30</td>
</tr>
<tr>
<td>ART HISTORY</td>
<td>3</td>
<td>3</td>
<td>ART 30</td>
</tr>
<tr>
<td>BIOLOGY</td>
<td>3</td>
<td>8</td>
<td>BIOL 1, 2, 3, 4</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>BIOL 15</td>
</tr>
<tr>
<td>CHEMISTRY</td>
<td>3</td>
<td>8</td>
<td>CHEM 15-16</td>
</tr>
<tr>
<td>CLASSICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latin: Virgil</td>
<td>3</td>
<td>3</td>
<td>CLAS 191 A</td>
</tr>
<tr>
<td>Latin: Catullus-Horace</td>
<td>3</td>
<td>3</td>
<td>CLAS 191 B</td>
</tr>
<tr>
<td>COMPUTER SCIENCE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Science A</td>
<td>3</td>
<td>3</td>
<td>non-specific C S</td>
</tr>
<tr>
<td>Computer Science AB</td>
<td>3</td>
<td>6</td>
<td>non-specific C S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(6 units maximum for both tests)</td>
</tr>
<tr>
<td>ECONOMICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microeconomics</td>
<td>3</td>
<td>3</td>
<td>ECON 54</td>
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<td>Macroeconomics</td>
<td>3</td>
<td>3</td>
<td>ECON 55</td>
</tr>
<tr>
<td>ENGLISH</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Engl. Lit. and Comp.</td>
<td>3</td>
<td>3</td>
<td>ENGL 35</td>
</tr>
<tr>
<td>Engl. Lit. and Comp.</td>
<td>4</td>
<td>6</td>
<td>ENGL 35-36</td>
</tr>
<tr>
<td>Engl. Lang. and Comp.</td>
<td>3</td>
<td>3</td>
<td>ENGL 1</td>
</tr>
<tr>
<td>Engl. Lang. and Comp.</td>
<td>4</td>
<td>6</td>
<td>ENGL 1-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(9 units max for both tests)</td>
</tr>
<tr>
<td>ENVIRONMENTAL SCIENCE</td>
<td>3</td>
<td>4</td>
<td>GEOL 10 &amp; 11/GEOG 10 &amp;11</td>
</tr>
<tr>
<td>FOREIGN LANGUAGE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>French Language</td>
<td>3</td>
<td>6</td>
<td>FRCH 103-104</td>
</tr>
<tr>
<td>French Literature</td>
<td>3</td>
<td>6</td>
<td>FRCH 191</td>
</tr>
<tr>
<td>German Language</td>
<td>3</td>
<td>6</td>
<td>GER 103-104</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>3</td>
<td>6</td>
<td>SPAN 103-104</td>
</tr>
<tr>
<td>Spanish Literature</td>
<td>3</td>
<td>6</td>
<td>SPAN 191</td>
</tr>
<tr>
<td>Latin Literature</td>
<td>4</td>
<td>6</td>
<td>CLAS 109-110</td>
</tr>
<tr>
<td>GOVERNMENT AND POLITICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American</td>
<td>3</td>
<td>3</td>
<td>POLS 2</td>
</tr>
<tr>
<td>Comparative</td>
<td>3</td>
<td>3</td>
<td>POLS 1</td>
</tr>
<tr>
<td>HISTORY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American</td>
<td>3</td>
<td>6</td>
<td>HIST 52-53</td>
</tr>
<tr>
<td>European</td>
<td>3</td>
<td>6</td>
<td>HIST 1-2</td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculus AB</td>
<td>3</td>
<td>4</td>
<td>MATH 14</td>
</tr>
<tr>
<td>Calculus AB</td>
<td>4</td>
<td>4</td>
<td>MATH 15</td>
</tr>
<tr>
<td>Calculus BC</td>
<td>3</td>
<td>4</td>
<td>MATH 15</td>
</tr>
<tr>
<td>Calculus BC</td>
<td>4</td>
<td>8</td>
<td>MATH 15-16</td>
</tr>
<tr>
<td>MUSIC</td>
<td>Theory</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PHYSICS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics B</td>
<td>3</td>
<td>4</td>
<td>PHYS 1</td>
</tr>
<tr>
<td>Physics B</td>
<td>4</td>
<td>8</td>
<td>PHYS 1-2</td>
</tr>
<tr>
<td>Physics C Mechanics</td>
<td>3</td>
<td>4</td>
<td>PHYS 11</td>
</tr>
<tr>
<td>Phys. C Elec./Magnet.</td>
<td>3</td>
<td>4</td>
<td>PHYS 12</td>
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<tr>
<td>PSYCHOLOGY</td>
<td>Introductory Psych.</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>STATISTICS</td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

*Note: Students receiving AP credit for any physics course will have to register for and complete the corresponding physics labs by special arrangement with the Department of Physics.*
### College Level Examination Program (CLEP)

<table>
<thead>
<tr>
<th>General Examinations</th>
<th>WVU Equivalent</th>
<th>Minimum Score Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition (with essay)</td>
<td>ENGL 1 (3 hr.)</td>
<td>590</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>500</td>
</tr>
<tr>
<td>Mathematics</td>
<td>LSP C non-specified credit (4 hr.)</td>
<td>500</td>
</tr>
<tr>
<td>Natural Science</td>
<td>LSP C non-specified credit (6 hr.)</td>
<td>500</td>
</tr>
<tr>
<td>Social Science and History</td>
<td>LSP B</td>
<td></td>
</tr>
</tbody>
</table>

### Subject Tests:

<table>
<thead>
<tr>
<th>Subject</th>
<th>WVU Equivalent</th>
<th>Minimum Score Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Literature</td>
<td>ENGL 24 (3 hr.)</td>
<td>59</td>
</tr>
<tr>
<td>Analysis &amp; Interpret. of Literature</td>
<td>ENGL 35 (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 22 (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 1 and 2 (6 hr.)</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>FRCH 3 AND 4 (6 hr.)</td>
<td>55</td>
</tr>
<tr>
<td>College German (levels 1 and 2)</td>
<td>GER 1 and 2 (6 hr.)</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>GER 3 and 4 (6 hr.)</td>
<td>54</td>
</tr>
<tr>
<td>College Spanish (levels 1 and 2)</td>
<td>SPAN 1 and 2 (6 hr.)</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>SPAN 3 and 4 (6 hr.)</td>
<td>54</td>
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<tr>
<td>American Government</td>
<td>POLS 2 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>American History I</td>
<td>HIST 52 (3 hr.)</td>
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<tr>
<td>American History II</td>
<td>HIST 53 (3 hr.)</td>
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</tr>
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<td>Western Civilization I</td>
<td>HIST 1 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Western Civilization II</td>
<td>HIST 2 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>General Psychology</td>
<td>PSYC 1 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Human Growth and Development</td>
<td>CD&amp;FS 10 (3 hr.)</td>
<td>51</td>
</tr>
<tr>
<td>Intro. Macroeconomics</td>
<td>ECON 55 (3 hr.)</td>
<td>50</td>
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<tr>
<td>Intro. Microeconomics</td>
<td>ECON 54 (3 hr.)</td>
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<tr>
<td>Intro. Sociology</td>
<td>SOCA 1 (3 hr.)</td>
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<tr>
<td>College Algebra</td>
<td>MATH 3 (3 hr.)</td>
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</tr>
<tr>
<td>Trigonometry</td>
<td>MATH 4 (3 hr.)</td>
<td>54</td>
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<tr>
<td>College Algebra/Trig.</td>
<td>MATH 14 (4 hr.)</td>
<td>50</td>
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<tr>
<td>Calculus with Elementary Functions</td>
<td>MATH 15 (4 hr.)</td>
<td>49</td>
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<tr>
<td>General Biology</td>
<td>BIOL 1 and 2 (6 hr.)</td>
<td>49</td>
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<tr>
<td></td>
<td>(no credit for the labs)</td>
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<tr>
<td>General Chemistry</td>
<td>CHEM 16 (4 hr.)</td>
<td>70</td>
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<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 185 (3 hr.)</td>
<td>50</td>
</tr>
<tr>
<td>Intro. Accounting</td>
<td>ACCT 51 and 52 (6 hr.)</td>
<td>54</td>
</tr>
<tr>
<td>Intro. Business Law</td>
<td>BCOR 150 (3 hr.)</td>
<td>51</td>
</tr>
</tbody>
</table>
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 is computed on grades earned in courses taken at WVU and institutions in the WV system of higher education only. To be eligible to receive a baccalaureate degree, you must have a grade-point average 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 grade-point average is based on all work for which you received letter grades other than W, WU, and P. See “D/F Repeat Policy.”

You must make certain that you know your grade-point standing. You can obtain the necessary information concerning your grade-point standing from the dean of your college or school. To determine your grade-point average, 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 baccalaureate degrees and specified entry-level professional degrees. All candidates for a baccalaureate degree with a grade-point average 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 grade-point average of less than 3.6, but equal to or above 3.4, graduate cum laude.

Your grade-point average for honors consideration for baccalaureate degrees 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 grade-point average 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 degree 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 baccalaureate degrees 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 sessions 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).

The last week of each semester of the academic year is designated finals week. Final examinations for the summer sessions are given on the last day of classes. The Schedule of Courses gives the date and times for final examinations.

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 the last meeting of the class preceding finals week.

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.

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)
*F 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 session 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 English, Liberal Studies Program (LSP), or foreign language requirements may not be taken for pass-fail grading.
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.

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

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>Credit</th>
<th>Grade</th>
<th>Grade Value</th>
<th>Credit X Grade Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1</td>
<td>3</td>
<td>B</td>
<td>3</td>
<td>3 x 3 = 9</td>
</tr>
<tr>
<td>Geology 1</td>
<td>3</td>
<td>C</td>
<td>2</td>
<td>3 x 2 = 6</td>
</tr>
<tr>
<td>Spanish 1</td>
<td>3</td>
<td>D</td>
<td>1</td>
<td>3 x 1 = 3</td>
</tr>
<tr>
<td>Mathematics 3</td>
<td>3</td>
<td>A</td>
<td>4</td>
<td>3 x 4 = 12</td>
</tr>
<tr>
<td>Political Sci. 1</td>
<td>3</td>
<td>B</td>
<td>3</td>
<td>3 x 3 = 9</td>
</tr>
<tr>
<td>Orientation 1</td>
<td>1</td>
<td>P</td>
<td>0</td>
<td>1 x 0 = 0</td>
</tr>
</tbody>
</table>

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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 by the total credit hours with a grade value. Remember that P grades have no grade value, so in this case, there are 15 credit hours for the GPA calculation. 39 divided by 15 = grade-point average of 2.6.

**D/F Repeat Policy**

WVU has a D/F repeat policy for undergraduate students who have not received their initial baccalaureate degree. If you earn a D or F in a course at WVU taken no later than the semester or summer session registration when you reach a cumulative total of 60 hours attempted, you are eligible to D/F repeat that course by meeting with your academic advisor sometime during the semester in which you are repeating the course and filling out the appropriate forms. You must repeat the course at WVU. 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 grade-point average, hours passed, and hours attempted.
2. The original grade is not deleted from your permanent record.
3. The second grade is entered on your transcript and marked repeat 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 degree. If you get a grade of F in a course for disciplinary reasons or for cheating, the grade is not eligible for change under the D/F repeat provisions. Such a failure is indicated on your permanent record by an *F and is calculated in your grade-point average.

**Grade Reports**

During the seventh week of classes in the fall and spring semesters, instructors submit a report of 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 reports 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 reported within 48 hours after the end of the final examination. The instructor submits the grade reports to the Office of Admissions and Records. The final grades of all seniors provisionally approved for graduation at the close of each semester or summer session 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 or at the close of each summer session, a report of each student’s work is prepared for that period and sent to the student.

**West Virginia University Policy on the 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.

West Virginia University accords all the rights under the law to students who are declared independent. No one outside West Virginia University shall have access to nor will West Virginia University disclose any information from students’ educational records, without the written consent of students except to personnel within West Virginia University and the West Virginia Board of Trustees; to persons or organizations providing students' financial aid; to accrediting agencies carrying out their accreditation function; to persons in compliances with judicial order; to organizations.
conducting studies for, or on behalf of, education agencies of 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. All these exceptions are permitted under the Act.

The Act also permits disclosure of information from students’ 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. West Virginia University intends to consider all students as “dependent” for purposes of disclosure of information to parents unless the students specifically notify in writing the Office of Admissions and Records, West Virginia University, that they are not a “dependent” of their parents for Federal Income Tax purposes. Students need to give such written notification only once.

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 in the Student Handbook and annually in the Daily Athenaeum. The offices of the deans and directors can inform students as to the locations of all education records maintained on students by West Virginia University.

Official Transcripts

Each copy of an official transcript costs five dollars, payable in check or money order. You may request, in person, an on-the-spot transcript at a cost of eight 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 session. 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. Requests for transcripts must be made in writing to the Office of Admissions and Records. We cannot accept telephone requests because of the risk of 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 midsemester of the succeeding regular semester, whether the student is enrolled or not. If the two parties are unable to resolve the matter satisfactorily, or 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 or 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
If you are absent from class for any reason, you are responsible for all missed work. Absences may jeopardize your grade(s) in that class or possibly the ability to continue in the course. Instructors are responsible for keeping accurate enrollment and attendance records. If an instructor uses attendance records in determining the final grade in a course, then this fact must be announced to the students in writing within the first five class meetings.

Absence from Examinations
You are required to take all regular examinations in a course. If you attend a course all semester but you do not take the final examination and you do not have the instructor’s permission to miss it, the instructor may give you a grade of zero for the examination and a grade of F for the course. If, however, the instructor believes your absence was necessary, he/she has the option to report a grade of incomplete (I). If your absence from a regularly scheduled examination was due to illness, an authorized University activity, or another reason approved by your dean, you have the opportunity to make up the examination.

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 session, or Friday of the second week of a three-week summer session), 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:
1. 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, 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 semester or session on which regular classes are scheduled to meet. If you withdraw before the Friday of the tenth week of classes (or the Friday of the fourth week in a six-week summer session, or the Friday of the second week of a three-week summer session) you receive grades of W in all of your courses for that semester or session. After these deadlines, you will receive grades of W in those courses in which you made satisfactory progress and grades of WU for courses in which your progress had been unsatisfactory.

**Procedures:**
1. Students who decide to leave WVU 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 completion of forms and the delivery of the completed forms to appropriate officials. Students not fulfilling their financial obligations may have difficulty withdrawing from the University.
2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons still must send notification of their intention to withdraw to the Office of Student Life. The notice should be verified in writing and the student Mountaineer card.
3. Students who desire to withdraw from WVU must obtain a withdrawal form from the Student Affairs office (or dean’s office of an off-campus instructional unit). Withdrawal procedure is explained at that time. Identification Mountaineer card must be presented.
4. 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.

**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/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, Writing Lab, Math Lab, Student Counseling Service, and Career Services. When a student decides to return to WVU after his/her academic leave of absence, application fees are waived. If a student attends any institutions of higher education while on leave of absence, they must obtain an overall average of 2.0 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.

**Re-Enrollment After Withdrawal**
After you withdraw from WVU in two consecutive semesters (excluding summer sessions), you may not register for further work without approval of the dean of the college or school in which you want to register and 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 are notified on
semester grade reports that their academic performance is unsatisfactory. Such
students 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 grade-point deficiency exceeds the “allowable
grade-point deficiency” (see table on page 49) is subject to suspension at any time.
Normally, students are suspended at the end of a semester or summer school
session. 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 sessions, 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 West Virginia University 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
sessions) 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/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 Admis-
sions and Records and accepts the student.

A suspended student who is reinstated under the provisions above will be placed
on academic probation and will be subject to the maximum grade-point deficiency
regulations as before, 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.

Academic Information 45
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/she must apply for readmission through the Office of Admissions and Records.

**Maximum Allowable Grade-Point Deficiency***

<table>
<thead>
<tr>
<th>Total Hours Attempted**</th>
<th>Maximum Grade-Point Deficiency**</th>
<th>Total Hours Attempted**</th>
<th>Maximum Grade-Point Deficiency**</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-19</td>
<td>20</td>
<td>55-59</td>
<td>12</td>
</tr>
<tr>
<td>20-24</td>
<td>19</td>
<td>60-64</td>
<td>11</td>
</tr>
<tr>
<td>25-29</td>
<td>18</td>
<td>65-69</td>
<td>10</td>
</tr>
<tr>
<td>30-34</td>
<td>17</td>
<td>70-74</td>
<td>9</td>
</tr>
<tr>
<td>35-39</td>
<td>16</td>
<td>75-79</td>
<td>8</td>
</tr>
<tr>
<td>40-44</td>
<td>15</td>
<td>80-84</td>
<td>7</td>
</tr>
<tr>
<td>45-49</td>
<td>14</td>
<td>85 or more</td>
<td>6</td>
</tr>
<tr>
<td>50-54</td>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

**Includes all hours attempted in institutions in the West Virginia System of Higher Education, excluding grades of P and exclusive of the D/F Repeat Policy.

**Appeal of Suspension**

Imposition of academic suspension based on grade-point average, failure to meet the conditions previously specified for removal of academic probation, or failure to meet the conditions of admission, may be appealed under the following conditions:

• The student may appeal individual final course grades and, if successful, may be reinstated.

• The student may make an appeal to the appropriate dean based on erroneous calculation of the grade-point average or on erroneous calculation of the time period within which a grade-point average must be achieved. The decision of the dean, as the president’s designee, is final.

Students have the right to appeal academic suspensions based on requirements or standards other than grades or grade-point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race or color, sex, sexual orientation, veteran’s status, religion, age, disability, national origin, creed, ancestry, or political affiliation. At the dean’s discretion, suspensions may remain in effect until appeal procedures are completed.

**Step 1.** The student shall discuss the complaint with the dean involved within 30 calendar days of the action taken. If the two parties are unable to resolve the matter satisfactorily within 15 calendar days, the student may proceed to Step 2.

**Step 2.** The student must prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document shall be given to the University Committee on Student Rights and Responsibilities. Within 15 calendar days of receipt of the appeal, the University Committee on Student Rights and Responsibilities will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.
2. The student may be advised by a person of his/her choice from within the institution; likewise, the academic officer recommending suspension may have an advisor from within the institution. Such advisors may consult with but may not speak on behalf of their advisees or otherwise participate.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.
The decision of the University Committee on Student Rights and Responsibilities will be sent to the dean involved and the student within seven calendar days of the hearing. If the decision requires a reinstatement, the dean will take action in accordance with the committee’s decision. If the decision of the committee is to uphold the suspension, the student’s appeal must reach the appropriate vice president within 30 calendar days of receipt of the committee decision. The vice president will review and make a decision regarding the suspension within 15 calendar days of receiving the student’s appeal. The decision of the vice president, as the president’s designee, is final.

Uniform Academic Dismissal Regulations

Academic dismissal from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University. Academic dismissal can result from repeated failure to make academic progress and/or to meet probationary terms set forth in writing by the student’s college or school.

After five calendar years from the effective date of academic dismissal, any student who has been dismissed shall, upon written application, be considered for reinstatement to the University, with the terms of reinstatement to be established by the college or school entered. Failure to meet these terms will result in permanent academic expulsion.

Appeal of Dismissal

Note: The procedures and appeals described do not apply to dismissal as a sanction for academic dishonesty.

The time limitations stated herein are suggested in order to render a decision as expeditiously as possible. In the case of University holidays or absence of person(s) involved, reasonable delays may be expected.

A decision to dismiss a student for failure to meet academic standards (as distinguished from academic dishonesty) can be made only after the student has been counseled by the appropriate departmental committee or representative, with counseling to take place as soon as possible after discovery of the problem. After the student is given a reasonable opportunity to correct deficiencies, there shall then be a formal review of the student’s status by the appropriate departmental or program committee to determine whether the student shall be retained or dismissed. The student may provide the committee written documentation of his/her efforts to correct deficiencies.

A committee recommendation for dismissal, including any documentation provided by the student to the committee, shall be forwarded to the student’s dean and to the student. Within 15 calendar days of receipt of the committee’s recommendation, the dean shall inform the student and the student’s department/program of his/her decision. A decision to dismiss shall specify whether the dismissal is from the program or college/school. The dean may also dismiss a student from the institution if the student does not meet institutional standards.

Step 1. The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean’s receipt of the student’s appeal, the student may proceed to Step 2.

Step 2. The student will forward a copy of the appeal to the appropriate vice president within 15 calendar days of failure to resolve the matter at the dean’s level. Prior to the decision of the vice president, the student will be given an opportunity to discuss the appeal with the vice president. The decision of the vice president, as the president’s designee, shall be rendered within 15 days of receipt of the student’s appeal and is final.

Dismissal, based on failure to meet academic requirements or performance standards irrespective of grades or grade-point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution, may also be appealed. Students have the right to appeal academic dismissal based on requirements or standards other than grades or grade-point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race or color, sex, sexual orientation, veteran’s status, religion, age, disability, national origin, creed, ancestry, or political affiliation.
Step 1. The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean’s receipt of the student’s appeal, the student may proceed to Step 2.

Step 2. The student will forward a copy of the appeal to the University Committee on Student Rights and Responsibilities, which, within 15 calendar days of receipt of the student’s appeal, will arrange a hearing using the following procedures:
1. All parties involved shall receive written notice of date, time, and place of hearing.
2. The student may be advised by a person of his/her choice from the institution; likewise, the academic officer recommending academic dismissal may have an advisor from the institution. Such advisors may consult with but may not speak on behalf of their advisees or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities Chairperson.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The University Committee on Student Rights and Responsibilities will reach a decision within seven days. The committee’s recommendation for dismissal must be reviewed by the appropriate Vice President, who may confirm or remand the recommendation with specific instructions. Prior to the decision of the Vice President, the student will be given an opportunity to discuss the appeal with the Vice President. Within 15 calendar days of a recommendation for dismissal confirmed by the Vice President, the student may appeal to the President. The decision of the President is final.

Academic Integrity/Dishonesty
The academic development of students and the overall integrity of the institution are primary responsibilities of WVU. Academic dishonesty is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

Responsibilities
Students should act to prevent opportunities for academic dishonesty to occur, and in such a manner to discourage any type of academic dishonesty. Faculty members are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and public safety officers, shall promptly report each known case of academic dishonesty to the appropriate supervisor, department chairperson, or dean of the college or school concerned, and to the Office of Judicial Programs, Office of Student Life.
Academic Dishonesty Defined

West Virginia University expects that every member of its academic community shares the historic and traditional commitment to honesty, integrity, and the search for truth. Academic dishonesty is defined to include but is not limited to any of the following:

1. **Plagiarism**: Plagiarism is defined in terms of proscribed acts. Students are expected to understand that such practices constitute academic dishonesty regardless of motive. Those who deny deceitful intent, claim not to have known that the act constituted plagiarism, or maintain that what they did was inadvertent are nevertheless subject to penalties when plagiarism has been confirmed. Plagiarism includes, but is not limited to: submitting, without appropriate acknowledgement, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been copied in whole or in part from the work of others, whether such source is published or not, including (but not limited to) another individual’s academic composition, compilation, or other product, or commercially prepared paper.

2. **Cheating and dishonest practices** in connection with examinations, papers, and projects, including but not limited to:
   a. Obtaining help from another student during examinations.
   b. Knowingly giving help to another student during examinations, taking an examination or doing academic work for another student, or providing one’s own work for another student to copy and submit as his/her own.
   c. The unauthorized use of notes, books, or other sources of information during examinations.
   d. Obtaining without authorization an examination or any part thereof.

3. **Forgery, misrepresentation, or fraud**:
   a. Forging or altering, or causing to be altered, the record of any grade in a grade book or other educational record.
   b. Use of University documents or instruments of identification with intent to defraud.
   c. Presenting false data or intentionally misrepresenting one’s records for admission, registration, or withdrawal from the University or from a University course.
   d. Knowingly presenting false data or intentionally misrepresenting one’s records for personal gain.
   e. Knowingly furnishing the results of research projects or experiments for the inclusion in another’s work without proper citation.
   f. Knowingly furnishing false statements in any University academic proceeding.

Procedure for Handling Academic Dishonesty Cases

Academic dishonesty includes plagiarism; cheating and dishonest practices in connection with examinations, papers, and projects; and forgery, misrepresentation, and fraud. Some cases of forgery, misrepresentation, or fraud which occur outside the context of courses or academic requirements may be referred directly to the University Committee on Student Rights and Responsibilities by any member of the University community. In such cases, the University Committee on Student Rights and Responsibilities will arrange a hearing following the procedure outlined in Step 3 within 15 calendar days of receipt of the charges.

**Step 1. Instructor’s Level**

1. **Instructor’s Notice**: An instructor who suspects a student of dishonest practices may meet with the student to discuss the evidence and may drop the matter without making a formal accusation and without imposing a penalty. An instructor may not find guilt or impose a penalty without a written charge that describes the evidence against the student. Within 15 calendar days of discovering clear evidence of an offense, and instructor who wishes to charge a student with academic dishonesty must **personally deliver written notice** of the charges or **send the notice by certified U.S. mail** to the student’s local and permanent addresses.
2. **Student’s Response:** A student who elects to respond must do so in writing no later than 15 calendar days after the mailing or personal delivery of the instructor’s written notice. The student may respond by admitting or denying guilt, by offering counter evidence, or by describing extenuating or mitigating circumstances that might affect the instructor’s judgement of the severity of the offense.

3. **Instructor’s Decision:** Within five calendar days of the student’s response or after the opportunity for response has passed (whichever comes first), the instructor must reach a decision and send written notice of the decision to the student (and, if guilt is found, to others named below).
   a. **Charge withdrawn:** An instructor who believes that the evidence is not sufficient to establish guilt should immediately notify the student of this decision in writing, thus closing the case.
   b. **Penalty imposed:** An instructor who is convinced that the student is guilty and wishes to impose an academic penalty must summarize the evidence justifying the penalty in a written notice to the student. The notice must also inform the student of the right to petition the dean within 30 calendar days. Copies of the notice must be sent to the dean of college or school offering the course, the dean of the college or school in which the student is enrolled, and the Office of Judicial Programs.

   The maximum penalty an instructor may impose is an unforgivable F in the course. The Office of Judicial Programs will notify Admissions and Records to enter an unforgivable F, which cannot be removed from the student’s transcript unless the decision is reversed. If the student repeats the course and a new grade is entered, the unforgivable F will still remain on the transcript.

   The instructor may exclude the student from further participation in the course, but is discouraged from doing so unless the student has admitted guilt in writing. The instructor may impose lesser penalties, including (but not limited to) a reduced grade on the work or examination in question, assignment of remedial work, or a reduced grade (including a forgivable F). The instructor may also recommend to the dean of the college offering the course that additional penalties be imposed.

**Step 2. Dean’s Level:** A student may petition the dean on two grounds, which may be presented at the same time or separately within the 30 day time limit. A student may (i) ask the dean to review the conduct of the case for adherence to correct procedures; (ii) challenge the finding of guilt or the severity of the penalty; or (iii) do both.

1. **Procedural Review:** A student who believes that the instructor failed to follow correct procedures at Step I may petition the dean of the college or school in which the course is offered to conduct a review of the procedures. The student must submit the petition in writing, specifying the procedural errors, within 30 days of the instructor’s written notice.

   Within 15 calendar days of receiving the student’s petition, the dean or the dean’s designee must:
   a. Notify the instructor that a procedural review is being conducted at the student’s request and give the instructor an opportunity to reply;
   b. Decide, after reviewing the available information, whether any procedural errors were made and whether such errors affected the outcome of the case.
c. Send written notice of the decision and its rationale to the student, instructor, dean of the college in which the student is enrolled, and Office of Judicial Programs.

A dean or dean’s designee who decides that the outcome was affected may (i) direct the instructor to reopen the case and to correct the error(s) within a specified period of time or (ii) overturn the instructor’s decision and nullify the penalty, in which case the dean must see that the student’s record is amended. If the dean or dean’s designee decides that the outcome was not affected, the instructor’s decision stands.

2. Appeal: A student who wishes to challenge the instructor’s finding of guilt or the severity of the penalty may appeal to the dean of the college or school in which the course is offered. The appeal must (i) be made in writing within 30 calendar days of the instructor’s written notice; (ii) state specific grounds for any claim that the finding of guilt was unwarranted or the penalty unjust; and (iii) specify the desired remedy.

Within 15 calendar days of receiving the student’s appeal the dean or dean’s designee must:

a. Notify the instructor that the student is appealing and specify whether the finding of guilt, the severity of the penalty, or both will be reviewed.

b. Solicit from the instructor and the student evidence and arguments relevant to the issues.

c. Make this material available to both the student and the instructor.

d. Arrange a meeting of the instructor, the student, and the dean or dean’s designee.

(\text{A person from within the University may accompany the student to the meeting and may consult with the advise but not speak on behalf of the student or otherwise participate directly in the discussion unless given explicit permission by the dean or dean’s designee.})

e. Decide, based on the available evidence, whether to uphold the decision being challenged.

f. Send written notice of the decision, with summary minutes of the meeting and a rationale for the decision to the student, instructor, dean of the college or school in which the student is enrolled, and Office of Judicial Programs.

g. See that the student’s record is amended if necessary.

3. Additional Penalties: The dean or dean’s designee may impose penalties beyond those imposed by the instructor if the instructor recommends such action or if the dean’s understanding of the case in the context of other misconduct by the student suggests that additional penalties are warranted. The dean or dean’s designee may consider such action only after completing any procedural review or appeal requested by the student or after opportunities have passed for the student to initiate a review or appeal (that is, after it is clear that the instructor’s decisions will stand). Within 15 calendar days of this time, the dean or dean’s designee must:

a. Notify the student that additional penalties are being considered.

b. Give the student an opportunity to provide additional evidence or argument that might affect a decision about the appropriate penalty and to answer any questions by the dean or dean’s designee.

c. Decide, based on the available evidence, whether to impose any additional penalties.

d. Send written notice of the decision, including a summary of the evidence of the decision, including a summary of the evidence and a rationale for the decision, to the student, instructor, dean of the college or school in which the student is enrolled, and Office of Judicial Programs.

e. See that the student’s record is amended if necessary.
Step 3. University Committee Level.

A student or instructor may petition the Committee on Students Rights and Responsibilities on two grounds, which may be presented at the same time or separately within 30 calendar days of receipt of the dean’s decision. A petitioner may 1 ask the Committee for a procedural review; 2 challenge decisions made at Step 2; or 3 do both. Those petitioning the Committee must do so in writing through the Office of Judicial Programs.

1. **Procedural Review:** The student or the instructor may ask the Committee to conduct its own review of the procedures followed in Steps 1 and 2.
   a. The petition must (i) name the dean or instructor who is believed to have made the error(s); (ii) described the alleged procedural error(s); (iii) specify how the error(s) affected the outcome of the case or otherwise harmed the student or the cause of justice; and (iv) include copies of all documentation and correspondence about the case.
   b. On receipt of the petition, the Committee Chair, in consultation with the Office of Judicial Programs, will convene a panel of two faculty members and one student who will decide by majority vote whether to conduct the review. No member of this panel may serve on any other panel in connection with the same case. If the panel denies the petition, the procedural case is closed when written notice of the denial and its rationale has been sent to the student, instructor, dean of the college or school offering the course, dean of the college or school in which the student is enrolled, and Office of Judicial Programs.
   c. A panel that decides by majority vote that the outcome was affected by error(s) may (i) direct the dean or instructor to reopen the case and to correct the error(s) within a specified period of time or (ii) overturn the finding of guilt and nullify the penalty. In either course of action, the panel must provide the rationale for the decision.
   d. The dean of the college or school offering the course must see that the student’s record is amended if necessary.

2. **Appeal:** The student or instructor may challenge the decision(s) of Step 2. (If the dean upheld the instructor’s finding or penalty, then the student is appealing the instructor’s decision, not the dean’s.)
   a. The petition must (i) specify the decision being appealed; (ii) name the person whose decision is being appealed; (iii) specify grounds for any claim that the finding of guilt was unwarranted or the penalty unjust; (iv) specify the desired remedy; (v) provide additional evidence or line or argument not previously introduced that might affect the outcome of the case; (vi) include copies of all documentation and correspondence about the case.
   b. On receipt of the appeal, the committee Chair, in consultation with the Office of Judicial Programs, must convene a panel of three faculty and two student members, chaired by one of the faculty members. This panel may decide by majority vote whether to conduct a hearing. If the panel decides that no hearing is warranted, the appeal is denied and the case is closed when written notice of the denial, including the rationale, has been sent to the student, instructor, dean of the college in which the course is offered, dean of the college in which the student is enrolled, and Office of Judicial Programs.
If the panel deems a hearing is warranted, the Office of Judicial Programs must, in a timely manner, arrange a hearing to accommodate the schedules of the student, instructor, and dean, as well as any other parties involved, all of whom must be notified in writing of the date, time, and place of the hearing, as described below.

i. The administrative procedure is not adversarial; the formal rules of evidence do not apply.

ii. Witness may be called by any of those involved.

iii. The person bringing the appeal and the person whose decision is under appeal may be accompanied by an advisor from within the University who may consult with but not speak on behalf of the advisee or otherwise participate directly in the proceedings unless given explicit permission by the chair of the panel.

iv. A written record of the hearing must be prepared in the form of summary minutes with relevant attachments and must be provided to those involved upon written request. In addition, a tape recording of the hearing must be made a part of the permanent record.

v. Within 7 calendar days of the hearing the panel must decide by majority vote, based on the available evidence whether to uphold the decision(s) under appeal and must send written notice of the decision, specifying the numerical vote, to the student, instructor, dean of the college or school offering the courses, dean of the college or school in which the student is enrolled, and Office of Judicial Programs. The dean of the college offering the course must see that the student’s record is amended if necessary.

vi. If the panel overturns the decision(s) of Step 2, whether by charging the finding of guilt or by imposing, reinstating, or modifying a penalty, the panel’s notice must summarize the evidence they considered and provide a rationale for the decision.

vii. In an appeal by a student, the panel may not impose a penalty more severe than that imposed or upheld by the dean at Step 2; in an appeal by an instructor, the panel may not impose a penalty more severe than that imposed by the instructor at Step 1.

**Step 4. President’s Level.**

The student or the instructor may appeal decisions of the University Committee on Student Rights and Responsibilities to the president or president’s designee. Such appeals must (i) be made in writing within 30 calendar days of notice of the decision of the Committee on Student Rights and Responsibilities; (ii) state specific grounds for any claim that the Committee’s decision was faculty or unjust; and (iii) specify the desired remedy. On receipt of the appeal, the president or president’s designee will decide whether or not to hear the appeal. The decision of the president or of the president’s designee is final.
Part 4 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 session of the University. No student will be permitted to register at the University after the eighth day of a semester or the fourth calendar day of the summer sessions or a single summer session. 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 $30.00.

Registering 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 West Virginia University 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, a student’s diploma, or a student’s 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 1st for applicants to receive maximum consideration.

For the Summer session(s) 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 Law School.

Students can also complete a FAFSA on the Internet at http://www.fafsa.ed.gov. Instructions are available at University libraries and computer labs and in the Financial Aid Offices.

For those students who filed a FAFSA for the previous year, a renewal application may be used. Renewal FAFSA’s are mailed to students’ home addresses to arrive by mid-January. Students who do not receive a renewal FAFSA by that time should contact the Financial Aid Office for a regular FAFSA or file using the Web address above.

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, or the Mountainlair Construction Fee. However, all students must pay $33.00 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 in and/or wait-listed. Some departments may also have additional/rental fees.
Music Fees

Practice Room Fee: All music majors must pay a fee of $15.00 per semester, which entitles them to assigned practice space one hour per day. Additional space may be available at the rate of $4.00 per hour.

Instrument Rental: $10.00 per semester.

Special Fees

Application for Undergraduate Admission
(Resident) $15.00
(Nonresident) 35.00
Application for Admission (Dentistry and Medicine) 45.00
Application for Admission (College of Law or Graduate Studies) 45.00
Diploma Replacement 20.00
Examination for Advanced Standing 35.00
Examination for Entrance Credit, per unit 1.00
General Educational Development Tests (high school level) 15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a $10.00 credit shall be established for the applicant.)
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 30.00
(Not charged to students who complete registration during the regular registration days set forth in the University calendar.)
Professional Engineering Degree (includes $20.00 Graduation Fee) 45.00
Program Reactivation Fee (Graduate Students) 45.00
Reinstatement of Student Dropped from the Rolls 20.00
Student Identification Card Replacement 10.00
Student’s Record Fee 5.00
Official Transcript 5.00
Official Letter 5.00
Statement of Degree Letter, Grade-Point Average Letter 5.00
Priority Service (Transcript/Letter) 8.00

Summer Tuition and Fees

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<td>Mountainlair Construction Fee, per six week summer session or any portion thereof*</td>
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*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.)
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**Note:** Physical Therapy and Occupational Therapy students have additional Notebook Computer Lease fee of $1,500.00 and Computer Software fee of $200.00 per year.

**Estimated Expenses for Undergraduate Health Sciences Center Programs**

Call the Office of Admissions and Records for current fees.

All fees are subject to change without notice. These fees are accurate as of March 1, 1999.

Tuition and registration costs are per semester; other costs are per year.

* Residencies and nonresidencies have different costs for tuition and registration.

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</tbody>
</table>

**Tuition and Registration**

Year One
- First Year: Summer
- Second Year: Summer
- Third Year: Summer
- Senior Year: Summer

Year Two
- First Year: Summer
- Second Year: Summer
- Senior Year: Summer

Year Three
- First Year: Summer
- Second Year: Summer
- Senior Year: Summer

Year Four
- First Year: Summer
- Second Year: Summer
- Senior Year: Summer

Graduate

**Other Costs**

- Books
- Instruments
- Tuition and Registration (Resident and Nonresident)

<table>
<thead>
<tr>
<th>Year</th>
<th>Tuition and Registration (Resident)</th>
<th>Tuition and Registration (Nonresident)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Physical Therapy and Occupational Therapy students have additional Notebook Computer Lease fee of $1,500.00 and Computer Software fee of $200.00 per year.

**Estimated Expenses for Undergraduate Health Sciences Center Programs**

Call the Office of Admissions and Records for current fees.

All fees are subject to change without notice. These fees are accurate as of March 1, 1999.

* Residencies and nonresidencies have different costs for tuition and registration.
### Fees in Colleges and Schools

<table>
<thead>
<tr>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>$233.00</td>
<td>$77.00</td>
</tr>
<tr>
<td>$3833.00</td>
<td>$1241.00</td>
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<tr>
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<td>$77.00</td>
</tr>
<tr>
<td>$1241.00</td>
<td>$77.00</td>
</tr>
<tr>
<td>$0</td>
<td>$77.00</td>
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<tr>
<td>$50.00</td>
<td>$77.00</td>
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<tr>
<td>$416.00</td>
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<tr>
<td>$345.00</td>
<td>$77.00</td>
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<tr>
<td>$230.00</td>
<td>$77.00</td>
</tr>
</tbody>
</table>

**Part-Time†† per credit hr.**

<table>
<thead>
<tr>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1241.00</td>
<td>$293.00</td>
</tr>
<tr>
<td>$3833.00</td>
<td>$293.00</td>
</tr>
<tr>
<td>$0</td>
<td>$293.00</td>
</tr>
<tr>
<td>$77.00</td>
<td>$293.00</td>
</tr>
<tr>
<td>$0</td>
<td>$293.00</td>
</tr>
</tbody>
</table>

**Special Fees**

- Athletics Fee: $47.00
- Student Affairs Fee: $32.00
- Daily Athenaeum Fee: $7.00
- Health Counseling and Program Services Fee: $55.00
- Mountaineer Fee: $5.00
- Radiology Fee: $25.00
- Transportation Fee: $5.00

**Operations Fee**

- Information Technology Fee: $35.00
- Mountainlair Fee: $58.00

**Faculty Improvement Fee**

- Charged to all students and prorated for part-time students.

### Fees in Colleges and Schools

<table>
<thead>
<tr>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>$335.00</td>
<td>$850.00</td>
</tr>
<tr>
<td>$1360.00</td>
<td>$3833.00</td>
</tr>
<tr>
<td>$0</td>
<td>$293.00</td>
</tr>
<tr>
<td>$345.00</td>
<td>$293.00</td>
</tr>
<tr>
<td>$1238.00</td>
<td>$293.00</td>
</tr>
<tr>
<td>$105.00</td>
<td>$293.00</td>
</tr>
<tr>
<td>$3833.00</td>
<td>$293.00</td>
</tr>
</tbody>
</table>

### Tuition Registration

- Higher Education Resources Fee: $105.00
- Registration Fee: $105.00

---

Please refer to the WVU Graduate or Health Sciences Catalog for fee information for the graduate and professional levels.

- Faculty Improvement Fee is charged to all students and is prorated for part-time students.
- Special Fees are prorated for part-time students.

---

Please refer to the WVU Graduate or Health Sciences Catalog for fee information for the graduate and professional levels.

- Faculty Improvement Fee is charged to all students and is prorated for part-time students.
- Special Fees are prorated for part-time students.

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A full-time undergraduate student is one who is registered for 12 or more semester hours each semester of the regular academic year or for fewer than 12 semester hours during a six-week summer session.

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If a part-time undergraduate student is one who is registered for fewer than 12 semester hours per semester during the regular academic year or for fewer than six semester hours during a six-week summer session.

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You are advised to check with the Office of Admissions and Records for the current fee schedule.

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These fees are accurate as of March 1, 1999.

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All fees are subject to change without notice.

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Semester Fees in Colleges and Schools
Non-Sufficient Funds Check Policy/Service Charge

Payments of tuition, fees, and other charges by check, draft or order are subject to WVU’s Non-Sufficient Funds Check Policy. A copy of the policy is available in the Bursar’s Office. A service charge of $15.00 is collected on each check returned unpaid by the bank upon which it was drawn. Service charge on unpaid, returned checks is subject to change in accordance with state law.

Refund of Fees

A student who officially withdraws from University or goes from full-time to part-time status within the refund period is eligible for a refund of tuition and fees. Every effort is made to process refunds within 30 days.

To withdraw from the University officially and receive a refund, a student must apply at the Office of Student Life in E. Moore Hall. Tuition, special fees, the optional health service fee, and certain miscellaneous fees are refundable based upon the date of withdrawal and student status.* Lab fees are refundable during the first week of classes only, based upon 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/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.

Refund Schedules

Fall/Spring Semesters

<table>
<thead>
<tr>
<th>Refund Period</th>
<th>BOT</th>
<th>HEA</th>
<th>Refund Period</th>
<th>BOT</th>
<th>HEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Week</td>
<td>90%</td>
<td>90%</td>
<td>5th Week</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>2nd Week</td>
<td>90%</td>
<td>80%</td>
<td>6th Week</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>3rd Week</td>
<td>70%</td>
<td>80%</td>
<td>7th/8th Week</td>
<td>—</td>
<td>50%</td>
</tr>
<tr>
<td>4th Week</td>
<td>70%</td>
<td>70%</td>
<td>9th Week</td>
<td>—</td>
<td>40%</td>
</tr>
<tr>
<td>Subsequent Weeks</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refunds for summer sessions are published in the respective Schedules of Courses.

*Note: Students who are enrolled for their first semester at WVU or who received a full refund for the previous semester and who received Title IV aid receive refunds according to federal regulations, which require refunds to be figured using both state (BOT Series #22) and statutory pro rata (Higher Education Amendments of 1992) calculations. After figuring both refunds, the calculation that provides the larger refund is given.

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 $10,173 for single West Virginia residents living on campus, $10,422 for single West Virginia residents living off campus, and $7,107
for those living at home. The total cost for single non-residents living on campus is $15,357; for single non-residents living off campus, $15,606; and for non-residents living at home, $12,291. 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 full-time student when fees are paid in full. Certain part-time students can be eligible for an identification card when the appropriate fees are paid. 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.

Residency Policy

Classification Of Students for Admission and Fee Purposes

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 twelve months of continued presence within the state prior to the date of registration, provided that such twelve months’ presence is not primarily for the purpose of attendance at any institution of higher education in West Virginia.
3.2 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.

3.3 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/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/she lives or to whom he/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 nonresident 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/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 2 above. 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 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/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/she has been improperly classified as a nonresident for tuition purposes, they 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, or call (304) 293-2121.

Once this 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 Board of Trustees’ Policy Bulletin #34, 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 Admissions. The council consists of faculty and student representatives, and 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 Agriculture, Forestry and Consumer Sciences
Rosemary R. Haggett, Ph.D., Dean, Director of the Agricultural and Forestry Experiment Station.
Kerry S. Odell, Ph.D., Associate Dean, Academic Affairs and Development.
Jack E. Coster, Ph.D., Interim Associate Director, Agricultural and Forestry Experiment Station.
John Warren, Ph.D., Director, Division of Animal and Veterinary Sciences.
Janice I. Yeager, M.S., Director, 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.
Peter V. Schaeffer, Ph.D., Director, Division of Resource Management.

Degrees and Curricula
The College of Agriculture, Forestry and Consumer Sciences offers six baccalaureate degrees and nineteen curricula in which students may major. The degrees and majors are:

Bachelor of Science (B.S.)
- Agribusiness Management and Rural Development
- Animal and Veterinary Sciences
- Biochemistry
- Environmental and Natural Resources Economics
- Environmental Protection
- Wildlife and Fisheries Resources

Bachelor of Science in Agriculture (B.S.Agri.)
- Agricultural and Environmental Education
- Agronomy
- Animal and Veterinary Sciences
- Basic Sciences
- Environmental Protection
- Horticulture

Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)
- Child Development and Family Studies
- Human Nutrition and Foods
- Interior Design
- Textiles, Apparel and Merchandising

Bachelor of Science in Forestry (B.S.F.)
- Forest Resources Management
- Wood Industries

Bachelor of Science in Landscape Architecture (B.S.L.A.)
- Landscape Architecture

Bachelor of Science in Recreation (B.S.R.)
- Recreation, Parks and Tourism Resources

Information about graduate degrees and programs is available in the West Virginia University Graduate Catalog.

Nature of Program
The College of Agriculture, Forestry and Consumer Sciences is organized into five divisions of study: animal and veterinary sciences, family and consumer sciences, forestry, plant and soil sciences, and resource management. Faculty and
staff are located primarily on the Evansdale campus, on farms managed by the college, and at nearby Cooper’s Rock State Forest.

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 business, including fashion merchandising and resource management; the social sciences, including recreation, child development and family studies; or on the creative arts, including the innovative and functional design of landscapes and interiors. In short, the college and its curricula stress applied ecology, manufactured structures, and relationships among humans as they live and work in various environments. The study of ecology is interwoven throughout the courses to give the student a comprehensive understanding of the basic elements at work in our environment. The emphasis on ecology is designed to offer students the education necessary for careers having a focus on the protection of the quality of the environment. In addition, it is 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 University Agricultural and Forestry Experiment Station. Thus, extensive research programs are supported in such areas as child development, family studies, agronomy, soil quality, wildlife protection, forest utilization and management, horticulture, and the growth and production of dairy herds, livestock, and poultry. 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 of the College of Agriculture, Forestry and Consumer Sciences 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 Industries by the Society of Wood Science and Technology, Recreation and Parks Management by the National Recreation and Parks Association, Agricultural and Environmental 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 Dietetics Association. In addition, the West Virginia University Child Development Laboratory is accredited by the National Academy of Early Childhood Programs.

Honorary and Student Organizations

Students in the College of Agriculture, Forestry and Consumer Sciences 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 twenty student clubs and organizations sponsored by the college.
Admission

Graduates of accredited high schools are required to present credit for four units of English; one unit of biology; three units of social studies; two units of college preparatory mathematics, of which one unit must be algebra; and eight units chosen from the areas of fine arts, science, mathematics, computer science, foreign languages, and communication. The College of Agriculture, Forestry and Consumer Sciences also requires one unit of geometry.

All students are admitted directly to the college and are assigned a faculty advisor. Students seeking admission to the landscape architecture program should check admission requirements with the associate dean of the College or the University Office of Admissions and Records.

Transfer Credits

Students transferring into the College of Agriculture, Forestry and Consumer Sciences from one- or two-year technical programs, or from unaccredited programs, must take examinations to demonstrate proficiency for any required course offered by the College of Agriculture, Forestry and Consumer Sciences for which transfer credit is sought. In addition, the Division of Forestry applies this rule to land surveying. All other 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 may be counted toward fulfilling the requirements for a bachelor’s degree in the College of Agriculture, Forestry and Consumer Sciences.

Honors

Outstanding academic achievement is recognized by awarding President’s List and Dean’s List status to those students obtaining a 4.0 grade-point average or 3.5 grade-point average, 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 grade-point average), magna cum laude (with high honors; a minimum 3.6 grade-point average to less than a 3.8 grade-point average), or cum laude (with honors; a minimum 3.4 grade-point average to less than a 3.6 grade-point average) recognition upon graduation. The grade-point averages are set by the University.

Applications for Graduation

All candidates for the bachelor’s degree in the College of Agriculture, Forestry and Consumer Sciences 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.

Students whose grade-point average is below that allowed by WVU at the end of a period of enrollment shall be suspended by the College of Agriculture, Forestry
and Consumer Sciences and notified in writing by the associate dean. Students may be reinstated by petitioning the Academic Standards Committee to:

1. Enroll for the summer session to eliminate the grade-point deficiency.
2. After a minimum of one suspension semester, petition the Academic Standards Committee for reinstatement.
3. After one calendar year, a student may enroll in the college, school, or program of his/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 grade-point average for each semester enrolled. The Academic Standards Committee has the option of imposing special conditions for students on academic probation.

Division of Animal and Veterinary Sciences
John Warren, 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 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 College of Agriculture and Forestry 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.

Bachelor of Science in Agriculture
Animal and Veterinary Sciences Curriculum
This curriculum will provide you with the opportunity to acquire the necessary background in agricultural economics, agronomy, breeding, nutrition, pathology, and physiology to prepare for a career in animal, dairy, or poultry production and management. Food sciences courses are available under the curriculum if you are interested in preparing for opportunities in food processing related to dairy, poultry, and meat products.

Curriculum Requirements

<table>
<thead>
<tr>
<th>Course</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>Arts and humanities (Cluster A)</td>
<td>12</td>
</tr>
<tr>
<td>Social and behavioral sciences (Cluster B)</td>
<td>12</td>
</tr>
<tr>
<td>Natural sciences (Cluster C included)</td>
<td>24</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></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*, in each of the following:
1. Animal science
2. Plant science
3. Soil science
4. Agricultural economics

Elect additional courses to obtain a total of 45 hours in the College of Agriculture and Forestry.

Free electives  37

Total  136

**Bachelor of Science**

**Animal and Veterinary Science Curriculum**

The curriculum in science, with its flexible design, provides you with the opportunity to acquire the necessary background in agricultural biochemistry, chemistry, mathematics, physics, and modern concepts of biology in preparation for professional schools of veterinary medicine, human medicine, dentistry, optometry, pharmacy, or graduate study in such fields as agricultural biochemistry, animal breeding, animal physiology, and nutrition. Selection of individual courses will be your responsibility in consultation with an advisor.

**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
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<tbody>
<tr>
<td>English composition and rhetoric</td>
<td>6</td>
</tr>
<tr>
<td>(or conformity with University English requirements)</td>
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</tr>
<tr>
<td>Liberal Studies Program</td>
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</tr>
<tr>
<td>Arts and humanities (Cluster A)</td>
<td>12</td>
</tr>
<tr>
<td>Social and behavioral sciences (Cluster B)</td>
<td>12</td>
</tr>
<tr>
<td>Natural sciences (Cluster C included)</td>
<td>40</td>
</tr>
<tr>
<td>(A minimum of two courses in each of biology, chemistry, physics, and calculus is required. You may substitute advanced chemistry courses for calculus to meet degree requirements. This ordinarily means organic chemistry and/or biochemistry).</td>
<td></td>
</tr>
<tr>
<td>Courses in Agriculture</td>
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</tr>
<tr>
<td>Free Electives</td>
<td>34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>128</td>
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</table>

**Biochemistry Curriculum**

The curriculum in biochemistry prepares you for careers requiring a strong background in basic principles of the physical and life sciences. Students completing a biochemistry major are prepared for professional employment in the expanding fields of agricultural and environmental sciences, the chemical industry, health-related industries, and biotechnology-based industries. The curriculum provides you with the interdisciplinary background in biochemistry, biology, chemistry, mathematics, physics, and molecular biology necessary as preparation for professional schools of human and veterinary medicine, dentistry, optometry, and pharmacy. It also provides strong preparation for graduate study in fields such as animal and plant agriculture, biochemistry, biology, biotechnology, chemistry, food science, nutrition, and physiology.
**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English composition and rhetoric</td>
<td>6</td>
</tr>
<tr>
<td>(ENGL 1 and 2 or conformity with University requirements)</td>
<td></td>
</tr>
<tr>
<td>Liberal Studies Program</td>
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<tr>
<td>Arts and Humanities (Cluster A)</td>
<td>12</td>
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<td>Social and Behavioral Sciences (Cluster B)</td>
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</tr>
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<td>Biochemistry Core Curriculum</td>
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</tr>
<tr>
<td>(includes University Cluster C and Math requirements)</td>
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<tr>
<td>Orientation to Biochemistry</td>
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<tr>
<td>Math 15 and 16</td>
<td>8</td>
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<tr>
<td>Physics 1 and 2 or Physics 11 and 12</td>
<td>8</td>
</tr>
<tr>
<td>Biology 15, 17, 19 and 211</td>
<td>15</td>
</tr>
<tr>
<td>Chemistry 15, 16, 133, 134, 135 and 136</td>
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<tr>
<td>Concentration Area</td>
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<tr>
<td>30 hours of coursework beyond the Biochemistry Core</td>
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<tr>
<td>selected from courses in Agriculture, Forestry and Consumer Sciences or Biochemistry (Med. School)</td>
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<td>Biology 214 or 216</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>128</strong></td>
</tr>
</tbody>
</table>

**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 department faculty. Graduation with Biochemistry Program Honors includes a senior theses 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 advisor.

**Pre-Veterinary Medicine Program**

This program is designed to provide you with the academic requirements for entry into professional schools or colleges of veterinary medicine. WVU has agreements with the Ohio State University and with the Southern Regional Education Board. In order 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 thirteen 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 course work at WVU, or 90 hours 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 veterinary college to WVU and receive the bachelor’s degree.

The equivalent of the following pre-professional courses currently meet requirements for contract colleges of veterinary medicine.
Curriculum Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
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<tbody>
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<td>Animal and poultry science</td>
<td>6</td>
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<tr>
<td>Animal nutrition</td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>Biology</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry (inorganic)</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry (organic)</td>
<td>8</td>
</tr>
<tr>
<td>English</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>Microbiology</td>
<td>4</td>
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<tr>
<td>Physics</td>
<td>8</td>
</tr>
<tr>
<td>Principles of heredity</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>67</td>
</tr>
</tbody>
</table>

*Students are urged to consult their advisors for current requirements of individual veterinary colleges.

Division of Family and Consumer Sciences
Janice I. Yeager, M.S., Director.

Programs of Study
A program similar to the Division of Family and Consumer Sciences has been a part of West Virginia University since its founding. Initially, the unit was called domestic arts, then home economics, and more recently, family resources. Today, the division provides high quality academic programs that respond to changing needs of individuals and families as well as to developments in knowledge and technology, and changing resources.

The mission of the Division of Family and Consumer Sciences is to provide high quality undergraduate and graduate education, conduct basic and applied research, and engage in creative and scholarly activity. The division contributes to the well-being of residents of West Virginia through on-campus programs, public outreach and service. Programs are local, regional, national, and international in scope and promote efficient and wise use of natural and human resources. Leadership is provided in the broad field of family and consumer sciences which includes the following disciplines: child development and family studies, human nutrition and foods, interior design, and textiles, apparel and fashion merchandising. The WVU Child Development Laboratory is managed by faculty in this unit.

Accreditation
The interior design program has been accredited by the Foundation for Interior Design Education and Research. The didactic undergraduate dietetic program has been approved by the American Dietetic Association. The WVU Child Development Laboratory has been accredited by the National Academy of Early Childhood Programs.

Honorary Society
Phi Upsilon Omicron, a national honorary 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
- Student Dietetic Association
- West Virginia Association for Young Children
- West Virginia University Family and Consumer Sciences Club

Bachelor of Science in Family and Consumer Sciences

Child Development and Family Studies

The child development and family studies (CDFS) area provides students with a choice of three option areas, each of which is based on the certification recommendations made by the professional organizations in each field: (1) 0 to 5 early childhood education, (2) family life education, and (3) hospital child life.

The 0-5 early childhood education option focuses on the social, emotional, intellectual, and physical development of children. Students are trained to plan programs, perform developmental assessments, and interact with young children in developmentally appropriate settings including internships at West Virginia University Child Development Laboratory (Nursery School). This internship provides students with valuable learning experiences as they plan and implement pre-school programming. In addition, students work with infants and toddlers in child care placements.

The family life education option provides the basic education for students interested in working with families, including older children, parents, or adults working on relationship issues. The student takes courses that support the development of knowledge and skills in the nine family life substance areas selected by the National Council of Family Relations as essential for an individual seeking certification as a Family Life Educator. The certification is a voluntary credential that requires the individual to document her/his academic preparation and to have at least two years of work experience in family life education settings. All students are required to complete internships at community family-focused agencies, such as the Federal Correctional Institution in Morgantown.

The hospital child life option provides the basic education for students interested in becoming child life specialists who work in health care settings. Using play and other forms of communication, the child life specialist focuses on meeting the emotional and developmental needs of children and families. A practicum program at the hospital is included in the program in addition to internship hours performed at the hospital under the direction of a certified child life specialist. Following completion of the undergraduate program, including 480 hours of supervised experience at the hospital, the student may apply for certification as a child life specialist.

Grade Information

Students must earn a C or better in all CDFS courses. If the student receives a D or F in a CDFS course, the course must be taken until a C or better is obtained. The credits associated with a D grade earned in a CDFS course will not count toward the 129 credit hours required for graduation. Students transferring into child development and family studies from other program areas in the University or from
other universities must have a 2.5 grade-point average for admission to this pro-
gram. The following courses are to be taken during the senior year only: CDFS 212,  
CDFS 213, and CDFS 215. In addition, F&CS 191 a and b are to be taken during the  
junior or senior years.

**Career Opportunities**

Graduates of the program work with children in a variety of settings including  
day care, Head Start, nursery schools, hospitals, and human service agencies. They  
also work with parents and families in educational settings. Salary is dependent on  
the qualifications of the graduate, the structure (private, franchised, government  
supported) of the hiring agency and the geographic location. The child development  
and family studies graduate is provided with a foundation for graduate work in a  
variety of social science disciplines.

**Suggested Curricula—0-5 Early Childhood**

<table>
<thead>
<tr>
<th>First year</th>
<th>Hrs.</th>
<th>Second year</th>
<th>Hrs.</th>
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<tr>
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<td>ENGL 2</td>
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<td>4</td>
<td>CHPR 72</td>
<td>3</td>
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<td>PSYC 1</td>
<td>3</td>
</tr>
<tr>
<td>CDFS 10, 12</td>
<td>6</td>
<td>CDFS 110, 112</td>
<td>6</td>
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<tr>
<td>COMM 11, 12</td>
<td>3</td>
<td>EDUC 100</td>
<td>3</td>
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<td>MATH 3 or 23</td>
<td>3</td>
<td>HN&amp;F 71</td>
<td>3</td>
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<td>SOCA 5</td>
<td>3</td>
<td>CS 5</td>
<td>4</td>
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<tr>
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<td>SOCA 1</td>
<td>3</td>
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<td>Cluster A</td>
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<table>
<thead>
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<th>Hrs.</th>
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<table>
<thead>
<tr>
<th>Suggested Curricula—Family Life Education</th>
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<th>Hrs.</th>
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<tbody>
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<td>First year</td>
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</tr>
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<td>BIOL 1, 3</td>
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<td>PSYC 1</td>
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70 West Virginia University Undergraduate Catalog
### Bachelor of Science in Family and Consumer Sciences

**Human Nutrition and Foods**

This four-year curriculum meets the academic requirements for membership in the American Dietetic Association and leads to a Bachelor of Science degree. After completion of the curriculum in dietetics, seniors are eligible to apply for a highly competitive dietetic internship. Acceptance into an internship is not guaranteed. The dietetic internship involves an additional one to two years, depending on the site and whether graduate study is included. Upon completion of the internship, the graduate is eligible to take the examination to become a registered dietitian (RD).

Students are required to complete family and consumer sciences 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 which support anticipated career preferences, e.g. business, food science, nutritional biochemistry, advertising, writing, and exercise physiology.

### Suggested Curricula—Hospital Child Life

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<th>Hrs.</th>
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<tbody>
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<tr>
<td>BIOL 1, 3</td>
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<td>PSYC 1</td>
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<td>CDFS 10, 12, 112</td>
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<td>MATH 23 or 3</td>
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</tr>
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<td>SOC 5</td>
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<td>Cluster A</td>
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<table>
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<td>CDFS 110</td>
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<tr>
<td>CDFS 111</td>
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<td>CDFS 216</td>
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<td>HN&amp;F 71</td>
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</tr>
<tr>
<td>COMM 11, 12</td>
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<tr>
<td>HMFE 165</td>
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<table>
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<tbody>
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<td>C&amp;I 214</td>
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<tr>
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<table>
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<tbody>
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<td>SPED 250, 260</td>
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<tr>
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<td>CDFS 213, 212, 215</td>
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<td>SOCA 123</td>
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<td>Electives</td>
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<tr>
<td>Total</td>
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</table>

### Bachelor of Science in Family and Consumer Sciences

**Human Nutrition and Foods**

This four-year curriculum meets the academic requirements for membership in the American Dietetic Association and leads to a Bachelor of Science degree. After completion of the curriculum in dietetics, seniors are eligible to apply for a highly competitive dietetic internship. Acceptance into an internship is not guaranteed. The dietetic internship involves an additional one to two years, depending on the site and whether graduate study is included. Upon completion of the internship, the graduate is eligible to take the examination to become a registered dietitian (RD).

Students are required to complete family and consumer sciences 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 which support anticipated career preferences, e.g. business, food science, nutritional biochemistry, advertising, writing, and exercise physiology.
Career Opportunities

The goal of the majority of graduates is to begin their professional careers as registered dietitians—focusing on providing dietary and health care education for individuals in the hospital, community, corporate, and/or educational setting. Some elect to become administrative dietitians who are responsible for provision of meals on a large scale. There are opportunities in research, the federal government, public school systems, residential facilities, and industry. Nationwide, job opportunities are very good.

Suggested Curricula—Human Nutrition and Foods

<table>
<thead>
<tr>
<th>First year</th>
<th>Hrs.</th>
<th>Second Year</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>ENGL 1</td>
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<td>ENGL 2</td>
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<td>BIOL 1 &amp; 3</td>
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<td>BIOL 2 and 4</td>
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<td>MATH 3</td>
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<td>HN&amp;F 172, 148, 150</td>
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<td>HMFE 165</td>
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</tr>
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<td>CDFS 10</td>
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<td>CHEM 131</td>
<td>4</td>
</tr>
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<td>CHEM 15, 16</td>
<td>8</td>
<td>ANPH 100 or PSIO 141</td>
<td>3-4</td>
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<tr>
<td>HN&amp;F 71</td>
<td>3</td>
<td>STAT 101</td>
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<table>
<thead>
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<th>Hrs.</th>
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<th>Hrs.</th>
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<td>ECON 54</td>
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<td>Cluster A</td>
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<tr>
<td>PSYC 151</td>
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<tr>
<td>ENVM 141</td>
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<td></td>
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</tr>
<tr>
<td>Total</td>
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<td></td>
</tr>
</tbody>
</table>

Bachelor of Science in Family and Consumer Sciences

Interior Design

Students in this Foundation for Interior Design Education Research (FIDER) accredited program 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 recommendations for aesthetically pleasing interiors that also protect the health, safety and welfare of the public.

Offering a number of special opportunities to students, the interior design program is known for the amount of hands-on experience it makes available to its majors. The student professional organization, the American Society of Interior Designers, is active on campus and sponsors various tours and trips to enhance the learning experience. Through Interior Design 239, seniors in the program may intern in a professional environment. While earning credit, students are able to learn and work under practicing designers. Student design competitions are another source of professional experience for interior design majors.
Mid-way through the interior design program, students submit their design work to a panel of faculty and professional designers for evaluation. A critique of the student's work is returned to the student noting his/her strengths and areas needing improvement. In concert with his/her advisor, the student prepares a plan for maximizing strengths and improving area(s) of weakness.

Career Opportunities

Employment in design occupations is expected to grow through the year 2005. 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 chief designer, design department head, or other supervisory positions. Some experienced designers open their own firms.

Suggested Curricula—Interior Design

<table>
<thead>
<tr>
<th>First year</th>
<th>Hrs.</th>
<th>Second year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>ART 105 and 106</td>
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<td>ENGL 2</td>
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<td>MATH 23 or 3</td>
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<tr>
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<td>ID 235, 236, and 237</td>
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<td>F&amp;CS 281 or HMFE 165</td>
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<tr>
<td>TA&amp;M 127</td>
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<td>Electives</td>
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<td>HMFE 260</td>
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<td>JRL 120</td>
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<td>33-35</td>
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</table>

Minimum Program Requirements Description and Guide

The following minimum program 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.

1. All interior design students are required to earn at least a “C” in ID 31, F&CS 191, ID 32, 33, 34, 36, 132, 134, 135, and TA&M 27. Any student
who has earned a grade of D or F in any of these courses will not be permitted to enroll in Interior Design 138 Residential Design Studio until the deficiency has been corrected by successfully repeating the course or courses.

2. Studio work must meet a minimum professional level of competence. A portfolio of studio work from F&CS 191, ID 32, 33, and 34 will be submitted for assessment by a jury composed of the interior design faculty and at least one outside professional interior designer. The jury will carefully note individual strengths and weaknesses. Extensive or major weaknesses may be judged as deficiencies detrimental to future success. Individuals who have such deficiencies in their portfolios will not be permitted to enroll in upper division studio classes until these deficiencies have been corrected either through repeating an appropriate course or through reworking and improving the portfolio.

A. Portfolio Submission

A review of the work and progress of each interior design major will take place during the semester in which the student completes the studio course sequence of F&CS 191, ID 32, 33, and 34. At that point, the student will normally have completed six lecture courses, ID 31, 36, 132, 134, 135, and TA&M 27. The portfolio is to be submitted to the Interior Design Program Coordinator. Portfolio review will be held both fall and spring semesters to accommodate students who meet the requirements for the review process. Late submissions will not be accepted or reviewed until the subsequent semester.

B. Portfolio Requirements

1. Flat work: Submit all exercises and project work from F&CS 191, ID 32, 33, and 34. Also include the design process work from F&CS 191 and ID 33 (research documentation, ideation, and analyses.) Use a standard 20" by 30" cardboard portfolio to submit all flat work. Affix a label consisting of designer’s name and local address in a prominent place on the portfolio. Organize flat work by class with F&CS 191 in front, followed by ID 32, 33, and 34. Use labeled poster board dividers to separate work by course number. Within each of these sections, organize the work in chronological order (ie. the earliest work will be on top).

2. Models: Submit all models and all three-dimensional work from F&CS 191 and ID 33. Each is to have a nameplate in a prominent location. (For students currently taking ID 33, the third model will be evaluated when it is completed.)

C. Portfolio Evaluation Criteria

(Each of these will be assessed separately.)

1. Quality and clarity of the total design process. (ie. ideation, research, analysis, selection, implementation) (F&CS 191 & ID 33)
2. Quality of graphic skills including sketching, drawing, drafting, and lettering. (F&CS 191 and ID 32, 33, 34)
3. Quality of work involving 2D and 3D spatial skills. (ie. plans; elevators, sections, paralines, perspectives, and models) (F&CS 191 and ID 32, 33, 34)
4. Quality of color rendering technique. (ID 34)
D. Student Notification
During the week following finals week, each student undergoing the Interior Design Portfolio Review will be notified in writing of the jury’s decision to either:
1. Accept the portfolio as meeting minimum requirements and permit the student to enroll in ID 138, or
2. Refuse a portion or portions of the portfolio work. As noted previously, those students whose portfolios have a deficiency (or deficiencies) will be required to improve their work before enrolling in an upper division studio class (ID 138).

E. Ownership and Maintenance of Portfolio
The portfolio will remain the property of the student. Every effort will be taken to store the portfolio securely and to handle it in a careful manner. The program reserves the right to retain portions of the portfolio to exhibit for accreditation purposes. All work will be returned to the student before graduation.

Bachelor of Science in Family and Consumer Sciences
Textiles, Apparel and Merchandising
All students in the program obtain a diverse background in textiles, apparel and merchandising. Students may pursue a merchandising option, an apparel design/product development option, or an analytical or marketing emphasis. Electives include a fashion merchandising internship in which students can apply textile, apparel and merchandising subject matter to an actual work situation in marketing or retailing. A fashion merchandising study tour enables students to observe the textile, apparel, and retail industries and to view historic costume collections. Minors are available in areas such as business and foreign languages. There also is the opportunity to enter student 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 provides students with opportunities to develop their leadership qualities. The TA&M curriculum consists of a minimum of 129 credit hours. Students must earn a C or better in the following courses: TA&M 27 Introductory Textiles; TA&M 121: Sociological-Psychological Aspects of Dress; and TA&M 124 Apparel Construction and Fitting. In addition, students must achieve a 2.5 grade point average during the two semesters prior to their senior year to be eligible for TA&M 193 Fashion Merchandising Internship. Students are encouraged to seek summer employment in the textile, apparel, or retail fields in order to gain experience and integrate course work into real world settings.

Career Opportunities
Positions in retailing include buying, merchandising, managing, coordinating, and promoting fashion goods. Placement may be found with specialty stores, mass merchandisers, discount operations, small and large department store organizations, and with resident and corporate buying offices. In the textile and apparel industries, design, product development, wholesale marketing, management, merchandising and promotion positions are available. All graduates are prepared for entry-level positions or advanced study.
### Suggested Curricula—Merchandising Option

#### First year

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
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<tr>
<td>TA&amp;M 22</td>
<td>3</td>
<td>TA&amp;M 27</td>
<td>3</td>
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<tr>
<td>CDFS 10</td>
<td>3</td>
<td>SOCA 5</td>
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<td>ENGL 1</td>
<td>3</td>
<td>Cluster A</td>
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<tr>
<td>MATH 28 or</td>
<td></td>
<td>Cluster A</td>
<td>3</td>
</tr>
<tr>
<td>MATH 14 or</td>
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<td>Cluster C</td>
<td>3 or 4</td>
</tr>
<tr>
<td>MATH 3</td>
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<td>Cluster A or C</td>
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<td>15-16</td>
<td><strong>Total</strong></td>
<td>15-16</td>
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#### Second year

<table>
<thead>
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<th>Hrs.</th>
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<td>TA&amp;M 124</td>
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<td>TA&amp;M 126</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2</td>
<td>3</td>
<td>C S 5</td>
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<tr>
<td>PSYC 1</td>
<td>3</td>
<td>BUSA 120 or BUSA 130</td>
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<tr>
<td>ECON 54</td>
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<td>Emphasis</td>
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#### Third year

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<tr>
<td>ADV 113</td>
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<td>ENGL 112 or ENGL 105</td>
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#### Fourth year

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<td>TA&amp;M Elective(s)</td>
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<td>TA&amp;M 228 (WR)</td>
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<td>TA&amp;M Elective</td>
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<td>FCS 281</td>
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<td>HMFE 260</td>
<td>3</td>
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<td>ARE 261</td>
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<td><strong>Total</strong></td>
<td>15</td>
<td><strong>Total</strong></td>
<td>15-16</td>
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### Suggested Curricula—Apparel Design/Product Development Option

#### First year

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<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
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<th>Hrs.</th>
</tr>
</thead>
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</tr>
<tr>
<td>CDFS 10</td>
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<td>SOCA 5</td>
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</tr>
<tr>
<td>ENGL 1</td>
<td>3</td>
<td>PSYC 1</td>
<td>3</td>
</tr>
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<td>MATH 28, 14, or</td>
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<td>15-16</td>
<td><strong>Total</strong></td>
<td>15-16</td>
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</table>
Second year

First semester Hrs. | Second semester Hrs.
--- | ---
TA&M 121 ..................................... 3 | TA&M 122 ..................................... 3
TA&M 124 ..................................... 3 | TA&M 126 ..................................... 3
ENGL 2 ......................................... 3 | TA&M 224 ..................................... 3
ECON 54........................................ 3 | BUSA 120 ..................................... 3
Cluster A or C ....................... 3 or 4 | Cluster A ....................................... 3
Total 15-16 | Total 15

Third year

First semester Hrs. | Second semester Hrs.
--- | ---
TA&M 226 ..................................... 3 | F&CS 191B ................................... 3
TA&M 227 ..................................... 3 | ACCT 51 ....................................... 3
ADV 113 ........................................ 3 | C S 5 ............................................. 4
Emphasis Restricted Elective ...... 3 | ENGL 112 or ENGL 105 ............... 3
SOCA or PSYC or ECON ............... Emphasis Restricted Elective ...... 3
(Cluster B) .................................. 3 | Total 16
General Elective .......................... 1-3 | Total 16-18
Total | Total 18

Fourth year

First semester Hrs. | Second semester Hrs.
--- | ---
TA&M 222 ..................................... 3 | BUSA 130 ..................................... 3
TA&M 228 (WR) ............................. 3 | ARE 261 ........................................ 3
TA&M Elective .............................. 3 | HMFE 165 or FCS 281 ................. 3
HMFE 260 ..................................... 3 | Emphasis Restricted Elective ...... 3
Cluster A ....................................... 3 | General Elective .......................... 1-3
Emphasis Restricted Elective ...... 3 | Total 13-15
Total | Total 18

Division of Forestry

Joseph F. McNeel, Ph.D., Director.
Anthony C. Tomkowski, Forest Management Coordinator.
Steven J. Hollenhorst, Recreation, Parks and Tourism Resources Coordinator.
Robet C. Whitmore, 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. Those include forest resources management, recreation, parks, and tourism resources, wildlife and fisheries resources, and wood industries. If you wish to be admitted to our division but are unsure about your major, you can be admitted to the general forestry curriculum with a faculty member to advise you until a program major has been selected. If you have chosen a program major, you will be admitted directly to the major and be assigned a faculty advisor at your first registration.

The division, which has excellent facilities, is located in Percival Hall on the Evansdale Campus in close proximity to the Evansdale Library and the Towers Residence Halls. In addition, 10,400 acres of forested tracts, including the 7,000 acre University Forest, are located near the campus and are used as extensive outdoor laboratories. The Westvaco Natural Resource Center is the focal point of the Division's teaching research and service activities at the University forest.
Transfer Credits for Professional Courses

If you are a transfer student entering the Division of Forestry 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 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. All other credits are accepted subject to the regulations of the Office of Admissions and Records regarding transfer of credits.

Bachelor of Science
Wildlife and Fisheries Resources Curriculum

The wildlife and fisheries management curriculum, consisting of 136 hours, is designed to prepare you for professional positions as wildlife and fish biologists, wildlife managers, planners of wildlife/fisheries conservation programs, wildlife or fisheries communication specialists, and wildlife and fish toxicologists. The curriculum provides a solid basic background in biology, ecology, and natural resource management. A careful selection of restricted and free electives enables you to specialize in related natural resource areas and to have the opportunity for widening employment in other environmental fields. Wildlife graduates from our program meet the certification requirements for wildlife biologists from the Wildlife Society.

The curriculum offers four options: wildlife science oriented toward research (for those considering graduate school); wildlife management directed toward land management; fisheries science oriented toward research for those considering graduate school; and fisheries management directed toward basic, non-resident management of fish. Other options can be tailored to your objectives. You will be able to consult with your advisor in the selection of courses from a group of restricted electives to develop your area of emphasis.

Curriculum Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>ENGL 1 and 2 Composition and Rhetoric</td>
<td>6</td>
</tr>
<tr>
<td>MATH 3 College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 15 Principles of Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 17 The Functional Diversity of Organisms</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 15 and 16 Fundamentals of Chemistry</td>
<td>8</td>
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<tr>
<td>CS Science 5</td>
<td>4</td>
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<tr>
<td>FORDendrology</td>
<td>3</td>
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<tr>
<td>Soils introductory course</td>
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<tr>
<td>Oral communication</td>
<td>3</td>
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<tr>
<td>STAT 101 or equivalent</td>
<td>3</td>
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<tr>
<td>ANPH 100</td>
<td>3</td>
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<tr>
<td>Plant (botany) course</td>
<td>3</td>
</tr>
<tr>
<td>Resource policy course</td>
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<tr>
<td>FMAN 211 Silviculture*</td>
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<tr>
<td>WMAN 50, 134, 213, 214, 224, 228, 231*, 234*, 245</td>
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<tr>
<td>LSP electives**</td>
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<td>Restrictive electives</td>
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<td>Free electives</td>
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* Students selecting the fisheries option will take BIOL 246 Limnology, BIOL 257 Ichthyology: FOR 170 Fish Ecology, BIOL 247 Aquaculture, and approved elective in place of FOR 5, Plant (botany) course, FMAN 211, WMAN 231, and WMAN 234.

**Courses in each of Cluster A and B must involve at least three different disciplines. At least two courses must be taken in the same discipline. Three hours of Cluster A or B must focus on foreign or minority culture.
When you attend WVU, you will have some special opportunities to enhance your education. We have a U.S. Fish and Wildlife Service Cooperative Research Unit housed within our program. This provides two additional faculty conducting extensive research programs all around the country. Undergraduates benefit from the unit in several ways: the unit provides a federal contact for employment opportunities; the unit research program may provide summer employment on fish and wildlife projects; and faculty in the unit also teach in our program.

All of our faculty are involved with graduate training. This active research program provides invaluable classroom experiences as well as summer employment opportunities for you.

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 and training they received while here at WVU.

Bachelor of Science in Forestry
Forest Resources Management Curriculum

This curriculum is designed to prepare you for a career in management of forest land and associated resources. In forestry, we face growing demands for wood products, along with increasing public consciousness of the value of wildlands for recreation, wildlife habitat, watershed protection, aesthetics, and environmental protection. Our curriculum is designed to train you in a balanced approach to forest management. The major emphasis is on management and utilization of timber resources, but we also orient you to management of forests for recreation, wildlife, and water. We also stress the importance of forest climate, environmental protection, and aesthetic qualities in forest management.

Curriculum Structure

We require you to complete 138 credit hours of course work. Required courses include biological, physical, and social sciences, English composition and 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, gives you ample opportunity to gain field experience. Overall, we have designed the curriculum to give you the needed blend of scientific, technical, and managerial knowledge you will need to manage public or private forest resources. You may use elective hours to develop additional professional competence in specialized areas.

**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Freshman Year</th>
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<tbody>
<tr>
<td>FOR 1 Careers in Natural Resources Management</td>
<td>1</td>
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<tr>
<td>BIOL 1 and 3 General Biology</td>
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</tr>
<tr>
<td>CHEM 11 and 12 Survey of Chemistry (or equivalent)</td>
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</tr>
<tr>
<td>ENGL 1 Composition and Rhetoric</td>
<td>3</td>
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<tr>
<td>MATH 15 or 128 Calculus or Introduction to Calculus</td>
<td>3</td>
</tr>
<tr>
<td>PLSC 52 Principles of Plant Science</td>
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</tr>
<tr>
<td>RPTR elective (see advisor for approved list)</td>
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</table>
Sophomore Year
FOR 5 Dendrology 3
FMAN 12 Forest Ecology 3
FMAN 122 Forest Mensuration 4
FMAN 200 Forest Resources Management Field Practice* 6
CE 5 Land Surveying 4
CS 5 Introduction to Computer Applications 4
ECON 54 Principles of Economics 3
ENGL 2 Composition and Rhetoric 3
STAT 101 Elementary Statistical Inference 3
WMAN 134 Forest Wildlife Management 3

Junior Year
FOR 226 Remote Sensing of Environment 2
FMAN 151 Forest Fire Protection 2
FMAN 211 Silvicultural Systems 4
FoMAN 230 Principles of Forestry Economics 4
AGEE 262, SPA 80, or THET 74 Agricultural and Natural Resource Communications, 3
Speech Improvement: Theory and Performance, or Aging
AGRN102 and 103 Principles of Soil Science 4
ECON55 Principles of Economics 3
ENGL 105 or 208 Business English or Scientific and Technical Writing 3
WDSC 123 Wood Anatomy and Structure 3
WDSC132 Primary Conversion and Grading 3

Senior Year
FOR 220 Forest Policy and Administration 3
FHYD 244 Watershed Management 3
FMAN 233 Forest Management 3
FMAN 234 Forest Resources Management Planning 3
ENTO170 or Plant Pathology 170 Forest Pest Management 4

Additional LSP requirements, not elsewhere covered 18
Electives 11
Total 138

*Summer field practice courses

Career Opportunities
Our graduates find a variety of career opportunities. Many are professional foresters with governmental agencies, such as the United States Forest Service and state forestry services, and many others are employed by private wood industries such as lumber and wood products companies and pulp and paper companies. 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 such things as 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 industry companies.

Bachelor of Science in Forestry
Wood Industries Curriculum

The wood industries curriculum is designed to prepare students to meet the challenges of a career in the wood products industry. Society must provide the basic needs for materials for building materials, furniture, paper, packaging, 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 must 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 industries curriculum focuses on these aspects of the wood products industry.

Areas of Emphasis

There are two options within the wood industries curriculum that you may choose from: wood processing and forest utilization. The wood processing option prepares graduates for careers in the production of wood products, including primary products, architectural woodwork, furniture and cabinets, and composite materials. The forest utilization option prepares graduates for careers in timber harvesting, forest engineering, primary processing of wood products, and timber procurement.

Curriculum Requirements (Both Options)  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
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<td>Composition and Rhetoric</td>
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<td>ENGL 208</td>
<td>Scientific and Technical Writing</td>
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<td>MATH 15</td>
<td>Calculus</td>
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<td>BIOL Elective</td>
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<td>4</td>
</tr>
<tr>
<td>FOR 1</td>
<td>Professional Orientation</td>
<td>1</td>
</tr>
<tr>
<td>FoOR 5</td>
<td>Dendrology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 11 or 15</td>
<td>Chemistry*</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 12 or 16</td>
<td>Chemistry*</td>
<td>4</td>
</tr>
<tr>
<td>IMSE 277</td>
<td>Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>PHYS I</td>
<td>Introductory Physics</td>
<td>4</td>
</tr>
<tr>
<td>AGEE 62 or C S 5</td>
<td>Computer Science</td>
<td>3 or 4</td>
</tr>
<tr>
<td>STAT 101</td>
<td>Elementary Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>FMAN 122</td>
<td>Forest Mensuration</td>
<td>4</td>
</tr>
<tr>
<td>ECON 54</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 55</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communications Elective**</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
LSP Cluster A***  
LSP Cluster B***  
WDSC 123 Wood Anatomy and Structure 3  
WDSC 132 Primary Conversion and Grading 3  
WDSC 195 Seminar 2  
WDSC 201 Wood Industries Field Trip 1  
WDSC 240 Physical Behavior of Wood 3  
WDSC 241 Wood Mechanics 3  
WDSC 262 Forest Products Decision-Making 4  
WDSC 265 Wood-Based Composite Materials 3  
Option requirements and electives 42  
Total 95 or 96  
*See advisor before choosing chemistry courses  
**May also count as an LSP requirement  
*** May include communications elective.

### Wood Industries Requirements

#### Forest Utilization Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 5 Land Surveying</td>
<td>4</td>
</tr>
<tr>
<td>FHYD 244 Forest Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>FMAN 12 Forest Ecology</td>
<td>3</td>
</tr>
<tr>
<td>FMAN 211 Silvicultural Systems</td>
<td>4</td>
</tr>
<tr>
<td>FMAN 233 Forest Management</td>
<td>3</td>
</tr>
<tr>
<td>FOR 226 Remote Sensing of Environment</td>
<td>2</td>
</tr>
<tr>
<td>RPRTR 42, 233, 234, 239, or 242 Recreation, Parks and Tourism</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 194 Professional Field Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDSC 200 Forest Measurement Field Practice</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 222 Forest Products Harvesting</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 223 Forest Roads</td>
<td>4</td>
</tr>
<tr>
<td>WMAN 134 Wildlife Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Restricted Electives* 7-8  
Total 42 or 43  
*To complete a total of 138 credit hours of required and restricted elective courses. Requires advisor approval.

#### Wood Processing Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGEE 162 or BUSA 120 Management</td>
<td>3</td>
</tr>
<tr>
<td>ARE 231 or BUSA 130 Marketing</td>
<td>3</td>
</tr>
<tr>
<td>ARE 261 or BUSA 140 Finance</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 194 Professional Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 230 Wood Machining</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 237 Wood Adhesion and Finishing</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 251 Forest Products Protection</td>
<td>3</td>
</tr>
<tr>
<td>WDSC 260 Plant Layout for Wood Industries</td>
<td>3</td>
</tr>
</tbody>
</table>

Restricted Electives* 18-19  
Total 42 or 43  
*To complete a total of 138 credit hours of required and restricted elective courses. Requires advisor approval.
Special Opportunities

A regional center for development of the wood products industry, the Appalachian Hardwood Center, is allied with the wood industries program. The staff of the center frequently provides opportunities for educational and professional development of wood industries students.

Career Prospects

Job opportunities for wood industries graduates are outstanding. Nearly all seniors who seek employment after graduation find jobs in the wood products industry. Salaries are generally competitive with other technical disciplines, and opportunities for career advancement are excellent. In addition, some wood industries graduates choose to continue their education by pursuing masters’ and doctoral degrees in this or a related field. Graduates are employed in all areas of the wood products industry in a wide variety of production management, marketing, and technical careers. They can be found in all regions of the United States. Many of the leaders in the nation’s wood products industry are WVU graduates.

Bachelor of Science in Recreation

Recreation, Parks and Tourism Resources Curriculum

The recreation, parks and tourism resources curriculum is designed to prepare you for a career providing recreation and tourism opportunities in the public sector or with private or commercial enterprises. The program requires 136 hours. A basic core of recreation tourism courses is complemented by additional recreation emphasis courses and by appropriate courses within the college or University.

An informational booklet explaining the current list of required and elective courses is available from the Recreation, Parks and Tourism Resources Office, Division of Forestry, 325 Percival Hall, P.O. Box 6125, West Virginia University, Morgantown, WV 26506-6125, or at the program’s website at http://www.caf.wvu.edu/For/pandr/rptmpage.htm

In the freshman year, you may enroll in RPTR 43 Leisure and Human Behavior and RPTR 42 Introduction to Recreation and Park Services. MATH 3 or equivalent, CS 5 or equivalent, STAT 101 or equivalent, and RPTR 42, 43, and 45 will be required prerequisites before upper division recreation and park courses may be taken for credit. At the end of the junior year, after completing RPTR 42, 43, 45, 63, 151, 165, 235, and any other courses necessary for the particular assignment, you must complete an approved, full-time internship of not less than eight weeks with a recreation agency. The experience of the internship will be analyzed and discussed in RPTR 216. Most recreation internships occur during the summer months.

Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1 and 2 Composition and Rhetoric</td>
<td>6</td>
</tr>
<tr>
<td>HIST 1 or 2, History 52 or 53</td>
<td>6</td>
</tr>
<tr>
<td>MATH 3, C S 5, STAT 101</td>
<td>10</td>
</tr>
<tr>
<td>PSYC 1 Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOCO 1 or SOCA 5</td>
<td>3</td>
</tr>
<tr>
<td>ECON 54</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (meeting LSP requirement, usually BIOL 1 and 3)</td>
<td>4</td>
</tr>
<tr>
<td>Recreation, Parks and Tourism Resources courses:</td>
<td></td>
</tr>
<tr>
<td>RPTR 42, 45, 63, 151, 165, 192, 193, 216, 233, 235</td>
<td>30</td>
</tr>
<tr>
<td>Restricted electives (from among FOR, BUSA, and others)</td>
<td>49</td>
</tr>
<tr>
<td>Free electives and additional LSP requirements</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>136</strong></td>
</tr>
</tbody>
</table>
Professional Preparation and Areas of Emphasis

The professional preparation program allows for two areas of emphasis: natural resource recreation or leisure service delivery. Each emphasis develops from a core of recreation classes that establishes a basic professional proficiency. Additional competencies may be developed through the careful selection of electives. Placements with local recreation agencies are important components of the development of professional competencies, and the choice of an internship after the junior year provides extensive experience in the delivery of services and the management of recreation resources.

Natural Resources Recreation This emphasis focuses on outdoor recreation in forested settings, whether park, forest, or riparian. In addition to recreation classes, students complete course work in natural resources (forestry, wildlife, environmental issues), behavioral sciences, political science, economics, and management. Although primary attention is placed on recreation in natural settings, you may develop a specialty in applied outdoor recreation management, interpretation of natural and historical areas or natural resources-related tourism.

Leisure Services Delivery This emphasis prepares you for general entry into the recreation, parks and tourism resources career field. Course work enables you to qualify for positions of increasing operational, supervisory, administrative, and managerial responsibility. This emphasis may also prepare you for the delivery of recreation and leisure services in a wide range of settings, including commercial enterprises and municipal, county, state, and national parks. In addition to the core of recreation classes, additional class work in business administration, political science, and the behavioral sciences may be appropriate.

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 with two emphases: leisure services delivery and natural resources recreation.

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 industries 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 in the Division of Forestry

The six-hour Forest Resources Management Summer Field Practice (FMAN 200) 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 Forest for field studies. The first session provides training in forest surveying, timber estimating, photo interpretation, forest management, and forest recreation. Occasional trips are made to wood-using industries and to other forests to study the management of northern hardwood and spruce types. The second session is a one-week trip to observe forest management practices on private and public lands outside the Appalachian hardwoods region.
The instructional program in the four-hour *Wood Industry Field Practice* (WDSC 200 and 201) consists of a three-week field course in wood processing, industrial safety, and forest measurement and a one-week trip to Virginia and North Carolina to observe various commercial wood-using industries. These industries include lumber, plywood, veneer, particle board, furniture, glue lamination, and preservation. RCPK 192 and 193 *Recreation 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.

The program also offers a series of summer field-based courses and international travel experiences. See the program web page for details.

**Division of Plant and Soil Sciences**
Barton S. Baker, Ph.D., Director.

**Nature of Program/Objectives/Goals**

Plant and Soil Sciences students may choose agronomy (crop science and soil science), basic sciences, horticulture, or environmental protection as majors. Graduates from this curriculum 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**

**Plant and Soil Science Curriculum**

<table>
<thead>
<tr>
<th>Curriculum Requirements</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition and Rhetoric (or conformity with</td>
<td></td>
</tr>
<tr>
<td>University English requirements)</td>
<td>6</td>
</tr>
<tr>
<td>Arts and Humanities (Cluster A)</td>
<td>12</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (Cluster B)</td>
<td>12</td>
</tr>
<tr>
<td>Natural Sciences (Cluster C included)</td>
<td>24</td>
</tr>
<tr>
<td>(Must elect a minimum of eight hours in biology; eight hours in college algebra or equivalent.)</td>
<td></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, from each of the following disciplines: 1. Animal Science; 2. Plant Science; 3. Soil Science; and 4. Agricultural/Resource Economics. Elect additional courses to obtain a total of 45 hours in agriculture.</td>
<td>37</td>
</tr>
<tr>
<td>Free and Restricted Electives</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
</tr>
</tbody>
</table>
The specific requirements for each of the program options are listed under the description of that option.

**Agronomy**

Agronomy is the application of sciences to the production of field crops and the management of soils. Agronomists are concerned with producing food and with protecting soil and water resources. The crop science option in agronomy emphasizes primarily the physiology, production, and quality of forage crops. The soil science option in agronomy emphasizes the characteristics and management of soils for growing plants, construction sites, wastewater treatment, and surface mine reclamation. Agronomists qualify for a wide variety of occupations, including farming, soil conservation, soil survey, agricultural sales, extension, research, and turfgrass management.

**Required courses:** BIOL 169, ENGL 208, ENVVM 141, MATH 4 or equivalent, PHYS 1, STAT 101, three hours in computer science, three hours in communication studies or speech pathology and audiology, one semester of organic chemistry including laboratory.

**Additional requirements for crop science:** ENTO 204, GEN 171, PPTH 201, six hours in ECON or AGEC, 15 hours in crop science, six hours in soil science.

**Additional requirements for soil science:** GEOL 1 and 2, three hours in engineering, six hours in crop science, 15 hours in soil science.

**Basic Sciences**

This option is especially designed for students who are interested in continuing their education beyond the undergraduate level. Students enrolled in this option develop a strong background in the basic sciences, which permits graduate studies in a number of fields.

**Required Courses:** AGBI 210, ENVVM 141, BIOL 169, CHEM 133, 134, 135, 136, ECON 54, MATH 3, 4, 15, 16, PHYS 1, 2, STAT 101.

**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.

**Natural Science Requirements** (30 hours): BIOL 1, 2, 3, 4; CHEM 15, 16, 131; MATH 3; STAT 101; GEOL 1, 2 or 10, 11*.

**Required College Courses** (24-25 hours): ARE Course, AGRN 102, 103; Animal Science course (3-4 hrs); ENVVM 141, ENVP 55, 200, PLSC 52. *(Note: The B.S. in Agriculture degree requires 45 hours in Agriculture. 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 101, GEOL 1 and 2 or 10 and 11, and C S 5 are accepted as part of the required 45 hours in Agriculture courses.)*
Environmental Protection Electives (13 hours from at least two areas): AGBI 210, ARE 110, 192, 210, BIOL 243, CE 243, CS 5*, or AGEE 62, ENGL 208, ENGR 191B, ENVP 155, FOR 10, 226, GEN 171, GEOG, 105, 151, 205, 250, M 101, PHYS 1, 2, POLS 238.

Specializations (20 hours including the capstone course from one of the following).

Pest Management Capstone = ENVP/ENTO 212; AGRN 150, 251, BIOL 21, ENTO/ PPTH 170, ENTO 201, 204, 210, ENVP 201, PPTH 201.


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. Required courses: AGEC 50 or ECON 54; AGRN 102, 103; BIOL 1, 2, 3, 4, 169; CHEM 131 or 133 and 135; CS 5; ENTO 204; HORT 107, 204, and six hours additional horticulture; PPTH 201.

Bachelor of Science

Environmental Protection

The Bachelor of Science degree with a major in Environmental Protection prepares students for advanced study in safeguarding the quality of the environment. The curriculum offers broad interdisciplinary training in the environmental sciences and a rigorous background preparation for graduate study in these fields. Students select a specialization in either plant protection or soil and water protection. Students work with their advisor to select courses from the specialization electives that match their individual interests and career goals.

ENGL 1, 2 (6 hours), Cluster A (12 hours), Cluster B (12 hours, including ECON 54), Cluster C (requirements described below)

Environmental Protection Requirements: (69-71 hours) AGRN 102, 103, ARE 110, or 192, BIOL 15, CHEM 15, 16, 133, 134, 135, 136, CS 5 or AGEE 62, ENGL 208, ENVN 141, ENVN 55, 200, GEN 171, GEOL 1, 2 or 10, 11, MATH 15 or 128, PLSC 52, PHYS 1, 2, STAT 101 or 201.

Specializations (26 hours from one of the following):


Free Electives (5-7 hours). Total (132 hours).
Division of Resource Management
Peter V. Schaeffer, Ph.D., Director.

Programs
The Division of Resource Management offers curricula in agricultural and environmental education, landscape architecture, and agricultural and resources economics. The curriculum in agricultural and resources 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 environmental 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 environmental 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.

Bachelor of Science
Agribusiness Management and Rural Development
This major is ideally suited to prepare students to pursue careers in a state such as West Virginia where rural areas and small businesses are predominant. The goal of this major is to provide students with a breadth of knowledge in the social and agricultural sciences. Upon graduation, students will be prepared for employment in the private and public sectors of agriculture and rural development. Students with this major can expect to find employment in: agribusiness or farm management; 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 a knowledge of agricultural and rural economies. This major also provides students with the flexibility to pursue course work in preparation for graduate school.

Course Requirements

<table>
<thead>
<tr>
<th>Course Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition and Rhetoric</td>
<td>6</td>
</tr>
<tr>
<td>Liberal Studies</td>
<td></td>
</tr>
<tr>
<td>Cluster A</td>
<td>12</td>
</tr>
<tr>
<td>Cluster B</td>
<td>12</td>
</tr>
<tr>
<td>Cluster C</td>
<td>12</td>
</tr>
<tr>
<td>Required Courses</td>
<td>34</td>
</tr>
<tr>
<td>ARE 10, 50, 104, 195, 201, 211, 231, 261</td>
<td></td>
</tr>
<tr>
<td>AGEE 62; Econ 54 and 55; and Econ 125</td>
<td></td>
</tr>
<tr>
<td>or Stat 101</td>
<td></td>
</tr>
<tr>
<td>Restricted Electives</td>
<td>30</td>
</tr>
<tr>
<td>Selected and approved in consultation with advisor.</td>
<td></td>
</tr>
<tr>
<td>Must include at least four courses from the College of</td>
<td></td>
</tr>
<tr>
<td>Agriculture and Forestry.</td>
<td></td>
</tr>
<tr>
<td>Free Electives</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>128</td>
</tr>
</tbody>
</table>
Bachelor of Science
Environmental and Resource 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 the student’s own interest (such as water use and quality; soil protection; waste management; 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 with 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, upon completion of this degree, 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/policy.

Course Requirements

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition and Rhetoric</td>
<td>6</td>
</tr>
<tr>
<td>Liberal Studies</td>
<td></td>
</tr>
<tr>
<td>Cluster A</td>
<td>12</td>
</tr>
<tr>
<td>Cluster B (must include ECON 54 and 55)</td>
<td>15</td>
</tr>
<tr>
<td>Cluster C</td>
<td>20</td>
</tr>
<tr>
<td>(Must include a course in calculus, and statistics, and two four-credit courses, each with a laboratory.)</td>
<td></td>
</tr>
<tr>
<td>Major Courses</td>
<td>19</td>
</tr>
<tr>
<td>ARE 110, 192, 195, 201, 210, 250, AGEE 62</td>
<td></td>
</tr>
<tr>
<td>Restricted Electives</td>
<td>30</td>
</tr>
<tr>
<td>Selected and approved in consultation with advisor.</td>
<td></td>
</tr>
<tr>
<td>Must include at least four courses from the College of Agriculture and Forestry, with at least one course in agronomy and one in plant sciences.</td>
<td></td>
</tr>
<tr>
<td>Free Electives</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>128</td>
</tr>
</tbody>
</table>

Bachelor of Science in Agriculture
Agricultural and Environmental Education

The agricultural and environmental education curriculum is designed to prepare students for entry into agricultural teaching, extension, and environmental technology positions or other professional employment in government, industry, or entrepreneurship where competence in communications and leadership is required. The curriculum provides flexibility to develop programs in options emphasizing teacher preparation, environmental technology, or communications and leadership. Courses are selected by the student, in consultation with his or her advisor, that will prepare the student to achieve his or her aspirations.
Curriculum Requirements

<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>Fine Arts and Humanities (Cluster A)</td>
<td>12</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (Cluster B)</td>
<td>12</td>
</tr>
<tr>
<td>Natural Sciences and Mathematics (Cluster C)</td>
<td>12</td>
</tr>
<tr>
<td>(Must elect four hours in biology; four hours in chemistry;</td>
<td></td>
</tr>
<tr>
<td>three hours in college algebra or equivalent).</td>
<td></td>
</tr>
<tr>
<td>Courses in the College of Agriculture and Forestry</td>
<td>45</td>
</tr>
<tr>
<td>Must include a minimum of a three credit course, excluding</td>
<td></td>
</tr>
<tr>
<td>Assigned Topics, in each of the following: Animal Science,</td>
<td></td>
</tr>
<tr>
<td>Plant Science, Soil Science, Agricultural Economics, and</td>
<td></td>
</tr>
<tr>
<td>Forest Management.</td>
<td></td>
</tr>
<tr>
<td>Restricted Science Electives</td>
<td>6</td>
</tr>
<tr>
<td>(To be selected from statistics, computer science, geology,</td>
<td></td>
</tr>
<tr>
<td>mathematics, physics, physical science, biology, or chemistry)</td>
<td></td>
</tr>
<tr>
<td>Option Requirements and Electives</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
</tr>
</tbody>
</table>

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 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 specialty areas such as production, processing, conservation and forestry, and horticulture. In addition to teaching, graduates often take 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, on hours earned in professional education, and in technical agriculture courses; pass competency tests in reading, writing, mathematics, listening, speaking, computer literacy and agriculture, and the Principles of Learning and Teaching (Praxis) test for grades 7-12; and complete the required agriculture and professional education courses.

Agricultural and Environmental Technology

This option offers broad training in agricultural and environmental technology as well as specialized instruction in areas of solid waste management, composting science, surface water control and sediment management, turf irrigation, and agricultural power. Employment opportunities exist with federal, state, county and municipal agencies and private companies where knowledge of technology related to the environment is required. Examples include waste facility managers, recycling coordinators, soil conservation and water quality specialists, and environmental officers.
Agricultural Communications and Leadership
This option emphasizes human resources management and the development of leadership capabilities. Persons who wish to work for the Extension Service as agricultural or 4-H agents, or to be employed in government, business or industry where agricultural and environmental training coupled with communications and leadership skills is valuable, may find this option to be of interest. Programs can be developed to include broad or specific training in various areas of agriculture, environmental technology, and community or international development.

Agricultural Courses Required of all Agricultural and Environmental Education Majors: AGEE 62, AGEE 120, AGEE 162, AGEE 188, AGEE 280 (Practicums), AGRON 102, 103, ARE 104, A&VS 51, PISC 52.

Agricultural Courses Recommended for all Agricultural and Environmental Education Majors: AGEE 250, ARE 50, FMAN 132, HORT 107, HORT 245, RESM 1.

Courses Required in the Agricultural Teacher Education Option: AGEE 160, AGEE 263, AGEE 191 Colloquium, AGEE 191 Tutoring, AGEE 191 Learning Environment, AGEE 195 Reflective Learning, PSYC 1, PSYC 141.

Courses Required in the Agricultural and Environmental Technology Option: AGEE 250, AGEE 280, AGEE 290, ARE 110.

Courses Required in the Agricultural Communications and Leadership Option: AGEE 195, AGEE 260, AGEE 261, AGEE 263, AGEE 191 Colloquium, PSYC 1, PSYC 141.

Bachelor of Science in Landscape Architecture
Landscape Architecture Curriculum
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 Appalachia 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>Course Description</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English composition and rhetoric (or conformity with University English requirements)</td>
<td>6</td>
</tr>
<tr>
<td>Arts and humanities (Cluster A)</td>
<td>12</td>
</tr>
<tr>
<td>Social and behavioral sciences (Cluster B)</td>
<td>12</td>
</tr>
<tr>
<td>Natural sciences (Cluster C) Including Math 4</td>
<td>12</td>
</tr>
<tr>
<td>C E 5</td>
<td>4</td>
</tr>
<tr>
<td>Courses in landscape architecture*</td>
<td>62</td>
</tr>
<tr>
<td>MATH 3 (LSP required math course.)</td>
<td>3</td>
</tr>
<tr>
<td>Studio art courses</td>
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</tr>
<tr>
<td>Electives</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>136</strong></td>
</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 20, 21, 50, 51, 60, 61, 131, 132, 150, 151, 160, 250, and 251. Timely completion of Math 3 and 4 and of CE 5 is also critical for advancement in the program of study.

Of the 62 hours required for a bachelor of science in landscape architecture, the following courses, or their equivalent, are required: LARC 20, 21, 23, 31, 50, 51, 60, 61, 112, 131, 132, 150, 151, 160, 250, 251, 252, and 284.

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 course work until his/her work meets satisfactory standards.
Eberly College of Arts and Sciences

M. Duane Nellis, Ph.D., Dean of the College.
Joan S. Gorham, Ed.D., Associate Dean, Academic Affairs.
Rudolph P. Almasy, Ph.D., Associate Dean, Development.
Nicholas G. Evans, Ed.D., Associate Dean, Undergraduate Education.
Fred L. King, Ph.D., Associate Dean, Research and Graduate Studies.
Asuntina S. Levelle, J.D., Assistant Dean, Financial Planning and Management.
A. Mark Dalessandro, M.A., Director of College Relations.
Thomas J. Moran, B.S., Manager, Information Systems.

Majors in Arts and Sciences

Bachelor of Arts:
- Biology
- Chemistry
- Communication Studies
- Economics
- English
- Environmental Geoscience
- Foreign Languages
- Forensic Identification
- Geography
- Geology
- History
- Interdepartmental Studies
- Mathematics
- Philosophy
- Physics
- Political Science
- Psychology
- Social Work
- Sociology and Anthropology
- Statistics

Regents Bachelor of Arts

Bachelor of Science:
- Biology
- Chemistry
- Computer Science
- Geology
- Physics

The interdepartmental studies major involves concentrated study in more than one department of the University. These curricula include the individualized major, the specially designated area major, and the liberal arts and sciences major.

The specially designated area programs are:
- Biochemistry
- International Studies
- Religious Studies
- Social Studies
- Slavic Studies

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 West Virginia University 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 eleven 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 of Arts and Sciences was changed to the 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 300 faculty members are actively engaged in research and scholarship, publishing approximately 300 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 Arts and Sciences 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 pre-major programs on the basis of grade-point average and test scores. After completing a specific number of credit hours, students seek admission to a degree program within the college.

Minimal Eberly College of Arts and Sciences requirements for regular admission into many degree programs are completion of 30 to 58 hours of course credit, a 2.0 overall average, and a 2.0 average in courses already completed in the discipline of the degree program to which the student is applying. Specific degree programs or majors may have additional requirements.
Students may be admitted to degree programs in the Eberly College of Arts and Sciences in two distinct categories:

**Regular Admission:** Student has met all degree program requirements.

**Provisional Admission:** Student has completed 30 to 58 hours but has not yet met all Eberly College of Arts and Sciences and/or degree program requirements for entrance into the specific program. The department that accepts a student provisionally must state the terms of acceptance, including deficiencies, in writing. Failure by the student to remove deficiencies by the stipulated date will result in suspension from the degree program.

A student not admitted to a degree program by the time of completion of 70 hours of course work will not be permitted to re-enroll in the college.

Students planning to qualify for teacher certification as well as for an A&S degree should check with their advisors and the College of Human Resources and Education to determine the requirements for such certification.

**Regulations Affecting Degrees**

**Bachelor of Arts Degree:** The degree of bachelor of arts in the Eberly College of Arts and Sciences is conferred upon a student who complies with the general regulations of WVU concerning degrees and satisfies all entrance, college, and departmental requirements.

**Bachelor of Science Degree:** The degree of bachelor of science is conferred upon a student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and college requirements, and completes the requirements for the bachelor of science degree in chemistry, computer science, geology, or physics.

**Requirements for Degrees**

Students must complete WVU LSP requirements, ECAS BA requirements, major requirements, and electives to total 128 hours.

**BA Requirements**

1. **Foreign Language** Two years of study in one language. The student may satisfy this requirement by taking courses 1, 2, 3, and 4, or other approved courses, in one language. Students who present two or more units of high school credit in a foreign language may satisfy this requirement by taking courses 3 and 4, or other approved courses, in that language. Such students may elect to take courses 1 and/or 2 as additional preparation for courses 3 and 4. (For explanation of various options and other approved courses, see listings under “Foreign Languages” in the Undergraduate Catalog). Courses used to fulfill this requirement are in addition to those used to fulfill the University Liberal Studies Program Cluster A requirement; thus, courses 1, 2, 3, 4, 10, 11 could not be applied to Cluster A requirements if taken in the language used to meet the foreign language 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 interactions within the contemporary international system. This requirement may be simultaneously used to satisfy LSP requirements, but no course used to satisfy the foreign language requirement may be used to fulfill this requirement. Courses satisfying this requirement are the following: Communication Studies 135; English 85; Foreign Literature in Translation 16, 17, 152, 166, 171, 189; Geography 2, 143, 144, 210; History 4, 5, 6, 118, 142, 209, 225, 226 228, 230; Humanities 5, 20; Philosophy 113, 122; Political Science 3, 150, 160, 250, 251, 254, 255, 256, 258, 266, 267, 269; Religious Studies 130, 131, 132; Sociology and Anthropology 5, 51, 155, 156, 222; Technology Education 245.

3. **Fine Arts** Students must satisfactorily complete a minimum of three semester hours focused on the fine arts—art, literature, music, theatre, etc. Courses used to fulfill this requirement are in addition to those used to fulfill the Cluster A requirement. Courses satisfying this requirement are the following: Art 30;
4. Grade-Point Average  A cumulative GPA of 2.0 is required for graduation.

Requirements for Degrees
Students must complete WVU LSP requirements, ECAS BA requirements, major requirements, and electives to total 128 hours.

BS Requirements:
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 BS programs may require foreign language. For students completing BS programs, foreign language courses may be counted toward Cluster A. (Note University restrictions for Cluster A, p. 31).

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 simultaneously used to satisfy LSP requirements. Courses satisfying this requirement are the following: Communication Studies 135, English 85; Foreign Literature in Translation 16, 17, 152, 166, 171, 189; Geography 2, 143, 144, 210; History 4, 5, 6, 118, 142, 209, 225, 226, 228, 230; Humanities 5, 20; Philosophy 113, 122; Political Science 3, 150, 160, 250, 251, 254, 255, 256, 258, 266, 267, 269; Religious Studies 130, 131, 132; Sociology and Anthropology 5, 51, 155, 156, 222; Technology Education 245.

3. Mathematics  Satisfactorily completion of MATH 15 is required for students earning an Eberly College BS degree. MATH 15 may not be used to simultaneously satisfy LSP cluster C requirements or the BS Science requirement (below).

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 LSP Cluster C requirements.

Course satisfying the BS Science requirement are the following:
BIOL 15 and BIOL 17
CHEM 11 and CHEM 12 or CHEM 15 and CHEM 16 or CHEM 17 and CHEM 18
CS 15 and CS 16 or CS 15 and CS 56 (for students with programming experience) or CS 15 and CS 76 (for students with programming experience) or
GEOL 1/2 and [GEOL 3/4 or GEOL 6* or GEOL 7* or GEOL 127*]
or
GEOL/GEOG 10/11 and [GEOL 3/4 or GEOL 6* or GEOL 7* or GEOL 127*]

MATH 16 and MATH 17
MATH 16 and [STAT 101* or STAT 201*]
[STAT 101* or STAT 201*] and [STAT 212* or STAT 221* or STAT 231*]

PHYS 1 and PHYS 2 or PHYS 11 and PHYS 12
* = 3-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 1 and 2, or 11 and 12); students may earn credit for only one set of CHEM courses (CHEM 11 and 12, or 15 and 16, or 17 and 18); students may not earn credit for both STAT 101 and 201; students may not earn credit for both GEOL 3 and 6.

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” BA and BS 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.
- More than 42 hours in one departmental subject for a bachelor of arts degree. (In the case of English language and literature, the 42-hour maximum excludes credits in English 1 and 2.) As much as 60 hours may be presented from a department that offers more than one subject (e.g., foreign languages). For majors in the Department of Foreign Languages, the 60-hour maximum does not include credit for Linguistics 111 or for the 6-12 hours in language courses used to fulfill the foreign language requirement of the Eberly College of Arts and Sciences. In addition, for all B.A. degree candidates in the college, “Professional Field Experience” courses numbered 194 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 Eberly College of Arts and Sciences 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.

Any student may petition to receive credit by examination for any course listed by a department in the Eberly College of Arts and Sciences as one 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 establish a major sequence and to qualify for graduation, the student must have spent at least two semesters and have accumulated a minimum of 30 semester hours as a student in a degree program.

Transfer Credit Except with the approval of the department chair or degree program coordinator, no upper-division course in the major taken at another institution will be counted toward meeting the requirements of the degree program.

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 may require a higher cumulative grade-point average. (See specific departments for admission requirements.)

Academic Minors

Several departments in the Eberly College of Arts and Sciences offer formal academic minors. 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 course work with a minimum of nine hours at the upper division level (course number of 100 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/her intention to complete a minor when formally requesting admission to a major program. Check sheets with the requirements of minors are available at the Eberly College of Arts and Sciences Undergraduate Advising and Student Records Office and from the student’s advisor. It is the responsibility of the student 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/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 202 Student Services Center. Candidates should make such application during the second semester of their junior year in order to have their records evaluated as to Eberly College of Arts and Sciences 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
Katherine Bankole, Ph.D., Coordinator.

Africana Studies Certificate Program
The Africana Studies Certificate program is an academic unit within the Eberly College of Arts and Sciences. Approved by the West Virginia University Faculty Senate in the spring of 1990, it is a multidisciplinary program of study. The program seeks, through Afrocentric research and methodological framework, to explore key aspects of the African world experience. The term "Afrocentric" refers to the study of African people from the points of view of the African people and those of African descent themselves. The broad educational purpose of the certificate program is to engender among all students an intellectual appreciation of the contributions that African people have made to the world civilization.

Certificate Requirements
Students in the Africana Studies program are required to work with a regular advisor to complete an individualized curriculum plan. While reflecting a certain amount of standardization in the acquisition of core or basic elements of African and African-American knowledge, the program also encourages flexibility between the certificate requirements and the student’s own major degree requirements.

To receive an ASP certificate, students must complete a total of 18 credit hours, with a minimum GPA of 2.5. Requirements for the certificate include MDS 100 Introduction to African and African-American Studies (3 cr.), MDS 80E Capstone Seminar: Perspectives in African and African-American Studies (3 cr.), MDS 191 Independent Study/Research in a concentration area, and at least nine additional credit hours in a concentration area.

Students may select courses from one of the three geographical areas of interest: African Continental studies (the study of African people in Africa), Diaspora studies (the study of African people in the United States, Canada, the Caribbean, and South America) or African World studies (a comparative examination of Africa, the Americas, and/or European/Asian African people). Students may also choose from one of several specific academic concentrations. Only three courses from one department or prefix can be applied to the certificate, and only courses offered by ASP faculty or those approved by the ASP faculty committee will be accepted for the certificate program.

Application forms and further information about the Africana Studies Program may be obtained from the Africana Studies Program Coordinator, 590 Spruce Street, Center for Black Culture and Research.

Biochemistry
Keith Garbutt, Biology Chairperson
Paul W. Jagodzinski, Chemistry Chairperson

Degree: Bachelor of Arts

Nature of Program
The curriculum in biochemistry prepares students for careers requiring a strong background in basic principles of the physical and life sciences. Students may earn either a Bachelor of Science (B.S.) in Biochemistry through the Division of Animal and Veterinary Sciences in 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 15 and 16; Physics 1 and 2 or Physics 11 and 12; Biology 15, 17, 19, and 211; Chemistry 15, 16, 133, 134, 135, and 136.

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 (20 hours): Biochemistry 139 or AGBI 210/211; Chemistry 115, 141, and 142; Biology 214 or 216; Senior Seminar in Biochemistry; and a minimum of 4 hours of research (BIOL 105 or BIOL 107 or BIOC 192). The remaining 10 hours may be selected from the following courses: BIOL 105, 107, 209, 213, 214 or 216, 219, 221, 222, 223, 268, 270, 271, 314, 315, 320, 365; CHEM 212, 235, 239; BIOC 192, 399.

Completion of the Chemistry area of emphasis requires 30 hours beyond the Biochemistry Core Curriculum. The following courses are required (16 hours): Biochemistry 139 or AGBI 210/211; Chemistry 115, 141, and 142; Biology 214 or 216; and Senior Seminar in Biochemistry. The remaining 14 hours may be selected from the following courses: BIOL 209, 214, 270; CHEM 192, 194, 210, 211, 212, 213, 222, 235, 237, 239, 241, 314, 331; BIOC 192, 399. The student’s program of study must include at least one CHEM course numbered 210 or higher. CHEM 17, 18 may be substituted for CHEM 15, 16, and 115.

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 advisor.

Suggested Biochemistry Curriculum

<table>
<thead>
<tr>
<th>First year</th>
<th></th>
<th>Second year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Hrs.</td>
<td>Second Semester</td>
<td>Hrs.</td>
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<tr>
<td>BIOL 15</td>
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<tr>
<td>CHEM 15</td>
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<td>CHEM 16</td>
<td>4</td>
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<tr>
<td>MATH 15</td>
<td>4</td>
<td>MATH 16</td>
<td>4</td>
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<td>ORIEN 2 (Biochemistry)</td>
<td>1</td>
<td>ENGL 1</td>
<td>3</td>
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<tr>
<td>LSP Elective</td>
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<tr>
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<td>16</td>
<td>Total</td>
<td>18</td>
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</table>

| Second year                                    |               |                                                   |               |
| First Semester                                 | Hrs.          | Second Semester                                 | Hrs.          |
| BIOL 19                                        | 4             | BIOL 211                                        | 3             |
| CHEM 133/135                                   | 4             | CHEM 134/136                                    | 4             |
| PHYS 1 or 11                                   | 4             | PHYS 2 or 12                                    | 4             |
| ENGL 2                                         | 3             | LSP Elective                                    | 3             |
| Language                                       | 3             | Language                                        | 3             |
| Total                                          | 18            | Total                                           | 17            |
Third year
First Semester          Hrs.          Second Semester          Hrs.
BIOC 139 or AGBI 210/211 ...... 4          BIOL 214 or 216 ......................3
CHEM 115 ..................................................4          CHEM 141/142 ..................................4
Language ..........................................3          Concentration Elective ................4
LSP Elective ...........................................6          Language .............................................3
Total 17

Fourth year
First Semester          Hrs.          Second Semester          Hrs.
Concentration Electives .............7          Concentration Electives ............3
LSP Elective ...........................................3          Biochem. Senior Seminar ...............1
Fine Arts .............................................3          LSP Elective .........................................3
Free Electives .........................5          Total 12
Total 13

Biology
Keith Garbutt, Chairperson.
Ramsey Frist, Associate Chairperson.

Degree: Bachelor of Arts
Bachelor of Science

Nature of Program
The Department of Biology offers two degree programs, the bachelor of science, biology and the bachelor of arts with a major in biology. An environmental biology track is also available in either degree program. These two programs are structured to meet the needs of all students who are interested in a career in the broad area of the life sciences.

The undergraduate programs provide an excellent preparation for those students who are preparing to attend graduate school and medical, dental, or other medically related professional schools. A degree in biology prepares students for a wide range of careers in the biological sciences including environmental biology, biotechnology, genetics, and other biologically related technical fields in government and private industry. In addition, with appropriate electives, students with a degree in biology can pursue a career in a wide array of areas including law, journalism, teaching, health care administration, and business.

After completing an initial four-semester core sequence in the biological sciences, students in the Biology Bachelor of Arts program may choose to specialize in courses from three major areas of biology: cellular and molecular biology, ecology and evolution, or organismal biology. Those students pursuing the Bachelor of Sciences 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 orientated courses. Laboratory courses include topics such as cellular/molecular biology, comparative anatomy, developmental biology, ecology, ichthyology, invertebrate zoology, molecular genetics, population biology, plant systematics, and recombinant DNA technology 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.

Biology Scholarships
In addition to the financial aid offered by WVU, the Department of Biology maintains two scholarship programs specifically for biology majors. The Ethel C. Montiegel...
Award is awarded to students, usually in their junior year, who have shown a particular aptitude for biology and have demonstrated a clear desire for a career in the biological sciences.

The Henry W. Hurlbutt Memorial Endowment is awarded to undergraduate students who are conducting independently mentored research through the Department of Biology’s undergraduate research program. This endowment provides resources for students to attend professional meetings, travel to perform research, or to support the cost of research activity within WVU. Recipients are expected to remain as biology majors in order to be eligible for renewed support.

**Admission Requirements**

In addition to college requirements, admission to the program requires a 2.0 overall grade-point average, 12 hours of biology, and at least a cumulative GPA of 2.0 for courses in biology. To maintain biology major status and graduate, students must maintain at least a 2.0 cumulative average for biology courses at WVU.

**Bachelor of Science Requirements in Biology**

The bachelor of science in biology requires a minimum of 38 hours in biology or approved courses in the biological sciences with a 128 hours total required for graduation.

Required courses include:

- Biology (BIOL) 15, 17, 19, and 21 with a “Total Science Experience Laboratory Section,” which should be taken in this sequence;
- Chemistry (CHEM) 15 or 17 (which should be taken concurrently with BIOL 15 if possible), CHEM 16 or 18, Organic Chemistry CHEM 133, 134, 135, and 136.
- Mathematics Calculus (MATH 15), Statistics (STAT 101), MATH 16 (optional)
- Physics (PHYS) 1 or 11 and 2 or 12.

The inclusion of MATH 16 and PHYS 11 and 12 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 211, 212, 213, 214, 216, 219, 221, 222, 223, 224, 260, 268, and 269.
- Group III (Evolution and Ecology): BIOL 201, 209 (Symbiosis), 233, 240, 243, 244, 246, 251, 254, 272, ENVM 200, GEOL 231.
- Group IV: PHYS 191 (Medical Physics), AGBI 210 (Agricultural Biochemistry), BIOC 139 (Introduction to Biochemistry), and BIOL 210 (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 105 and 107 for credit however only 6 hours of BIOL 105 and 107 may be used towards the 21 hour elective requirement. Graduate (300-level) courses in biology may be taken if approved by the dean and department.

BIOL 109, 166, 194, 209 (Independent Study Section), and 309 (Independent Study Section) do not satisfy the required 21 hours of electives in biology. They can serve as general electives.

**Bachelor of Arts Requirements in Biology**

The bachelor of arts with a major in biology requires a minimum of 31 hours to a maximum of 42 hours in biology, with 128 total hours required for graduation.
Required courses include:

- Biology (BIOL) 15, 17, 19, and 21, which must be taken in this sequence.
- Chemistry (CHEM) 15 or 17 (which should be taken concurrently with BIOL 15, CHEM 16 or 18, 133, 134, 135, and Agricultural Biochemistry (AGBI) 210 may be taken in lieu of CHEM 134 and 136 with permission of the biology Department Chair. However, this is not advisable due to requirements of graduate and professional schools.
- The mathematics requirement includes either MATH 15 and 16 or MATH 128 and Statistics (STAT) 101.
- Physics (PHYS) 1 or 11 and 2 or 12 are also requirements.
- Fifteen hours of required biology electives, one of which must have a laboratory, may be selected from the following list: BIOL 105 (limited to four hours credit), 107 (limited to four hours credit), 169, 201, 209 (sections B and up), 210, 211, 212, 213, 214, 216, 219, 221, 222, 223, 224, 231, 232, 233, 234, 240, 243, 242, 244, 246, 247, 248, 249, 251, 252, 253, 254, 255, 257, 260, 261, 262, 263, 268, 269, 270, 271, and 272.

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 105, 107, 109, 194, and 209A. Graduate (300-level) courses in biology may be taken if approved by the dean and department.

BIOL 109, 166, 194, 209A, and 309A do not satisfy the required 15 hours of electives in biology. They can serve as general electives.

**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 advisor about admission.

Individual original research, a senior thesis, and a seminar are required parts of the Honors Program.

**Suggested Biology (B.A.) Curriculum**

<table>
<thead>
<tr>
<th>First year</th>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
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<td>CHEM 16</td>
<td>4</td>
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<td>MATH 15</td>
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<td>CHEM 136</td>
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<td>ENGL 2</td>
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**Total Hours:** 129

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

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#### Third year

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<td><strong>Total</strong></td>
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#### Fourth year

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<td><strong>15 (or 16)</strong></td>
<td><strong>Total Hours:</strong> 128</td>
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</tbody>
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### Chemistry

Paul W. Jagodzinski, Chairperson.
Ronald B. Smart, Associate Chairperson.

**Degrees: Bachelor of Arts, Bachelor of Science**

**Nature of Program**

The 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.

In the fall of 1985, the Department of Chemistry began its first full year in a completely renovated Clark Hall. The renovation has given the department a state-of-the-art facility for undergraduate chemistry. Clark Hall now includes 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 where advanced undergraduates may participate in research projects.
The bachelor of science (chemistry) is certified by the American Chemical Society. This program is designed for those students who desire to qualify for professional positions in industry and governmental services as well as those who plan to do graduate work in chemistry or allied areas in preparation for research careers in industry or coupled with university teaching.

The bachelor of arts with a major in chemistry is designed for those students who plan 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, or even law or business may be pursued by 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 than the B.A. program.

Chemistry Scholarships
In addition to financial aid offered by the University, the department maintains three scholarship programs specifically for chemistry majors. The John A. Moore Chemistry Scholarships are awarded to students who are West Virginia residents, are in the B.S. program, have records of outstanding achievement, and demonstrated financial need. The Charles L. Lazzell Scholarship and The Carpenter Family Scholarship are awarded to students in either the B.S. or B.A. programs with records of outstanding achievement and demonstrated financial need. Scholarship recipients are expected to remain as chemistry majors and to maintain a 3.0 average in their degree program in order to be eligible for continued support.

Admission Requirements
In addition to College requirements, admission to either program and continuance in each requires at least a cumulative average of 2.0 for courses in chemistry taken in the WVU Department of Chemistry.

Degree Requirements
Bachelor of Science (Chemistry)
A total of 136 hours is required, subject to the general course exclusions for all degrees. The following courses are required: Chemistry (CHEM) 17 and 18 or CHEM 15, 16, and 115; CHEM 133, 134, 135, 136, 201, 203, 210, 213, 222, 223, 235, 246, 247, 248, 249, plus nine hours of approved chemistry electives; MATH 15, 16, 17; Physics (PHYS) 11, 12. The nine hours of approved chemistry electives must be selected from the following courses: CHEM 192, 194, 202, 211, 212, 237, 239, 241, 244, 250, 314, 331, 332, 341, and Agricultural Biochemistry (AGBI) 210 or 310, subject to the restriction that only six hours of CHEM 192, 194 or 202, separately or combined, may be counted toward the nine-hour requirement. The following courses in other areas are recommended for consideration as general electives: AGBI 210; Computer Science C S 5, ENGL 208; MATH 18, 113; PHYS 124, 225; STAT 231. A 2.0 average must be maintained in all chemistry courses above CHEM 202. A C or better grade in all prerequisites for chemistry courses involved are chemistry courses, PHYS 12, MATH 16 and MATH 17.

Bachelor of Arts With a Major in Chemistry
The following courses are required: CHEM 15, 16, and 115, or CHEM 17 and 18; CHEM 133, 134, 135, 136, 141, 142, plus nine hours of approved chemistry electives: eight hours of non-chemistry electives from Cluster C and/or Engineering courses that include a lab, excluding other required courses; MATH 15, 16; PHYS 1, 2. The nine hours of approved chemistry electives must be selected from the following courses: CHEM 192, 194, 201, 202, 203, 210, 211, 212, 213, 222, 223, 235, 237, 239, 241, 244, 314, 331, 332, 341 subject to the restriction that only six hours of CHEM 192, 194, or 202, separately or combined, may be counted toward the nine-hour elective requirement.
A grade of C or better grade in all prerequisites for chemistry courses is required for chemistry majors; the courses involved are chemistry courses, PHYS 2, and MATH 16. Also, a 2.0 average must be maintained in all chemistry courses above CHEM 202.

**Options**

Students in the B.A. program may request to use AGBI 210 or 310 to meet part of the nine-hour chemistry elective requirement; however, at least three hours must be selected from chemistry courses numbered 210 or higher.

Students in the B.A. program may take CHEM 246, 247, and 248 in lieu of CHEM 141 and 142 and three hours of chemistry electives. CHEM 249 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**

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<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
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<td>MATH 16 (or 4)</td>
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<td>Phys Ed (optional)</td>
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**Second year**

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**Third year**

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**Fourth year**

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<td><strong>Total</strong></td>
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*Must include eight hours of Cluster C and/or engineering courses that include a lab excluding other required courses and excluding CHEM 192, 194, and 202.
### Suggested Chemistry (B.S.) Curriculum

#### First year

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#### Second year

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<td>CHEM 115 (if CHEM 15 &amp; 16 were taken) (or English 2)</td>
<td>4 (or 3)</td>
<td>CHEM 134</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 133</td>
<td>3</td>
<td>CHEM 136</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 11</td>
<td>4</td>
<td>PHYS 12</td>
<td>4</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
<td>Cluster Elective</td>
<td>3</td>
</tr>
<tr>
<td>MATH 17</td>
<td>4</td>
<td>Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
<td><strong>18 (or 19)</strong></td>
</tr>
</tbody>
</table>

#### Third year

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>CHEM 235</td>
<td>4</td>
<td>CHEM 210</td>
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<tr>
<td>CHEM 246</td>
<td>3</td>
<td>CHEM 248</td>
<td>3</td>
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<tr>
<td>Foreign Language</td>
<td>3</td>
<td>CHEM 247</td>
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<tr>
<td>Cluster Elective (and fine arts if CHEM 115 completed)</td>
<td>6 (or 9)</td>
<td>CHEM Elective</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16 (or 19)</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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#### Fourth year

<table>
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<tr>
<td>CHEM 201</td>
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<td>CHEM 203</td>
<td>1</td>
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<tr>
<td>CHEM 213</td>
<td>1</td>
<td>CHEM 223</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 222</td>
<td>3</td>
<td>CHEM Elective</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 249</td>
<td>2</td>
<td>General Electives</td>
<td>8 (or 6)</td>
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<tr>
<td>CHEM Electives</td>
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<td>Cluster Electives</td>
<td>3</td>
</tr>
<tr>
<td>General Electives</td>
<td>6</td>
<td><strong>Total</strong></td>
<td><strong>17 (or 15)</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Total Hours: 136</strong></td>
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</tr>
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</table>
Admission Requirements Students may be admitted to this curriculum at one of two points in their undergraduate program:

- The semester following the semester in which they complete 30 hours of coursework. Students admitted at this point must have a cumulative grade-point average (GPA) of 3.0 and have completed the following courses in the department with a combined GPA of 3.0: Communication Studies (COMM) 60, and 61.

- Any semester subsequent to the above. Students admitted at this point must have a cumulative GPA of 3.0; a combined GPA of 3.0 in all courses taken in the department; and a combined GPA of 3.0 in COMM 60 and 61.

Completion Requirements All students must complete a minimum of 36 hours of credit, 24 of which must be in communication studies, following the semester in which they are admitted to this program. Course requirements are Psychology 1 and 102, Statistics 101, and 30 hours of electives in communication studies beyond the six required for admission.

Applied Communication Studies

This curriculum is designed for students who plan careers in business or government organizations. It combines the general major in communication studies with a sequence of courses outside the department to prepare students for communication-related careers.

Admission Requirements Students may be admitted to this curriculum at one of two points in their undergraduate studies:

- The semester following the semester in which they complete 30 hours of coursework. Students admitted at this point must have a cumulative grade-point average (GPA) of 2.5 and have completed the following courses in the department with a combined GPA of 2.5: COMM 60, 61, and 160.

- Any semester subsequent to the above. Students admitted at this point must have a cumulative GPA of 2.5; a combined GPA of 2.5 in all courses taken in the department; and a combined GPA of 2.5 in COMM 60 and 61.

Completion Requirements All students must complete a minimum of 36 hours of credit, 24 of which must be in communication studies, following the semester in which they are admitted to this curriculum. Course requirements for both areas of emphasis outlined below are Psychology 1 and English 105 and 208. Students must also complete one of the following optional areas of emphasis:

Interpersonal and Organizational Communication: COMM 12, 106, 109, 110, 133, 206; 15 hours of communication studies electives drawn from COMM 14, 21, 80, 105, 107, 113, 120, 130, 134, 140, 180, 191, 221, and 230; Psychology (PSYC) 101 and 151 (or approved alternatives.)

Public and Mass Communication: COMM 14, 21, 80, 106, 180, 191, 221; 15 hours of Communication Studies electives drawn from COMM 12, 105, 107, 109, 110, 113, 120, 130, 133, 134, 140, 187, and 206. 230 and 6 hrs. of approved classes in related areas.

Graduation

Students must have 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 which 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 semester hours of credit. A total 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 departmental 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. COMM 11 and 12, COMM 11 and 14, or COMM 60 (3 hours) plus COMM 80, 106, and 109
(nine hours) are required. In addition, the student must complete COMM 21, 135 or 187 (three hours). Students must maintain an overall GPA of 2.0 in the courses counted toward the minor to be certified as a minor in communication studies at graduation.

**Computer Science**
George E. Trapp, Chairperson.
Wils L. Cooley, Associate Chairperson.

**Degree: Bachelor of Science**

**Nature of Program**

The Department of Computer Science and Electrical Engineering offers a major in computer science leading to a bachelor of science. The curriculum is designed to qualify students for professional positions in business, industry, research, government service, or graduate study in computer science.

The computer science major is intended to educate students in the following areas of computer science: mathematical procedures, programming languages, systems programming, and software engineering. After taking an upper-division course in these areas (C S 126, 136, 156, and 176), students are required to complete additional course work to satisfy the computer science software development track or the computer science theory track.

Normally, students are first admitted to the pre-computer science program of study. After meeting the requirements, the student then moves into the computer science program. This transition into the computer science program normally takes place at the end of the sophomore year.

**Admission Requirements**

**Computer Science Program of Study**

General requirements for admission to the pre-computer science program of study are that all prospective students must qualify for admission to WVU and to the Eberly College of Arts and Sciences and present secondary school credit for two units of algebra, one unit of geometry, and one-half unit of trigonometry or advanced mathematics or one unit of chemistry or physics.

**Additional Admission Requirements** Applicants must take either the standard ACT test or the SAT test. Automatic admission to pre-computer science is granted if any two of the three requirements shown below are met:

- A 3.0 grade-point average in high school.
- A mathematics ACT score of 22, or mathematics SAT score of 500.
- A composite ACT score of 22, or combined SAT score of 1010.

Applicants not satisfying these admission requirements may gain admission to pre-computer science as transfer students as described below.

**Transfer Students**

Students wishing to transfer into pre-computer science or computer science must satisfy WVU and Arts and Sciences admission requirements and must petition the Department of Computer Science and Electrical Engineering for admission. Petitions should be addressed to the Computer Science Academic Standards Committee with a transcript of all college level course work attempted and an indication of when the student wants to transfer to Computer Science.

Transfer students are expected to meet the following requirements:

- A grade-point average of at least 3.0 in all college-level work attempted; and
- Grades as listed in the next catalog section under “Computer Science Degree Program” for any of Computer Science (C S ) 15, 16, 26, 56, 76, MATH 15, and/or 16 that have been attempted.

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.

Admission to Computer Science Program

To be admitted to the bachelor of science degree program with a major in computer science, students must earn these minimum grades:

- A minimum grade of C in CS 15 before enrolling in either CS 16 or CS 56.
- A minimum grade of C in CS 15 and a minimum grade of C in MATH 15 before enrolling in CS 26.
- A minimum grade of C in CS 16 and at least one B in either CS 15 or 16 before enrolling in either CS 76 or CS 136.
- A minimum grade of C in CS 26, 56, and 76 and at least one B in one of these courses.
- A minimum grade of C in MATH 15, 16, and STAT 201.

Students are permitted to repeat only one course in the CS 15 and 16 sequence and only one course in CS 26, 56, and 76 group. The first grade in any repeated course will not be considered for the purpose of meeting departmental admission requirements.

Degree Requirements

A student must earn at least a C in every computer science course to be counted toward meeting degree requirements. Required courses for all computer science majors are MATH 15, 16; STAT 201; CS 15, 16, 26, 56, 76, 126, 136, and 176. Students complete additional degree requirements by satisfying the course requirements at the 200-level: at least one course from each of the following blocks must be taken: Systems (CS 256, 258, 266, 268); Applications (CS 236, 278, 286, 288); and Theory (CS 216, 228, 246, or an approved MATH elective). At least six hours of technical electives are also required: these may be any 200-level CS, MATH or CPE course with the exception of MATH 215, 231, 232. CS 210 is strongly recommended so that students can develop a working knowledge of C and C++.

Minor in Computer Science

Any student may take a minor in computer science by satisfying the following requirements:

- CS 15, 16, 26, 56, and 76; MATH 15 and 16; STAT 201; one course from among CS 126, 136, 156, 176.

A student must earn at least a C in every computer science, mathematics, and statistics course counted toward meeting the minor field requirements.

Economics

William N. Trumbull, Chairperson.

Degree: 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 the degree of bachelor of science with an economics major. The Eberly College of Arts and Sciences grants the 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 liberal studies and related requirements, students have in excess of 40 credit hours of unrestricted electives.
The student of economics is taught to identify the costs and the benefits of a decision, which are sometimes not obvious. The economist has the skills 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 burning 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:
  - Economics (ECON) 54, 55, and 125
- Completion of English (ENGL) 1 and 2.
- A semester of calculus (MATH 128 or 15) with a grade of C or better.

**Degree Requirements**

ECON 54, 55, 125, 211, and 212 must be taken. Any student planning to pursue graduate work in economics should take MATH 15 and 16. Additional recommended courses can be determined in consultation with an economics advisor.

Majors are also required to take 18 additional hours of economics courses numbered 100 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 211 and 212.

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: Economics 54, 55, 211, 212, and two upper division economics electives.

**English Language and Literature**

Patrick W. Conner, Chairperson.
Michael Grant, Associate Chairperson.
Marilyn Francus, Chief Department Advisor.

*Degree: Bachelor of Arts*

**Nature of Program**

The department offers courses 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 writing.

Students interested in undergraduate creative writing should speak with the supervisor 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 course work. To aid majors in their deliberations, the department has
prepared a statement explaining special features of its curriculum, informing students of the opportunity to double major, and suggesting courses for students interested in literary history, genre studies, language studies, creative writing, scientific/technical writing, Appalachian studies, women’s studies, and graduate study in English.

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 (ENGL) 1 and 2 and all required English courses taken prior to admission. (See list of required English courses under Degree Requirements 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 1 and 2. A maximum of 42 hours in English, exclusive of English 1 and 2, may be included within the 128 hours required for graduation.

Required Courses

English 21, 22, 24, and 25; one course from English 111, 113, 210, 211; English 150 or 250; at least 15 additional hours of upper division courses offered by the Department of English in literature, language, or writing; at least nine hours of the student’s total course work must be at the 200 level. Students entering the English major program after July 1997 must earn a grade of C or better in all courses which are counted toward the major plus English 1 and 2.

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 English 1 and 2 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:

1. One course, with a grade of at least C, from among Fiction, English 114; Poetry, English 115; or Non-fiction, English 116
2. With permission of the instructor, one course from among Workshop in Fiction, English 201; Workshop in Poetry, English 202; or Workshop in Non-fiction, English 203.
3. With permission of the instructor, Topics in Creative Writing, English 271.
4. With permission of the Department of English creative writing committee, Creative Writing Senior Seminar, English 273.
5. One additional course from among those listed in category 1 (which may be taken at any time) or from category 2 (which must be taken at any time after the completion of one of the courses in category 1.)

English majors may obtain a concentration in creative writing by fulfilling the requirements for a minor in creative writing.

Publications

*The Eighteenth Century: Theory and Interpretation,* a journal of literature, culture, and history from 1660 to 1800.

*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 on-line literary magazine.

JAMESF-L, an electronic discussion group, is devoted to scholarship on the James family, including Henry, the novelist, and William, the philosopher and psychologist.

WOOLSN-L, an electronic discussion group, is devoted to scholarship on Constance Fenimore Woolson and her circle.
ANSAXNET, an electronic discussion group, is devoted to scholarship in early Medieval studies.
NASSR-L, an electronic discussion group, is devoted to scholarship in British Romantic studies.

Foreign Languages
Frank W. Medley, Jr., Chairperson.
Marilyn Bendena, Associate Chairperson.

Degree: Bachelor of Arts

Majors Within the Degree Program
French German Russian Spanish Linguistics /TESL
FLIT (Foreign Literature in Translation)

Nature of Program
Course work is offered in foreign literatures and cultures, linguistics, and foreign languages, including Chinese, French, German, Italian, Japanese, Latin, Russian, and Spanish. Literature courses taught in English are designated FLIT (Foreign Literature in Translation) courses. Other areas of instruction are ESL (English As a Second Language), language teaching methods, and bibliography and research.

Depending upon the major in foreign languages, students are expected to be able to communicate, through reading, writing, speaking, and listening, in one or more foreign languages. Students must be conversant in the cultures and literatures related to those languages and have a general understanding of how human languages operate. The Department of Foreign Languages cooperates closely with other departments to offer interdepartmental majors.

Honor Societies
The department sponsors student honor societies in French, Russian, and Spanish and supports language clubs in French, German, Japanese, Russian, and Spanish.

Special Units
In the department, the WVU Intensive English Program offers a program of instruction in English as a second language for students seeking admission to the University. Practical experience for majors in teaching English as a second language is available on a limited basis in conjunction with this program.

Career Goals for Graduates
In addition to foreign language teaching, students may use foreign language study to enhance their primary degree, adding an international dimension to business, economics, political science, journalism, law, etc.

Admission Requirements
The Department of Foreign Languages uses the requirements of the University. To major in foreign languages, students must have satisfactorily completed elementary and intermediate course sequences in a given language and completed 58 credit hours with an overall 2.0 grade-point average.

Graduation Requirements
A foreign language major must complete a minimum of 27 hours of upper-division work offered by the Department of Foreign Languages. Three of the hours must be Linguistics 111. Language 221 cannot be counted for any major except linguistics/TESL. Twenty-one of the hours must be in one of the areas listed in the Areas of Emphasis section which follows.

All students majoring in foreign languages must present another major, an official Eberly College of Arts and Sciences minor, or an approved concentration of course work that complements their major. The requirement for this secondary concentration may be met in one of four ways:
1. Completion of twelve hours of upper-division credit, from within or outside the Department of Foreign Languages, with the same division prefix. (e.g. GER, HIST, BUS, PSYCH, FLIT). The courses that constitute the 12-hour secondary concentration are subject to the availability of courses, must be approved by the student’s advisor, and may not include courses required for the student’s major.

2. Completion of twelve hours of upper-division credit in the major area or from a combination of division prefixes that together focus on a common topic or subject area that complements the major area of study (e.g. French history, French art, French music). The courses that constitute the 12 hours in this option are subject to availability, must be approved by the student’s advisor, and may not include courses required for the student’s major.

3. Completion of an approved minor. Requirements are set by the academic unit offering them and include a minimum of 15 hours of course work, with a minimum of nine hours at the upper-division level.

4. Completion of a second major.

Students obtaining a major in foreign languages at West Virginia University must complete a minimum residency requirement of twelve upper-division hours on campus in their major language of study, excluding courses numbered 191 and courses obtained through credit by examination.

In addition to the courses required for the foreign language major, students should elect relevant courses in history, political science, humanities, English, journalism, geography, sociology and anthropology, and/or business and economics.

Students with majors other than foreign languages who are interested in a second major in foreign languages should request information from the chairperson of the Department of Foreign Languages. Students wishing to teach should inquire early in their program about courses to fulfill certification requirements. No special core or GPA requirements are necessary for graduation beyond those of the University. Students are urged to contact the Arts and Sciences Advising Office at least a semester in advance of their graduation.

**Areas of Emphasis**

In addition to fulfilling the degree requirements already listed, a language major must select one of the following areas and complete the courses listed as part of the 27 hour, upper-division requirement:

- **French:** 103, 104, 109, 110, and three additional upper-division FRCH courses.
- **German:** 103, 104, 109, 110, and three additional upper-division GER courses.
- **Russian:** 103, 104, 109, 110, and three additional upper-division RUSS courses.
- **Spanish:** 103, 104, 109, 110, and three additional upper-division SPAN courses.
- **Linguistics/TESL:** LING 202, 283, LANG 221, 292 (Readings in TESL) and three additional upper-division LING or LANG courses approved by the advisor.
- **Foreign Literature in Translation:** Six upper-division FLIT courses and two upper-division language courses approved by the advisor.

Students electing the French, German, Spanish, Russian, or linguistics/TESL areas may not use FLIT courses to fulfill the major requirements but may use them for the secondary concentration. No undergraduate ESL course may count in the undergraduate foreign language major.

**Programs Abroad**

The Department of Foreign Languages regularly offers language courses abroad. Currently, courses in German are offered in Germany during the summer, in Spanish in Spain, and Mexico during the summer, in French in France during the summer. Students participating in a summer program normally register for six to nine credit hours.

Contingent upon funding and faculty availability, the Department of Foreign Languages will offer similar programs in the period 1999-2001.
Dual Degrees in Business and Foreign Language

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. For details, contact the Department of Foreign Languages.

Minor

Students in the Eberly College of Arts and Sciences may complete an academic minor in foreign languages. The minor consists of 15 hours of coursework and is available in six areas (foreign literature in translation, French, German, linguistics, Russian, and Spanish). Students must achieve at least a 2.0 grade-point average in courses for the minor.

Requirements for a minor in French, German, Russian, and Spanish include 103 and 104 or 109 and 110 and nine additional upper division hours in the same language; LING 111 may be counted among the nine hours.

The linguistics minor requires Linguistics 111, 202, 283, and six additional, approved, upper-division hours in foreign languages.

The foreign literature in translation minor requires 15 upper-division hours in FLIT, including courses in at least two different national literatures.

Note: Do not count these courses toward the minor: any 191-level teaching practicum, ESL 191, and LANG 221. FLIT 191 courses count toward the minor in foreign literature in translation.

Additional Points of Information

- Foreign language courses are divided into elementary, intermediate, and advanced levels. The elementary level, courses 1 and 2, provides 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 3 and 4, 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 103, 104, 109, and 110, 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 10 are intensive and equal to courses 1 and 2. Students may receive credit for either course 1 and 2 or 10 but not for both. Courses numbered 11 are the intensive equivalent of courses 3 and 4. Students may receive credit for courses 3 and 4 or 11 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 3 and 4, or other approved courses on the same or higher level, in that language.

- The Department of Foreign Languages offers a credit by examination testing 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.

- 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 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 course work in the languages at WVU.
Forensic Identification: 
Latent Fingerprint Identification
Michael Yura, Program Director.

Degree: Bachelor of Science in Forensic Identification (B.S.F.I.)

Nature of Program
The Forensic Identification program is comprised of two majors: Latent Fingerprint Identification and Biometrics Systems. The Latent Fingerprint Identification program is designed to provide background in the physical and biological sciences associated with forensic identification, such as effective methods of collecting, processing, and identifying trace evidence from crime and disaster scenes, securing unidentified fingerprints, and identifying fingerprints using AFIS (Automated Fingerprint Identification System) technology. This course of study was developed through the efforts of the Federal Bureau of Investigation (FBI) and West Virginia University in cooperation with professional associations such as the International Association for Identification (IAI). The program draws on faculty expertise in a variety of disciplines including chemistry, physics, biology, computer science, electrical engineering, computer engineering, pathology, biochemistry, dentistry, law, and others. Students completing the program will earn a Bachelor of Science in Forensic Identification (B.S.F.I.) conferred by the Eberly College of Arts and Sciences.

The Biometric Systems major is offered through the College of Engineering and Mineral Resources and is described in that section of the catalog.

Admission Requirements
Students interested in the Latent Fingerprint Identification program will be admitted as pre-program majors as freshmen and sophomores. Strong high school preparation in biology, chemistry, physics, algebra, trigonometry, and pre-calculus is recommended. Computer literacy is also strongly recommended. Minimum university requirements are required for admission to the pre-program.

Students who wish to enter the program must apply for admission and must have completed or be enrolled in courses listed below under pre-program requirements. Because of the individualized instruction in classrooms, laboratory-based fingerprint courses, and internships, enrollment is limited. Applicants must have a minimum cumulative GPA of 3.0 in the pre-program requirements. Other requirements include strong letters of recommendation focusing on personal integrity and character. 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 admissions committee will interview selected students prior to their selection into the program.

Degree Requirements
The first two years of the program provide a preparatory curriculum shared in part with the Biometric Systems major (listed in College of Engineering and Mineral Resources). The final two years are comprised of specific courses in fingerprint technology, courtroom testimony, crime scene analysis, and a capstone seminar in forensic identification. Between the junior and senior years, a forensic internship will be completed at various law enforcement sites.

Required Pre-Program Coursework
Biology 15, 17, and 19; Chemistry 15, 16, 133, 134, 135, and 136; Computer Science 5; English 208; Math 15; Philosophy 10; Physics 1; Psychology 1; Speech pathology and Audiology 80; Statistics 1; Introduction to Forensic Identification.

Latent Fingerprint Identification Curriculum
The Latent Fingerprint Identification curriculum requires completion of AGBI 210; Chemistry 115; English 208; Pharmacy 249 and 362; and the following new courses being developed for the program: Science and Technology of Fingerprint Identification, Statistics for Forensic Identification, Trauma and Stress, Advanced Computer Imagery; Crime Scene Analysis, Experimental Physical Chemistry, Evidence and Law, Forensic Journal, Testimony and Moot Court, Trace Evidence and

Upon satisfactory completion of the junior year, the student will submit an application for placement in an approved internship site. The placement coordinator will submit the student’s internship application materials to the requested site(s) for review. The agency reserves the right to reject any student twelve weeks in length. The supervisor will submit an evaluation form to the faculty responsible for grading the student. Because of the competency nature of the internship, and S (satisfactory) or U (unsatisfactory) will be submitted as the grade for the internship.

Performance Requirements
To maintain status as a major and to graduate, students must maintain a minimum overall GPA of 2.5 and complete all required courses each term with a grade of at least C (or P in courses offered only on a Pass/Fail grading basis). 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.

Suggested Curriculum
First year
<table>
<thead>
<tr>
<th>First Semester Hrs.</th>
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<tbody>
<tr>
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<td>PHIL 10 .............</td>
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<td>SPA 80 ..............</td>
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Second year
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<td>BIOL 19 .............</td>
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<tr>
<td>CHEM 133/135 .......</td>
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<tr>
<td>CS 5 .................</td>
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<tr>
<td>Intro. to Forensic Science</td>
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<td>LSP Cluster B Elective</td>
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Third year
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<tr>
<td>CHEM 115 ............</td>
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<tr>
<td>Statistics for Forensic ID</td>
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<td>Science/Tech. Fingerprint ID</td>
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<td>Trauma and Stress ....</td>
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Fourth year
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<td>Forensic Journal Club</td>
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<tr>
<td>Evidence and Law ....</td>
<td>3</td>
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<tr>
<td>Testimony and Moot Court</td>
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<tr>
<td>Trace Evidence/Blood Spatter</td>
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</tr>
<tr>
<td>Laboratory Quality Assurance</td>
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<tr>
<td>Field Experience ....</td>
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Recommended Cluster A electives: HIST 207, PHIL 13, PHIL 158.
Geology and Geography
Trevor M. Harris, Chairperson.
Robert E. Behling, Associate Chairperson in Geology.
Ann M. Oberhauser, Associate Chairperson in Geography.

Degrees:
- Geography major: Bachelor of Arts
- Geology major: Bachelor of Science
- Geoscience major: Bachelor of Arts

Geology
Bachelor of Science
The bachelor of science degree is designed for students interested in geology positions within either the private or public sector, as well as most 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 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 elect some 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 petroleum industry should complete a full year of calculus.

Instructional facilities and equipment include laboratories for mineralogy, petrology, geochemistry, sedimentology, paleontology, hydrogeology, geophysics, geomorphology, mineral and fuel resources, and structural geology. Field studies are stressed in upper-level classes, capped by a 6 credit field course examining folded and faulted sedimentary rocks and hydrogeology in southeastern West Virginia and igneous and metamorphic rocks along the coast of Maine. Other recent field classes have focussed on carbonate depositional environments in the Florida Keys 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 Morgantown Energy Technology Center 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.

Degree Requirements—B.S.
A total of 128 hours is required including 40 hours of geology courses but excluding GEOL 7, 8 and 161.

Required Courses for a B.S. with a major in geology: GEOL 1, 2, or 10, 11 (or GEOG 10, 11) 3, or 6, 4, 184, 185, 221, 231 or 252, 253, 261, 263, 266, and five hours of upper-division geology electives; CHEM 11 and 12, or 15 and 16; PHYS 1 and 2, or 11 and 12; STAT 101; MATH 3, and 4; MATH 15 and 16, or MATH 15 and GEOL 161; or, MATH 15 and two of the following: STAT 212, STAT 221, STAT 231, and CS 5.

Recommended Electives: GEOL 127, 251, 255, 270, 272, 273; GEOG 105, 107, 250, 252, 255; CS 1; CE 1; additional biology, chemistry, physics, soil science, or mathematics courses.

An average of at least 2.0 must be attained in required chemistry, physics, mathematics, and statistics courses and in required upper-division geology courses.

Admission Requirements—B.S. Degrees
Admission to the program requires at least a cumulative average of 2.00 and an average of at least 2.00 in lower-division geology courses.
Minor in Geology

Anyone interested in a geology minor is urged to contact the department. Recognizing that the science of geology is a composite of many scientific disciplines applied to the study of the earth, students who seek a minor must complete ten hours chosen from among adjuncts in math, science, computer science, or statistics. Additionally, one upper division course in geology must be a lab course.

Requirements for the Minor

Sixteen hours of Geology courses. 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 Geology/Geography program 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, including the College requirements. A minimum of 34 hours must be taken from the following list of geology and geography courses including the 21 required hours plus a minimum of 6 hours at the 200 level selected from the elective list. No more than 50 hours of geology/geography courses can be used for the B.A. degree. In addition to the 34 hours of geology/geography courses that must be taken from the following list, students may select additional geology/geography courses either from the elective list or from the undergraduate catalog.

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 (21 hours) GEOL/GEOG 10, 11 or GEOL 1, 2, GEOL 3, 4, GEOG 7, GEOL 100, GEOG 105, GEOG 215.

Elective Courses (13 hours): GEOL 7, GEOG 107, GEOL 127*, GEOG 127*, GEOL 163, GEOG 200, GEOG 205, GEOL 215, GEOL/GEOG 221, GEOG 250, GEOL/GEOG 252, GEOL/GEOG 255, GEOL 263, GEOL 294.
*Credit can be earned for either GEOL 127 or GEOG 127 but not for both.

Required Courses Outside the Department (17 hours) CHEM 11, 12 or CHEM 15, 16 or CHEM 11 and PHYS 5; MATH 3, 4; POLS 236* or 238*.
* Either course can be used to fulfill the College writing course requirement.

Restricted Electives (15 hours) ACCT 51, 52, ARE 110, 192, AGRN 102, 103, BIOL 1, 2, 3, 4, CHEM 131, CS 5, 15, ENGL 208, HIST 184, MATH 15, 128*, STAT 101, 102.
* Credit cannot be obtained for both MATH 15 and MATH 128

Geography
Nature of Program
Geography as an undergraduate major provides the knowledge and skills needed to analyze regions, nations, and the globe by applying concepts related to environment, society, and spatial dynamics. This knowledge allows geographers to understand the complex relationship between the natural environment and human activities and their expression on the earth’s surface at different scales. Geography students receive specialized education in one of the program’s four areas of emphasis: urban planning, rural and regional development; Geographic Information Systems (GIS), analysis and remote sensing; natural resources, environment and development; and international area studies. In exceptional cases with the approval of the geography faculty, a student may design a unique program that combines elements of the four emphasis areas.

Geography graduates qualify for careers in the private and public sectors. Business and industry hire geographers as business location and market analysts, environmental impact consultants, cartographers, and geographic information systems (GIS) analysts. In government, education, and research, geographers 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, cartographers, and GIS analysts. Some graduates 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 pursue further training and research, most commonly in geography, planning, or meteorology.

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.
Required Courses for a Major in Geography: GEOG 2, 7, 8, 99, 105, 109, 110 140, 250 or 161, and seven or eight hours of geography electives.

Areas of Emphasis
Urban Planning, Rural, and Regional Development An emphasis in planning and regional development prepares students to participate in the social and spatial processes influencing contemporary urban and regional development. Students are exposed to issues such as community development, uneven development, third world planning, land-use planning, urban revitalization, gender studies, rural planning, and policy formation. Students are equipped with a background for careers or advanced study in economic development, urban or regional planning, industrial
development, community organization, and environmental planning. In addition, students are strongly encouraged to participate in the internship program to give them practical experience in planning and regional development. Finally, students in this option follow an urban, rural, or regional development track or may construct their own program that includes courses from each track.

**Urban recommended courses:** GEOG 212, 225, 250, 295, and one regional course from either 141 or 143.

**Suggested courses in other disciplines:** ECON 257, POLS 120, SOCA 131, 222.

**Rural recommended courses:** GEOG 211, 221, 230, 295, and one regional course from either 141 or 143.

**Suggested courses in other disciplines:** POLS 120, SOCA 223.

**Regional Development recommended courses:** GEOG 209, 211, 212, 295, and two regional courses 141 and 143.

**Suggested courses in other disciplines:** ECON 255, POLS 120, SOCA 223.

**Geographic Information Systems, Analysis, and Remote Sensing** This emphasis provides a foundation in the theory and practice of geographic data handling, focusing on 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 GIS, imaging processing of remotely sensed data and spatial models. The geographical analysis approach provides instruction in the capture of data from field survey, aerial photography, satellite imagery, and other digital sources. Mapping, computing skills and statistical applications are used to explore the significance of spatial patterns and processes. The department has state-of-the-art laboratories and computer software for practical training and education in GIS and remote sensing. Career opportunities for geographic analysts and cartographers exist in planning, engineering, utility, transportation, and retail firms as well as in-state and federal agencies.

**Recommended courses:** GEOG 200, 215, 225, 250, 252, 255, and 261. Suggested courses in other disciplines: FOR 140, 226; MATH 15, 16; STAT 101, 201, 221, 231; C E 5, C S 5, 15, 16, 26, 76, 170, 288; ECON 54, 55, 125, 255; ENGL 208; AGEC 200, 211; ART 121, 123; I E 250, 281, 284; LARC 265; MANG 101, 102; PHYS 8.

**Natural Resources, Environment, and Development** Rapidly expanding interest in global change and sustainable development puts geographers in a good position to analyze the conservation, use, and destruction of environmental systems. This area emphasizes interaction between natural resources, the physical environment and socio-economic development in first and third world regions. It provides training for students interested in problems concerning physical geography, conservation of natural resources, environmental impact on economic development, and strategies for sustainable resource utilization. The theory and practice of political ecology is also integral to this approach. Tools such as GIS are available for analyzing environmental problems resulting from the exploitation and management of energy, mineral, land, and water resources.

**Recommended courses:** GEOG 10, 107, 151, 200, 211, 215, 221, 230, 250, 252, 255, and 295.

**Suggested courses in other disciplines:** GEOL 1, 2, 3, 4; BIOL 254; CHEM 11, 12; C E 5, 252; ENGL 208; FOR 140, 226; MATH 4; MER 97; POLS 236, 238; STAT 101; C S 1, 2, or 5.

**International Area Studies** The international arena has changed dramatically in recent decades with major political transitions, economic restructuring, and social upheaval. Geography plays an important role in analyzing these global and regional shifts. International area studies 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 considers specific regional problems and global issues, nationalism, development, the international division of labor and gender issues. The geography program has particular strengths in the study of southern Africa and Europe.
Recommended courses: GEOG 141, 143, 202, 209, 210, 211, 212, 215, 295.
Suggested courses in other disciplines: ECON 54, 55, 110, 213, 250; ENGL 208; HIST 4, 5, 6, 180, 264; POLS 3, 150, 160, 261, 264; SOCA 51, 155, 156; TE 280; MDS 90.

Individual Program of Study
In exceptional cases, and with the approval of the geography faculty, a student may design a unique program of study consisting of a minimum of 33 hours of geography. The student’s advisor arranges and directs the individualized program. No more than six hours of GEOG 219 and 295 will be allowed.

Internship
An internship is a field-based academic experience that uses the work place as an extended classroom. As part of their internship, students usually spend several summer months working at a public agency, private business, or in some cases a non-profit organization. During this period, the interns work under the supervision of a professional in their designated areas. These areas include land use planning, environmental assessment, resource management, economic development, and geographic information systems. Internships are invaluable in today’s competitive job market where work experience is considered an important credential. The professional learning experience is recommended for majors in geography with at least 45 total hours and 12 hours in geography.

Geography Minor
Any student admitted to a degree program in the University may complete a minor in geography. The minor consists of 15 hours of course work and is available in five areas (urban planning, rural and regional development; GIS and remote sensing; natural resources and environment; international area studies; and general). Students must achieve at least a GPA of 2.0 in the 15 hours taken for the geography minor. Requirements for a minor include GEOG 2 or 8, 7, and nine additional hours in courses related the student's specific area.

Honors Program
Qualified students in geography are encouraged to participate in the department’s Honors Program which begins either the second semester of the junior year or the first semester of the senior year and culminates in a senior thesis. Entry requires a 3.3 overall average. (See the department’s Honors Coordinator.)

History
Robert M. Maxon, Chairperson.
Robert E. Blobaum, Associate Chairperson and Director of Graduate Studies.
William S. Arnett, Director of Undergraduate Studies.
Elizabeth A. Fones-Wolfe, Phi Alpha Theta Advisor.

Degree: Bachelor of Arts

Program Objectives/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.

Admissions and Degree Requirements
In their freshman and sophomore years, those selecting a major in the department are classified as pre-history. They may be admitted to the major upon the completion of 58 hours with an overall grade-point average of at least 2.2. Majors should also have attained at least a 2.2 average in history courses. To graduate, majors must meet University and College requirements for the bachelor of arts degree. The department requires the following:
• History majors must complete a total of 33 hours of work in history. They must choose 12 hours from the introductory courses numbered below 100, take History 290, and take 18 hours of upper-division classes (numbered 100 or above) with nine hours each from two of the following three areas: United States and Latin America; Africa, Asian, Europe; and history of science and technology. One course should be taken in African, Asian, or Latin American history.
• History majors must complete a formal minor of at least 15 hours in another related field outside history in 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 achieve a 2.2 GPA for all courses attempted in the major subject and at least a C in each history course offered in satisfaction of departmental requirements.

Minor in History
Any student may take a minor in history. Such a minor consists of any 15 hours of courses in history, with a minimum of nine at the upper-division 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
Richard Montgomery, Coordinator.

No degree.

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, what our options for significant life are.

Individualized Major Program
Major in Interdepartmental Studies
Nicholas G. Evans, Coordinator.

Degree: Bachelor of Arts
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 104 Student Services Center.

International Studies
Rodger D. Yeager, Director.
Joe D. Hagan, Associate Director.
Paul D. Hoyt, Advisor.

Degree: Bachelor of Arts
Major in Interdepartmental Studies

Nature of Program
The bachelor of arts major in international studies provides knowledge of world affairs, helps to develop an understanding and appreciation of other cultures and societies, and promotes informed analysis of global interdependencies. The program establishes a basis for careers in international administration and service, business and commerce, government, law, research, and education.

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
The international studies major consists of courses drawn from several disciplinary and interdisciplinary study areas. The program encompasses five components: Orientation to International Studies (one hour).

Introductory Core (12 hours)—The introductory core is intended to prepare students for advanced study in the major. Majors are required to take Economics 54 Microeconomics and Economics 55 Macroeconomics, and two additional courses selected from the following: ENGL 85; FLIT 13–18; GEOG 2, 7, 8; HIST 2, 4, 5, 6, 8, 80; HUM 5, 20; MDS 90; POLS 3; SOCA 5 or 51.

Advanced Core (12 hours)—The advanced core is intended to prepare students for geographically and topically specialized study in the major. Majors are required to take four courses selected from the following: ECON 110*, 250*; GEOG 202, 210, HIST 180, 263, 264; POLS 150, 160, 160, 264, 268.

Foreign Languages (18 hours; or six hours beyond those required by the Eberly College of Arts and Sciences)—Except for students employing English as a second language, majors are required to complete a three-year sequence of foreign-language courses or demonstrate equivalent competency in a language approved by the major. Three-year sequences are regularly offered in the following languages:
- French (1, 2, 3, 4, 103 and 104, or 109 and 110)
- German (1, 2, 3, 4, 103 and 104, or 109 and 110)
- Japanese (1, 2, 3, 4, 103 and 104, or 109 and 110)
- Russian (1, 2, 3, 4, 103 and 104, or 109 and 110)
- Spanish (1, 2, 3, 4, 103 and 104, or 109 and 110)

Majors are also encouraged to take additional coursework in these languages and in others which may be offered. Some of this additional language study may be applied to help satisfy other program requirements. Students employing English as a second language are exempted from the foreign-language requirement. Instead,
these students must complete 15 hours in the introductory core and 15 hours in the advanced core.

*Required for students taking International Business Studies area of emphasis.

Area of Emphasis (21 hours). Majors are required to select an area of concentration for specialized advanced study. The area may represent a world region (such as Africa and the Middle East, the Americas, Asia, or Europe), or the topical subject of development studies or international business studies. No more than nine hours out of the required 21 may be taken in the same department, and for the purposes of international studies, all FLIT and foreign language courses are treated as courses in one department. In their individual areas of concentration, majors select from a variety of courses in economics, foreign languages, geography, history, music, philosophy, political science, religious studies, sociology and anthropology, and technology education/women’s studies.

Academic Advising

All international studies pre-majors and majors, including students enrolled in the University Honors Program, are advised by designated faculty in the international studies program.

Options: Internships and Study Abroad

Students are encouraged to take advantage of opportunities for professional internships and study abroad, which may be undertaken for academic credit 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 advisors.

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 110, 250; GEOG 202, 210; HIST 263, 264; POLS 150, 160, 264, 268.
- Completion of four upper-division courses (12 hours) outside the discipline of the major, in one of the following areas of concentration in international studies. In each area of concentration, courses must be taken in at least three departments. This requirement is intended to broaden students’ awareness of their areas of concentration in the minor, beyond the perspectives of single academic disciplines. For the purposes of international studies, all FLIT and foreign language courses are treated as courses in one department.

**Africa and the Middle East.** ECON 213, FLIT 166, GEOG 143, 211, HIST 227, 228, 229, 230, MUSC 230, POLS 256, 258, RELG 132, SOCA 156, T E 245 (cross-listed as WMST 145).

**The Americas.** ECON 213, FLIT 151, 152, 166, 171, GEOG 140, 211, 266, HIST 141, 142, 209, 210, POLS 255, 267, SOCA 155, SPAN 131, 132, 201, 202, 292, T E 245 (cross-listed as WMST 145)

**Asia.** ECON 213, FLIT 211, 221, GEOG 145, 211, HIST 225, 226, PHIL 122, POLS 250, 254, 269, RELG 130, 131, T E 245 (cross-listed as WMST 145)

Development Studies. ECON 213, GEOG 143, 144, 145, 209, 211, 212, 266, HIST 142, 209, 211, 225, 228, 230, POLS 254, 255, 256, 258, SOCA 155, 156, TE 245 (cross-listed as WMST 145).

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.

Liberal Arts and Sciences Major
Ann Paterson, Coordinator.

Degree: Bachelor of Arts
Major in 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 the liberal arts and sciences graduate 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 course work including MATH 3, with a minimum grade-point average of 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:

Cluster A Humanities—Group I: Art, Music, Theatre, English Literature or Foreign Literature in Translation—three hours lower division and three hours upper division.
Group II: History or Humanities—three hours lower division.
History, Humanities, Foreign Languages—three hours upper division.
Group III: Philosophy—three hours lower division. Philosophy or Religious Studies—three hours upper division. Six additional hours of upper division coursework must come from one of the above humanities groups, I, II, or III.

Cluster B Social Sciences—Communication Studies, Psychology, Sociology & Anthropology—nine hours lower division and six hours upper division; Economics, Geography, Political Science—nine hours lower division and six hours upper division.

Cluster C Mathematical Sciences—ten hours lower division and six hours upper division, including MATH 3 (or equivalent).

Physical or Life Sciences: Eight hours lower division and six hours upper division, including two lab sciences. Students also complete MDS 3 Library Science.

Concentration
Fifteen hours of upper division work must be completed. 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.
Mathematics
Michael Mays, Interim Chair.

Degree: Bachelor of Arts

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.

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 scores. The placement examination is given during orientation for freshman and transfer students and during the first week of each academic term. Students intending to take the placement examination at the beginning of a term should notify the Department of Mathematics on or before the day the test is given. Sign-up sheets are in room 320, Armstrong Hall.

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 15, MATH 16, and MATH 163 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 163 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 40 hours of approved courses in the mathematical sciences. The required courses are: MATH 15, 16, 17, 18, 163, 141, 143, 220, 251, and three additional upper-division courses. These three courses may be selected from those numbered above 100 with the exclusion of MATH 128, 131, 133, 231, 232, and 255 and with the inclusion of STAT 201, or 261 and 262. These electives should be selected after consultation with the departmental advisor. Any substitutions in the list of required courses must be approved by the Mathematics Academic Standards Committee.

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 100. 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 220. 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 15, 16, 17, 163; at least one course chosen from among MATH 141, 143, 181, 251; two additional courses chosen from those numbered above 100 with the exclusion of MATH 128, 131, 133, 231, 232, 269.

**Track Two**
MATH 15 16, 17, 18; at least one course chosen from MATH 213, 215, 220, 256; two additional courses chosen from those numbered above 100 with the exclusion of MATH 128, 131, 133, 231, 232, 269.

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.

Learning Center

The Department of Mathematics offers free help to students in mathematics courses through its Learning Center, located in 301 Armstrong Hall. The Learning Center has two components, the study hall and the computer/video lab.

The study hall, located in 303 Armstrong, is staffed by graduate students in mathematics. It provides a study area and drop-in tutoring service designed primarily for students enrolled in the pre-college algebra workshop and lower-level mathematics courses through calculus.

The computer/video lab has instructional software and videotapes which students can use on-site to assist them in their coursework or in learning fundamental concepts. Materials are currently available covering algebra, calculus, and geometry review.

Hours are posted at the beginning of each semester and announced in mathematics classes. The phone number is (304) 293-7273.

Philosophy

Richard Montogomery, Chairperson.

**Degree: Bachelor of Arts**

Nature of Program

The word “philosophy” originally meant love of knowledge; now it means the investigation of fundamental questions that have puzzled human beings for ages. Philosophy deals with such questions as: What is the ultimate nature of reality? What do we really 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 the self? Is there a God, and how might human beings come to have knowledge of God? What is the ideal form of government? Typically, the philosophy student studies the history of basic views about knowledge, the world, and human nature. The student also develops logical skills to deal with specific philosophical issues relevant to life, such as current moral problems.

Philosophy is a discipline that raises questions about the foundations of other disciplines. Thus, within the general field of philosophy, there is the philosophy of science, the philosophy of religion, the philosophy of history, the philosophy of art, and so on. By its nature, philosophy tends to be interdisciplinary. Majors often find that it is helpful to combine the study of philosophy with a concentration of courses in another area.

Those who desire careers in the teaching of philosophy will need the Ph.D. degree. Being a philosophy major is also excellent preparation for advanced study in a number of other areas, including law and business. The philosophy major develops critical reasoning and writing skills and an ability to analyze problems from a variety of perspectives.
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.

Degree Requirements
A major in philosophy requires 30 hours in philosophy, including 18 hours of upper-division work. The following courses are required: Philosophy 10, 20, 120, 104 or 108, 166 or 171, and 195 or 196. Students who enroll for Philosophy 195 must have previously completed at least 12 hours of courses in philosophy, at least six hours of which are at the 100 level or above, and they must have junior or senior standing. Students who enroll for Philosophy 196 must have senior standing.

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. Majors planning to do graduate work in philosophy are strongly urged to take Philosophy 106.

A department advisor will help students select philosophy electives and courses from other departments suited to students’ specific educational goals and interests.

Minor in Philosophy
Any student admitted to a degree program in the Eberly College of Arts and Sciences 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 division level. Students must attain at least a 2.0 average in courses for the minor.

Pre-Law Area of Emphasis in Philosophy
The course of study for a pre-law philosophy major includes the following: 

Requirements for all philosophy majors: Philosophy 10, 20, 104 or 108, 120, 166 or 171, and 195 or 196. Students who enroll for Philosophy 195 must have previously completed at least 12 hours of courses in philosophy, at least six hours of which are at the 100 level or above, and they must have junior or senior standing. Students who enroll for Philosophy 196 must have senior standing.

Additional required courses for pre-law: Philosophy 13, 150, 172, and one upper-division elective.

Physics, Astronomy, and Physical Science
Larry E. Halliburton, Chairperson.

Degrees: 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, or engineering. Some students accept a position in industry or in a government laboratory immediately after completing the bachelor of science. This degree program provides a comprehensive grounding in the fundamentals of physics and is usually accompanied by participation in one of the active research programs within the department.

The bachelor of arts degree is more flexible. By allowing more free elective choices, it prepares a student for a career that combines a science background with subsequent professional training. Typical career paths for this degree program include secondary education, medical school, patent law, forensics, health physics, environmental engineering, journalism, government policy, and business management. One important area of emphasis for physics majors pursuing a bachelor of arts is computational physics (i.e., a combination of physics and computer science).
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 bachelor of arts and to the bachelor of science in physics program requires, in addition to college requirements, at least a 2.5 grade-point average (GPA) in all required introductory physics and mathematics courses (which must include Physics 11, 12, Mathematics 15, 16 or their equivalents).

Degree Requirements

The B.A. degree requires a minimum of 128 hours. This includes: 30 hours of University requirements (English 1, 2; LSP A & B); 15 hours of Eberly College of Arts and Sciences requirements (fine arts; language); and 53 hours in Physics Department requirements (29 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 2 (physics section), Physics 11, 12, 124, 231, 233, 241 (2 hrs.), and nine hours electives; in mathematics: Mathematics 15, 16, 17, 18; in science: eight hours from biology, chemistry, and/or geology. In addition students have at least 38 hours of unrestricted free electives which can be used to prepare for entry into a professional program (teaching, law, medicine, for example) or into the job market.

The B.S. degree requires a minimum of 128 hours. This includes: 30 hours of University requirements (English 1, 2; LSP A & B); and 70 hours in physics department requirements (43 in physics, eight in 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 2 (physics section), Physics 11, 12, 124, 231, 233, 232 or 234, 241 (2 semesters), 251, 283, plus 12 hours electives; in mathematics: Mathematics 15, 16, 17, 18; in science: eight hours from biology, chemistry, and/or geology. In addition, students have at least 28 hours of unrestricted electives which can be used to prepare for entry into a graduate or professional school (physics, engineering, medicine, etc.) or towards a second degree.

The area of emphasis in computational physics is ideal for those who are good with computers and science. This degree provides a strong foundation in scientific computing. It takes the best of a physics degree: 1) strong analytical skills, 2) a broad knowledge of the physical sciences, and 3) the fundamental problem-solving skills of physics. These are integrated with the computer skills essential to scientific computing: 1) programming in several languages, 2) experience with different operating systems, 3) data storage and numerical analysis, and 4) the graphics to display complex results. The requirements for this area of emphasis are similar to those of a physics B. A. degree with the addition of the number of computer science courses. In addition to the 30 hours of physics requirements (Physics 11, 12, 124, 187, 231, 233, 251 or 283, 241 and one additional physics elective), there are 24 hours of computer science requirements (CS 15, 16, 76, 210, 216, and 288). Two additional 3 hour electives must be chosen from either physics or computer science. All required physics or Computer Science electives must be from courses at or above the 100 level.

Early departmental advising is recommended in setting up a well-planned program.
Honors Program

Qualified students with a cumulative GPA of at least 3.0 in physics courses may obtain a B.S. in physics with departmental honors by carrying out a physics-related project in addition to the required courses. The project results, in the form of a written report, must be approved by a committee composed of three faculty members chosen by the student, at least two of whom are from the Department of Physics. Students should register for at least two hours of credit in Physics 201. The undergraduate advisor serves as the department director for the Honors 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 Physics 11, 12, and 124 as well as three credit hours from any physics course or courses numbered 200 or above.

Political Science

Allan S. Hammock, Chairperson.
Robert E. DiClerico, Associate Chairperson; Director of Undergraduate Studies.
Christopher F. Mooney, Director of Graduate Studies.

Degree: Bachelor of Arts

Nature of Program

The undergraduate curriculum in the Department of Political Science has seven main objectives:

• To acquaint students with the nature and role of government in modern society, thus contributing to the general education of the student. 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 found in the WVU Graduate Catalog.

• 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 option.

• To develop understanding of the international and global dimensions of world and national politics. Students who wish to concentrate their course work 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 grade-point average 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 orientation class Orientation to Careers in Law, Politics and Political Science, which introduces freshmen and sophomores to the political science faculty, academic requirements, and career opportunities in political science.

Degree Requirements

A 2.0 GPA is required for graduation. In addition, no major with an incomplete in a political science course will be certified for graduation.

• Students majoring in political science must take POLS 2, 130 or 140, 150, 160, 170 or 171 and 100 and a minimum of 33 upper-division hours in political science. Courses may be selected from the following fields:
  - Public Policy and Administration: POLS 130, 140, 231, 233, 234, 235, 236, 238, 242, 244, 330, 331, 336.
  - Political Theory: POLS 170, 171, 272, 273, 275, 279.

• 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 100 is required of all majors. POLS 300, while designed for graduate students, may be taken by advanced undergraduates. These courses count toward the 33 hours required of political science 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 188, 189, 191, 194, 195, and 299. These courses also count toward the 33 hours required in political science. However, no more than six hours of POLS 194 Field Experience may count toward the 33-hour requirement. POLS 194 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 course numbered 190 Teaching Practicum may be used to satisfy major or secondary field requirements.

• All majors are required to take ECON 54 and 55.

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 2, 100, 130 or 140, 150, 160, 170 or 171; ECON 54 and 55; 33 upper-division hours in political science courses; six hours from PSYCH 1, SOCA 1.5, GEOG 1.8 and PHIL 2.5; and 12 upper-division 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 2, 100, 120, 130, 140, 150, 160, 170 or 171; ECON 54 and 55; six hours of policy courses selected from POLS 215, 231, 233, 234, 235, 236, 238; STAT 101 and CS 5; and 12 upper-division 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 2, 100, 130 or 140, 150, 160, 170 or 171; ECON 54 and 55; nine hours (three courses) from the following law-related courses in political science: POLS 110, 212, 213, 214, 215, 244, 263; nine hours (three courses) from the following skills courses: CS 5, ACCT 51 and 52, SPA 80, ENGL 108, STAT 101, PHIL 5, 10, ECON 125; and six hours (two courses) from the following substantive courses in law-related disciplines—SOCA 132, 133, 134, 230, 231, and 261, PHIL 13, 172, ECON 241 and 245, PSYCH 151.

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 2, 100, 130 or 140, 150, 160, 170 or 171. POLS 217 or 234; POLS 210 or POLS 218; ECON 54 and 55; 12 hrs. from ACCT 51 and 52, MATH 3, 14, 15, 16, 28, 128, ECON, 125, STAT 101, and CS 5; 9 hrs. from BUSA 110, 120, 130, and 140; and 3 hrs. from SOCA 134, 137, PSYCH 101 and ECON 241, 245, and 270.

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 2, 100, 120, 130, 150, 160, 170 or 171, 236, 238; ECON 54 and 55; MATH 15 and ECON 125; six hours from ARE 110, 192, 21; and 12 upper-division 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 of Political Science. Required: POLS 2, 100, 130 or 140, 150, 160, 170 or 171; ECON 54 and 55; six hours (two courses) from the following courses dealing with international relations—POLS 261, 262, 263, 264, 266, 267, 268; three hours (one course) which focuses on an industrialized country: POLS 250, 251, 252, 253; three hours (one course) which deals with a developing country: POLS 254, 255, 256, 258; six hours from the following history courses: HIST 109, 142, 216, 225, 226, 230, 263, 264; 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:

- **American Politics and Policy**: Required: POLS 2, 120, and 130. Two additional upper division courses from 110–149 or 210–249.
- **International and Comparative Politics**: Required: POLS 3, 150, and 160. Two additional upper division courses from 150–169 or 250–269.
- **Law and Legal Studies**: Required: POLS 2 and 110. One course from 212, 213, 214, 215, 231, 235, 244, or 263. Two additional upper division courses from 110–149 or 210–249.
- **Political Theory**: Required: POLS 7, 170, and 171. Two additional upper division courses from 170–179 or 270–279.

Students must achieve at least a 2.0 GPA in the 15 hours taken in political science.

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, Chairperson.
Kevin Larkin, Associate Chairperson.

*Degree: Bachelor of Arts*

**Admission Requirements**
Requirements for admission to the degree program in psychology include completion of PSYC 1 and STAT 101 with a minimum grade of C in each, completion of PSYC 19 with a pass, completion of 58 total credits with a minimum cumulative grade-point average (GPA) of 2.0, and a minimum cumulative GPA of 2.0 in all attempted psychology courses.

**Degree Requirements**

*Required Courses* PSYC 1, 19, 102, 131, 171; STAT 101; either PSYC 141 or 151; one course from the following group: PSYC 223, 224, 225, 226; four additional courses from the following group, with no more than one at the 100-level: PSYC 101, 141, 151, 164, 170, 191, 218, 223, 224, 225, 226, 242, 243, 245, 251, 262, 263, 264, 274, 279, 281, 282, 295.

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 1, 102, 131, 141 or 151, and 171, and STAT 101.

*Recommended Courses* For students primarily interested in graduate work in psychology, the following courses are recommended: PSYC 213, 218; additional courses in the 223, 224, 225, 226 series; 297, and 194.

For students primarily interested in a career in mental health or applied psychology requiring a B.A., the following courses are recommended: PSYC 141, 151, 194, 274, 262, and appropriate courses from among 101, 263, 264, 279, 281, and 282.

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 141, 151, 218, and at least one course from among PSYC 262, 263, 264, 274, 279, 281, and 282.

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 190, 194, and 213 are recommended. Students must have instructors’ 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.

**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 will be given 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 262 and 274; and two courses from the following group: PSYC 101, 263, 279, 281, and 282. Students must also take at least 12 credits of PSYC 194.

**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 297). Information about the Department of Psychology Honors Program is available in the Psychology Department Student Records Office or from the Psychology Honors Program advisor.

**Regents Bachelor of Arts**
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.

**Degree Requirements**
Total credits 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.

**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 or are in another B.A. program are ineligible.

**Fees**
Tuition and fees are the same for those in other undergraduate programs, except those seeking college equivalent credit pay an additional $200 fee.

Additional information is available from the Director, Regents B.A. program; P.O. Box 6289; West Virginia University, Morgantown, WV 26506-6289. Office: 210G Armstrong Hall. Phone (304) 293-5441.

**Religious Studies**
Richard Montgomery, Director.

**Degree: Bachelor of Arts**

**Major in Interdepartmental Studies**

**Nature of Program**
The program for religious studies in its courses offers instruction in the field of human experience concerning God, the transcendent, or ultimate concern. Such studies include intellectual examinations and discussions about this experience and about the resultant practices of ethics and ritual as well as the history of various religious traditions. The curriculum studies the world’s great scriptures, the history of religions, contemporary religious thought, and the interrelation of theology and
culture. Attention is given to the relevance of the subject matter to the lives of the students. Religious studies courses may be taken for University LSP credit (except RELG 290 and 491) or for elective credit. They enrich the global, liberal arts education of the student. Also, an interdepartmental major in religious studies may be undertaken (see below).

Admission Requirements
Admission to the interdepartmental degree program in religious studies requires a cumulative grade-point average (GPA) of at least 2.0.

Degree Requirements
If admitted to the interdepartmental degree program in religious studies, the student will be required to satisfactorily complete 42 hours of course work. 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 a three-hour seminar on a selected topic. The other 18 hours fulfill requirements outside the program in religious studies. The following three-hour courses are specifically required: SOCA 136, HIST 101, 103, and PHIL 123. Also six hours of American and/or English literature are required. Students must maintain at least a 2.0 GPA in the required course work 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 basic general liberal arts education for students entering such professions as law, medicine, and business, if electives are carefully chosen. Of course, this major is useful to anyone seeking a professional career in religion, such as the ministry, academic study of theology, or 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 in religious studies must be completed with a GPA of at least 2.0 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 three groups below; two courses in one of these groups to be selected by the student; a seminar on a selected topic in religious studies to be fulfilled by taking either Religious Studies 290 or, in some cases, by taking Religious Studies 197, the Honors Course in religious studies.
Group 2. Historical critical study of the Bible: RELG 100, 101, 102, 103, 105.
It is the responsibility of students minoring in religious studies to maintain close contact with the office of the program of religious studies concerning the projected scheduling of the above courses.

Slavic Studies
Marilyn Bendena, Coordinator.

Degree: Bachelor of Arts
Major in Interdepartmental Studies

Nature of Program
The Slavic Studies interdepartmental major provides a well-rounded understanding of the former Soviet Union and Eastern Europe. The guidelines have sufficient depth to provide for further study on the graduate level in one of the Slavic areas and sufficient breadth to provide a meaningful liberal arts major. Included in the
Slavic Studies major are courses in the departments of foreign languages, history, and political science.

The demand of government and private industry for specialists in Russian and East European area studies has been expanding in recent years. This program prepares students for this job market.

Although the major is interdepartmental, faculty members work closely together and with individual students to provide academic counseling and job referral. The coordinator of the program functions as principal advisor to majors. The program also offers extracurricular activities which help to develop an appreciation for the Slavic world.

Admission Requirements

The student must fulfill all University and Eberly College of Arts and Sciences degree requirements. The student must have the equivalent of two years of Russian. A GPA of 2.0 is required for admission and graduation.

Degree Requirements

The major requires a minimum of 30 hours, 15 of which must include:

- History 117 and 118.
- Russian 103 and 104 or Russian 109 and 110.
- Political Science 251 or 266.

The remaining hours required may be chosen from a flexible list of courses approved by the Slavic Studies Committee. Currently such courses could include History 111, 219, 220, FLIT 188, 189, Political Science 251, 266, Russian 103, 104, 105, 106, 109, 110, 144, 145, and 292.

Social Studies

Degree: Bachelor of Arts

Major: Interdepartmental Studies

Nature of Program

The bachelor of arts in interdepartmental studies with a major in social studies is designed specifically for students who intend to be certified to teach social studies in grades 5-12 and to complete a master’s degree in education in the College of Human Resources and Education following fulfillment of degree requirements for the bachelor of arts in the Eberly College of Arts and Sciences. The bachelor of arts and master of arts in education degrees will be granted simultaneously upon completion of both degree programs.

Admission Requirements

Admission to the degree program may be requested upon completion of 58 hours with a cumulative grade-point average of at least 2.75.

Degree Requirements

The social studies major consists of courses drawn from several disciplinary areas so as to prepare teachers for the broad array of required social studies courses they will teach. In addition to completing University and College requirements, the degree program requires:

- Economics (9 hours)—ECON 54, 55, and either 110 or 250.
- Geography (15 hours)—GEOG 2, 7, 8, 109, and 140.
- History (24 hours)

Fifteen hours represent a core of U.S. Survey (6 hrs.) and West Virginia history (3 hrs.). To earn the remaining 9 hours, the student chooses three courses from one of the following groups:

United States

155 American Colonial Society
156 The American Revolution
157 Antebellum America
159 United States, 1865-1918
Academic Advising

All social studies pre-majors and majors are advised in the College of Human Resources and Education.

School of Social Work and Public Administration

Division of Social Work

Barry L. Locke, Ed.D. (WVU). Chair and B.S.W. Program Director.
Eleanor Blakely, Ph.D. (U. NC). M.S.W. Program Director.
Linda Hagerty, M.S.W. (U. Pitt.). Field Instructor Coordinator.

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 our 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 has been a recognized national leader in the development of baccalaureate-level curriculum to support this educational goal. Building on a generalist model of social work practice, MSW students have the opportunity to concentrate their study in advanced direct practice or community organization and administration. The graduate program offers students opportunities to focus their learning in the fields of community mental health, children and families, health care, and aging. These programs emphasize social work practice in rural areas and small towns.
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, you 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. and M.S.W. graduates are expected to continue increasing in the coming years. Given the positive national reputation of our B.S.W. and M.S.W. programs, 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. A primary program goal is to prepare students as generalists for the beginning level of professional social work practice.

As part of the overall educational experience, you will obtain a well-rounded, liberal arts education. This education will assist in gaining personal knowledge and growth, in developing skills necessary to think and to work from an objective frame of reference, and in obtaining an awareness of human needs and ways to meet those needs in today’s technologically advanced society.

By completing the liberal arts course work, you will be better prepared to take on the responsibilities necessary to be effective both as a person and a helping professional. More specifically, the purpose of the baccalaureate social work program is described in six interrelated goals:

- To prepare the undergraduate student for entry-level professional practice, with special attention to rural and small town settings, through a curriculum of liberal arts and professional social work foundations.
- To prepare students for effective, responsive, and creative social work practice that will further develop the social work profession, humanize social welfare programs, and promote social and economic justice in society.
- To prepare students to practice within the value base and ethical standards of the social work profession.
- To prepare students for practice with diverse, oppressed, and at-risk populations.
- To enrich the liberal arts curriculum of WVU by providing opportunities for the undergraduate student body to increase their sensitivity, knowledge, and understanding of human needs, social problems, social welfare issues, and approaches toward resolution of problems.
- To provide a sound foundation for the student who may be appropriately interested in future graduate-level education in social work within our Division of Social Work, in other graduate social work programs, or in other allied graduate programs of study.
Based on the six global goals of the BSW Program, the BSW Program has established program objectives that inform the curriculum and guide students' learning throughout the program. More specifically, as a result of the BSW educational experience, students will:

- Acquire the art and skill of thoughtful and well-reasoned inquiry as applied to professional social work practice;
- Internalize the profession's value base and gain skill in its application to resolving ethical dilemmas.
- Acquire a world view that embraces the visions and voices of diverse populations as sources of cultural enrichment.
- Recognize the need for and commit to participation in activities that foster ongoing, post-graduation professional growth and development.
- Be able to assume entry-level generalist roles that effectively realize the purposes and functions of professional practice.
- Gain recognition of how one's own personal values can impact service delivery and reconcile value conflicts that will prevent effective service provision.
- Be able to assess and improve practice skills and practice effectiveness;
- Achieve an understanding of the role of dominant societal institutions in perpetuating the oppression of and discrimination against people who categorically belong to certain groups within society.
- Gain knowledge and skill in interventions that promote service and resource systems that are just, effective, and responsive to minority and other oppressed populations.
- Acquire a knowledge of the historical, philosophical, and ideological foundations that have influenced and currently shape social welfare policies and programs.
- Gain knowledge of and skill in generalist methods and approaches to interventions with individuals, families, small groups, organizations, and communities.
- Acquire knowledge of the bio-psycho-social-spiritual variables that influence human development and behavior throughout the life span.
- Acquire an ecosystems perspective for making practice assessments.
- Gain skill in applying policy analysis frameworks to organizational and social welfare policies, as well as policy making structures, in order to determine policy impacts on clients, workers, and agencies.
- Acquire tools for evaluating research studies and develop skill in utilizing research findings to enhance practice effectiveness.
- Acquire the knowledge and skills necessary to evaluate practice outcomes and program effectiveness.
- Gain knowledge and skill to interact effectively with clients, colleagues, and members of other practice contexts who have differing social, cultural, racial, religious, spiritual, and class backgrounds.
- Gain skill in the use of collegial and supervisory networks to obtain feedback that will assist in developing practice competence and promoting professional development.
- Acquire knowledge and skill in the use of formal and informal structures to effect needed organizational change.
- Acquire a working knowledge of service delivery to rural and small town populations.

Social work majors who exhibit conduct that violates the National Association of Social Workers (NASW) Code of Ethics may be counseled out of the program, in accordance with established University policy as set forth in the BSW Student Handbook, if they are unable to demonstrate that the conduct in question has been modified to the point of being in compliance with NASW’s Code of Ethics. Students shall be provided appropriate safeguards for appealing such recommendations and given an opportunity to demonstrate that the conduct has been modified to comply with the NASW’s Code of Ethics.
The 2 PLUS 2 Program

WVU and several other colleges within the state have entered into a joint commitment to increase the college-going rate of West Virginia residents, 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. 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-BSW 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 a social work major. 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 course work 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 you 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 BSW Program’s admission criteria, complete a formal application for admission, and have their application approved by the School of Social Work 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 2.5 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 B or better in SOWK 47 and 51 by the time of application for admission and receives a supportive or generally positive recommendation from the instructors of those courses. (Students applying to the program through the
2+2 arrangement or as transfers from another institution can replace the SOWK 47 course and reference with a reference from another minority course approved by the BSW program director. When they matriculate to WVU, they must take SOWK 47, along with their first semester of upper division social work courses. 

- Successfully complete English 1 and 2; Clusters A, B, and C; and a mathematics course by the conclusion of the semester during which application to the program is made.
- Demonstrates college-level writing skills.
- Show motivation to pursue a career in the field of social work.
- Show potential for commitment to the National Association of Social Workers (NASW) Code of Ethics.
- Possess a basic level of communication and interpersonal skills, which provide a sufficient foundation for building professional interactional skills.
- Show potential for professional development, such as responsiveness to feedback and willingness to address areas that might interfere with effectiveness as a future helper.
- In general, is sensitive to and respects 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 2.5 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, as well as the BSW 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, whichever applies to you. 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.

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 to meet WVU’s social work course requirements, 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 for approval. 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 in social work and six lower division hours, 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 course work 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 course work. 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 better, with the exception of SOWK 47 and 51, which must be completed with a B or better; maintain an overall grade-point average of 2.0 or above, and maintain a grade-point average 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 as outlined 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 290 or 291, both courses must be repeated and successfully completed to meet graduation requirements.

The specific curriculum requirements for graduation are:

**University Liberal Studies Program**

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
</tr>
<tr>
<td>C</td>
<td>11-12</td>
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**plus**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1 and 2</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 47 (Minority content)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Subtotal**

47-48

In the LSP, you must also take a writing skills course in social work, currently SOWK 290. As a social work student, you are required to take the following Cluster B courses: PSYC 1, POLS 1 or 2, and SOCA 1 and 7. In Cluster C, you must take a lab science class for four credit hours.

**Additional minority requirement**

3

**Social and Behavioral Science Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 141 Introduction to Human Development</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 121 The Family</td>
<td>3</td>
</tr>
<tr>
<td>POLS 120 State and Local Government</td>
<td>3</td>
</tr>
</tbody>
</table>

**Subtotal**

9

**Additional Social and Behavioral Science Requirements**

(nine hours total with three hours each in psychology, sociology, and political science.)

9

**Required Social Work Courses:**

**Lower Division**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SOWK 51 Introduction to Social Work</td>
<td>3</td>
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</table>

**Upper Division**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOWK 200 Social Welfare Policy and Services 1</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 210 Social Welfare Policy and Services 2</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 219 Skills Lab 1</td>
<td>1</td>
</tr>
<tr>
<td>SOWK 220 Social Work Methods 1</td>
<td>3</td>
</tr>
<tr>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>SOWK 222 Social Work Methods 2</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 223 Skills Lab 2</td>
<td>1</td>
</tr>
<tr>
<td>SOWK 230 Human Biology for Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 250 Human Behavior for Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 260 Social Work Research and Stats</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 290 Social Work Practice Seminar</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 291 Field Practicum</td>
<td>12</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>71</strong></td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td><strong>18-19</strong></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>128</strong></td>
</tr>
</tbody>
</table>

Typical Study Load

A normal study load for a social work major is 15 to 18 hours. If you have a grade-point average below 2.0, you will not be permitted to exceed the normal 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, is a key component of your total educational experience in the undergraduate social work program. During the field practicum (SOWK 291) you will have the opportunity to “test out,” 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 440 clock hours of field placement work must be completed during the field practicum. While in field placement, students participate in SOWK 290 Social Work Practice 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.

Non-majors in Social Work Courses

If you are a candidate for a Board of Regents Bachelor of Arts Degree (BORBA) 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. BORBA candidates must meet the same requirements for sequencing of social work courses 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.
Sociology and Anthropology
Ronald Althouse, Chairperson.

Degree: Bachelor of Arts

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 department 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, the 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. They may apply for admission as majors upon completion of MATH 3 and 58 credit hours with a cumulative grade-point average (GPA) of at least 2.0.

Degree Requirements
B.A. in Sociology and Anthropology

General Requirements
All students in the department are required to take the following courses in addition to the required courses in their chosen area of emphasis:
SOCA 1 Introduction to Sociology
SOCA 5 Introduction to Anthropology
SOCA 211 Social Research Methods
STAT 101 Statistics (preferably in the sophomore year; PR: MATH 3 or equivalent.)

Emphasis Requirements
Every major must complete the requirements of one of the departmental areas of emphasis. The areas of emphasis are in anthropology or sociology.

• Students majoring in the Department of Sociology and Anthropology must earn a minimum of 33 credit hours in departmental courses. Twenty-seven hours are required at the upper-division level, of which twelve (including SOCA 211) must be at the 200-level. 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 their 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 293) or field experience (SOCA 194) 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
Anthropology Emphasis
Anthropology is the study and science of human beings in both the past and the present, and as cultural and biological organisms. Socio-cultural anthropology is concerned with the study of contemporary cultures in the world, their nature, and their change. Archaeology is concerned with past cultures in all areas of the world. Physical anthropology is concerned with our biological past and present. As students of a “holistic” science, majors are exposed to all aspects of...
the human condition. The major allows graduates to pursue graduate work or to find jobs in industry, government, or the private sector, in the U.S. or abroad.

In addition to general departmental requirements, anthropology emphasis majors are required to take SOCA 152, 255 (in the senior year), one 200-level cultural anthropology course, three upper-division anthropology electives, one upper-division elective in sociology, and one additional 200-level elective in any area.

**Sociology Emphasis** Sociology is the scientific study of human society and social behavior in all its diverse forms. Among the aspects of social life covered are social groups (families, communities, factories); social inequality (class, race, gender); social institutions (religion, education, sports, family, economics, politics); social problems (war, crime, poverty) and social change (urbanization, social movements, technological revolutions). Because sociology emphasis majors are exposed to the many aspects of society, they are therefore sought by those in industry, government, and the private sector who desire employees with a comprehensive understanding of the social world. Sociology emphasis majors are also qualified to pursue graduate work in the social sciences and many professions.

In addition to departmental requirements, sociology emphasis majors are required to take SOCA 201 (in the senior year), five upper-division sociology electives (one must be at the 200-level, one upper-division elective in anthropology, and an additional 200-level elective in any area).

**Minor in Sociology and Anthropology**

Students desiring a minor in the Department of Sociology and Anthropology may do so 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 either SOCA 5 or 51 and 12 additional upper-division hours in regular anthropology (not sociology) courses. Anthropology courses are numbered in the 50s—e.g. SOCA 152, 258.

**Sociology:** Students must take either SOCA 1 or 7 and 12 additional upper-division hours in regular sociology (not anthropology) courses. Most departmental courses are sociology courses.

**Statistics**

E. James Harner, Chairperson.
Daniel M. Chilko, Pre-Statistics Advisor.

**Degree: Bachelor of Arts**

**Nature of Program**

The Department of Statistics offers a degree program leading to a bachelor of arts. The program qualifies graduates for professional positions in industry, research, government service, or graduate study in statistics or one of the quantitative fields of science.

The major in statistics prepares the student to combine the scientific method with mathematics and inductive reasoning in order to serve on a research team as a member who can design surveys or experiments, analyze the results, and draw appropriate inferences. To achieve these goals students must acquire: sufficient knowledge of mathematical and statistical theory in order to understand the assumptions which must be met before the statistical analysis of any data set is valid; excellent knowledge of applied statistics so that they are capable of carrying out common statistical analytical and graphical procedures; and good familiarity with a high-level computer programming language, and knowledge of at least one comprehensive analytical statistical computer system.

Students interested in a career in actuarial science should complete STAT 261 and 262 during their junior year and STAT 361 and 362 during their senior year.

A minor in statistics is available to students who are majoring in one of the degree programs offered by the Eberly College of Arts and Sciences.
Admission Requirements
Pre-Statistics Program of Study

Students must be qualified for admission to WVU and to the Eberly College of Arts and Sciences and present secondary-school credit for two units of algebra, one unit of geometry, and one-half unit of trigonometry or advanced mathematics or one unit of chemistry or physics as general requirements for admission to the pre-statistics program of study.

Students must take the standard ACT test or the SAT test. Automatic admission to pre-statistics will be granted if any two of the three following requirements are met:
• A 3.0 grade-point average in high school.
• A mathematics ACT score of 22, or mathematics SAT score of 467.
• A composite ACT score of 22, or combined SAT score of 920.

Those not satisfying these admission requirements as an entering freshman may gain admission to pre-statistics after successful completion of at least one year of University study. Transfer from pre-statistics to the statistics degree program will depend on academic performance in completing the required courses.

To transfer from another WVU degree program to pre-statistics or to the statistics degree program, students should ask their current advisor to complete an academic status change form, and then present this form, along with their academic records, to the Eberly College of Arts and Sciences Undergraduate Advising and Students Records Office on the second floor of the Student Services Center. When the Advising Office has processed the records, they will forward the file to the Department of Statistics in Room 106 Knapp Hall.

Statistics Degree Program

Students need at least a 2.5 GPA in all computer science, mathematics, and statistics courses attempted during the first two years of study to be admitted to the bachelor of arts degree program in statistics. At a minimum this should include C S 15 and 16; MATH 15 and 16; and STAT 201 and 212. Those who do not meet these minimum requirements but have displayed a special aptitude for statistics may request admission to the department on a provisional basis. Written petitions should be addressed to the Statistics Admissions and Standards Committee and delivered to 106 Knapp Hall.

Degree Requirements

Statistics majors must complete at least 60 hours of upper-division course work with at least 35 of these upper-division hours in statistics, computer science, and mathematics. At least 26 of these 35 hours must be in statistics. They must have at least a C in each course counted towards meeting the 35 upper-division hours in statistics, computer science, and mathematics.

Required Courses MATH 15, 16, 17, 241; C S 15, 16; STAT 196, 197, 201, 212, 213, 261, 262; three of the following: STAT 221, 231, 251, 291, 341, 351, 371, 381; six additional hours of upper-division course work in mathematics, statistics, and/or computer science, and at least 60 hours of upper-division course work.

No more than six hours of 190–199 course work may be used to fulfill the 35-hour, upper-division requirement in statistics, computer science, and mathematics; no more than 10 hours of 190–199 course work in any field may be used to fulfill the 60-hour, upper-division requirement.

Recommended Electives Any course listed above and STAT 190, 194, 195, 361, 362; C S 26, 56, 76, 126; MATH 18, 163, 213, 251, 252, 255; IMSE 250.
Minor in Statistics
Any student admitted to a degree program in the Eberly College of Arts and Sciences may take a minor in statistics by satisfying the following:
• Completion of at least three hours of statistics theory (STAT 261 or 361).
• Completion of an additional 12 hours of statistical theory or applications selected from among STAT 201, 212, 213, 221, 231, 262 or 362 and 341.
• All grades must be C or higher in order to satisfy these requirements. Note that MATH 16 is a prerequisite for STAT 261 while MATH 17 is a prerequisite for STAT 361.

Center for Women’s Studies
Barbara J. Howe, Ph.D., Interim Director and 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 minor in women’s studies and a Certificate program. The Center also sponsors lectures, films, colloquia, symposia, conferences, faculty development programs and scholarships. A resource library in the Center supplements the women’s studies holdings of other campus libraries and is open to the public Monday through Friday from 8:15 a.m. to 4:45 p.m. The Center for Women’s Studies is supported by the West Virginia Alliance for Women’s Studies, a community-based group that promotes Women’s Studies and women’s education throughout the state with scholarships and community outreach.

Nature of Program
Women’s studies scholarship on women and gender has revolutionized most academic disciplines over the last 25 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 Students 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 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 new areas of work, such as rape crisis centers, feminist publishing houses, campus women’s centers, affirmative action offices, sex equity projects, advocacy and lobbying programs, domestic violence shelters, and displaced-homemaker programs.

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 Liberal Studies Program distribution requirements (clusters) as well as the 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 minor in Women’s Studies. This program is also open to WVU alumni and graduate students, but the credential earned is an undergraduate 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 (MALS) program.
Minor in Women’s Studies

Any student admitted to an undergraduate degree program at West Virginia University 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 19 hours of coursework is required for the minor. Students must take WMST 40, WMST 240, and 12 additional hours in women’s studies courses or in 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 independent study or field experience. Students are required to register with the program specialist of 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 Mary Beth Garvin, Program Specialist, WVU Center for Women’s Studies, 218 Eiesland Hall, PO BOX 6450, Morgantown, WV 26506-6450. Telephone (304) 293-2339. E-mail: mgarvin@wvu.edu. Please visit our website at http://www.as.wvu.edu/wmst/.
College of Business and Economics
Sydney V. Stern, Ph.D., Dean.
Tom S. Witt, Ph.D., Associate Dean.
Richard M. Gardner, M.B.A., Assistant Dean.
Jay H. Coats, Ph.D., Director of Undergraduate Programs.
Paul J. Speaker, Ph.D., Director of Graduate Programs.
Susan Gustin, M.A., Assistant Dean.

Degrees
 Bachelor of Science in Business Administration
  Accounting
  Business Management
  Human Resource Management
  Management Information Systems
  Finance
  Marketing
 Bachelor of Science
  Economics

Coordinated Dual Degrees in Business and Foreign Languages (BFL)

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 of Business and Economics has become one of the largest colleges at West Virginia University. In 1954, the College became fully accredited by the American Assembly of Collegiate Schools of Business, the highest level of business accreditation.

In 1990, the new College of Business and Economics building was completed on the site of Old Mountaineer Stadium on the downtown campus adjacent to historic Woodburn Hall. The new four-story facility houses modern classrooms, two auditoriums, state-of-the-art computer laboratories, and space for the College’s research and service centers.

Mission
The College is committed to continuous development as a quality educational institution, while recognizing both its special service responsibility to the state and the importance of reaching a national and international audience with its research and publications.

West Virginia University is the state’s comprehensive land-grant university. The College of Business and Economics has a special responsibility to the citizens of the state to provide quality undergraduate and graduate education, to produce basic and applied research, and to support economic development, continuing professional education, extension, and service activities. The College mission is consistent with the overall mission of the University.

The College of Business and Economics is committed to maintaining accreditation by AACSB—The International Association for Management Education accreditation reflects the highest standards of excellence in nationally recognized business programs.

A primary mission of the College is to provide students with relevant knowledge and skills that will allow them to fulfill useful and productive roles in society. The College seeks to attract a diverse and qualified undergraduate and graduate student body to matriculate in undergraduate and graduate degree programs in accounting (B.S., M.P.A.), business administration (M.B.A.), economics (B.S., B.A., M.A., Ph.D.), finance (B.S.), industrial relations (M.S.), management (B.S.), and marketing (B.S.). The faculty designs and regularly reviews these programs to assure that they are current, relevant, complete, and effective. In addition, the College offers service to the University community by providing courses for students not majoring in business and economics.
The College adheres to high standards of classroom instruction and supports instructional excellence by attracting and retaining doctorally qualified faculty who meet high standards of scholarship. Excellence in instruction is encouraged through faculty development programs and faculty research efforts.

Equally important with the instructional mission of the College is the faculty’s contribution to research. The College supports excellence in scholarly and applied research in all disciplines and encourages the development and presentation of research results through scholarly publications and other appropriate outlets.

As a part of a comprehensive land grant University, the College of Business and Economics is committed to outreach activities and programs directed toward service to business, labor, government, and others at the local, state, and regional levels. In this context the College encourages and supports faculty, staff, and student service activities.

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
The College of Business and Economics is accredited by AACSB—The International Association for Management Education at the undergraduate and graduate levels. AACSB 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 membership accreditation in the AACSB since 1954 and is among 20 percent of the nation’s collegiate business programs to hold AACSB accreditation at both the undergraduate and graduate levels.

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

Employment and Internships
The College of Business and Economics is committed to providing a quality work experience for every student before graduation. Internships allow you to explore job options, refine career goals, enhance marketability, and network with professionals. You can earn academic credit and income for your internship experience. An internship also gives you a competitive edge in today’s job market because you gain the experience every employer wants. The types of internships are as varied as the types of jobs you might find upon graduation. Internships can be arranged in the fall, spring, or summer.

Possible projects include: Conducting audits, assisting with portfolio management and financial planning, managing accounts receivable and payable, learning the operations of a business by tagging along with management, directing fund raising events or special promotions, developing and installing a computerized inventory system, trouble-shooting problems in management information systems, training employees on computer applications, developing forecasting reports, recruiting and training employees, conducting market research, selling products, developing a policy and procedure manual, writing a company newsletter, compiling and producing a leasing document. The possibilities are endless and the staff in the Office of Employment and Internships will do their best to connect you with the job that best suits your career path. Visit the Employer Reference and Research Area in the Edna and R. Emmett Lynch Advising Center for employer information, job search tools, and interviewing tips.

College of Business and Economics  151
Technology
The array of technology available to students in the College of Business and Economics is impressive. Through course work, students develop skills with technology and its application to business. Students use the latest word processing, spreadsheet, database, and presentation software. The College encourages each student to buy a personal computer; special purchase and lease plans are available through the College. Business students have priority access to standard and specialized business software, e-mail, and Internet services through two computer labs. A new wireless system provides access from anywhere in the B & E Building to students with properly equipped laptop computers. In addition, the building also houses two multi-media classrooms and three distance learning.

Business and Economics Success Teams (BEST)
Upper-division business students who care about the success of pre-business and Economics students can volunteer to become mentors in Business and Economics Success Teams (BEST). Their goal is to increase academic achievement and help freshmen and sophomores learn the ropes. Mentors are knowledgeable about WVU services, special programs, and professional activities.

Living and Learning Community
The Living and Learning Community is a residence hall program which expands the academic experience outside the traditional classroom. Living in a small community of Pre-business and Economics students, these dorm residents attend several classes together and participate in a rich array of organized social activities. For more information, contact the Office of Housing and Residence Life at (304) 293-4491.

Careers
Students seeking the B.S.B.Ad. degree must select a major. 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
Finance and Banking Club
Industrial Relations Student Association
Marketing Club
MBA Association
MPA Association
MIS Association
Society for Human Resource Management
Thompson’s Economics Club

Special Units and Publications
Bureau of Business Research
The Bureau of Business Research (BBR) is the formal research and service division of the College of Business and Economics and provides research support to faculty, engages in research on business and industry, provides information services to the public and private sectors, and disseminates research results. BBR graduate and undergraduate research assistants receive applied research training through their participation in various projects. The Bureau publishes the Journal of Small Business Management, which is distributed around the world.
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 the academic communities, business and governmental entities in the U.S. and China. Special emphasis is placed on cultivating mutually beneficial ties between China and West Virginia.

Center for Economic Research
The Center for Economic Research (CER) researches the West Virginia economy and serves as a major business and economic data center. The CER maintains the West Virginia State Econometric Model, the West Virginia Input-Output Model, and the West Virginia Business and Economic Information System (WVBEIS). Research areas include travel and tourism, industrial targeting, forecasting, economic impact analysis, and executive/legislative branch studies. The CER is a depository for the Bureau of Economic Analysis (BEA) and Bureau of Census databases and computer files. The West Virginia Business and Economic Review is distributed quarterly to over 2,000 readers in West Virginia.

Institute of Industrial and Labor Relations
Faculty associated with the Institute of Industrial and Labor Relations combine teaching, research, and service activities. Research results concerning labor-management cooperation and economic development are made a part of the educational process within the College, and opportunities are available for students to assist with research. Research and public service activities study those labor-management relations and human resource developments uniquely identified with West Virginia. Institute faculty edit the Labor Studies Journal and the Employee Responsibilities and Rights Journal.

Admission
Pre-Business and Economics
High school students interested in professional careers in accounting, economics, finance, management, or marketing should seek admission into the pre-business and economics program through the Undergraduate Academic Services Center, located in the Student Services Center (304) 293-5805.

Admission to the College
Prerequisites
On-campus and transfer students seeking admission to the College of Business and Economics must have completed 58 credit hours, which includes the following:
- Six hours of principles of economics (ECON 54 and 55) with a C grade or better.
- Six hours of principles of accounting (ACCT 51 and 52) with a C grade or better.
- Three hours of statistics (ECON 125) with a C grade or better.
- Three hours of college algebra (MATH 28) with a C grade or better and three hours of calculus (MATH 128) with a passing grade for the bachelor of science in business administration, or a grade of C or better for the bachelor of science in economics. MATH 14 with a C grade or better and MATH 15, or MATH 15 and MATH 16, can be used to satisfy the mathematics requirements.
- Six hours of composition and rhetoric with a passing grade.
- Four hours of computer applications (CS 5).
WVU, WVUIT, WVU-Parkersburg, and Potomac State Students

Students attending WVU, WVUIT, WVU-Parkersburg, and Potomac State College are welcome to apply for admission during the semester in which they will complete the above requirements. Students having a cumulative GPA at or above 2.50 will be admitted into the College as space permits in the order of descending grade point average (calculated using all grades earned at any college or university). No student with a GPA below 2.50 will be admitted.

Application Deadlines

Undergraduate students may be admitted to the College only in the fall and spring semesters. Applications for fall semester admission must be received no later than February 15. Applications for spring semester must be received no later than September 15. Applications received after the deadline will be included in the next pool of applicants.

Transfer Students

Transfer students seeking admission to the College must meet the same requirements as students attending WVU, WVUIT, WVU-Parkersburg, or Potomac State College.

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 have attained a 2.5 or better GPA and completed six hours of principles of economics, six hours of accounting principles, three hours of statistics, and six hours of mathematics including three hours of calculus. In addition, students must have successfully completed six hours of composition and rhetoric, as well as four hours of computer applications.

Recommended Business Courses for Non-B & E Students

If you are a non-business student who wishes to obtain general knowledge about selected business topics and you do not meet the prerequisites for admission to upper-division business or economics courses or to the College of Business and Economics, please note that nine business and economics courses (27 hours) are available to you. For more information, read the course descriptions in the last section of this catalog.

These courses include the following:
- ACCT 51 Principles of Accounting (PR: Sophomore Standing)
- ACCT 52 Principles of Accounting (PR: ACCT 51)
- ECON 54 Principles of Economics (PR: Sophomore Standing)
- ECON 55 Principles of Economics (PR: ECON 55)
- ECON 125 Elementary B & E Statistics (PR: Sophomore Standing)
- BUSA 110 Survey of Business Law (PR: Junior Standing)
- BUSA 120 Survey of Management (PR: Junior Standing)
- BUSA 130 Survey of Marketing (PR: Junior Standing)
- BUSA 140 Survey of Finance (PR: Junior Standing)

The business administration survey courses cannot be used as credit hours toward a business and economics degree. They also do not satisfy prerequisites for enrollment in any other upper-division business courses without successful passage of an equivalency examination and completion of the normal pre-business prerequisites.
Minor in Business Administration

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</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 51</td>
<td>3</td>
</tr>
<tr>
<td>Accounting 52</td>
<td>3</td>
</tr>
<tr>
<td>Economics 54</td>
<td>3</td>
</tr>
<tr>
<td>Economics 55</td>
<td>3</td>
</tr>
<tr>
<td>BusA 120 (Management)</td>
<td>3</td>
</tr>
<tr>
<td>BusA 130 (Marketing)</td>
<td>3</td>
</tr>
<tr>
<td>BusA 140 (Finance)</td>
<td>3</td>
</tr>
<tr>
<td>BusA 110 (Business Law)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

- No substitutions are permitted for the above courses.
- To qualify for a minor in business a student must have earned a grade of C or better in each of the eight courses.
- This minor is not available to any student seeking a BS 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 department chairperson and 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 in the College. Exceptions to the minimum or maximum load require approval of the Academic Standards Committee of the College before registration. Students seeking to withdraw from individual courses must petition the Committee on Academic Standards 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 Edna and R. Emmett Lynch Undergraduate Advising Center, Room 358, Business and Economics Building (304) 293-4959. Academic advisors assist all undergraduate business and economics students with academic concerns. Course registration, graduation certification, and special requests are administered by this office. Any business and economics student needing academic advising may make an appointment with a Developmental Advising Specialist in the center.

Requirements for Bachelor’s Degrees

To qualify for either the bachelor of science in business administration or the bachelor of science in economics, students 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 University of West Virginia Board of Trustees.
- At least a 2.0 average on all course work.
- An average of 2.0 (C) or better in course work in their area of concentration (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 the University Liberal Studies Program requirements. Each student must complete 12 credits of University-approved Cluster A courses, 12 credits of University-approved Cluster B courses, and 11-12 credits of University-approved Cluster C courses. See the inventory of approved Liberal Studies Program courses in this book.

While the preceding constitute the general requirements of the bachelor degrees of the College of Business and Economics, course requirements, specific grade requirements, and related academic requirements must be satisfied in one of the several major curricula of the College of Business and Economics.

Undergraduate Curricula

The College of Business and Economics offers two undergraduate degrees—bachelor of science in business administration and bachelor of science in economics. Programs leading to these degrees enable students to obtain a balanced education in liberal arts, a broad base of study in business and economics, and concentrated work in major areas of interest.

Bachelor of Science in Business Administration

Admission to the bachelor of science in business administration degree program requires admission to the College of Business and Economics. These requirements are indicated on previous pages.

The requirements for the bachelor of science in business administration are:
• 53 hours outside business and economics.
• 6-12 hours of unrestricted courses in or out of the College of Business and Economics.
• 39 hours in the college core courses in business and economics.
• 24-30 hours in an area of concentration (accounting, finance, business management, 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 careers in business matriculate in the pre-business and economics programs during their freshman and sophomore years, and since they transfer and matriculate in the College of Business and Economics in their junior and senior years, several critical curricular requirements are cited below:

Relative to pass-fail courses and grading, University regulations limit full-time junior and senior students with a 2.0 GPA to a maximum of four hours each semester or each summer session. The courses taken for pass-fail grading must be free electives and cannot exceed a total of 18 hours of credit. The College of Business and Economics permits pass-fail grading in business and economics courses only under these conditions:
• Pass-fail grading will be permitted only in courses numbered 200 Special Topics other than in the student’s major area, and
• In “free” electives in business and economics and only where the student has met all requirements (including business and economics elective requirements) and only where the course is not necessary to fulfill the various program and 128 credit degree requirements.

Students majoring in any of the several areas of business must average a 2.0 (C) or better from courses in their areas of concentration (excludes required or elective courses in other disciplines in business or economics).

A maximum of three credit-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 the B.S.B.Ad. degree.
Business Core Curriculum

All B.S.B.Ad. students must complete the 39 credit-hour business core curriculum. Fifteen hours of the core curriculum are taken in the sophomore year (ACCT 51 and 52, ECON 54, 55, and 125) and twenty-four hours are taken during the junior and senior years (BCOR 150, 160, 165, 170, 175, 180, 185, 210, and 215). 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.

Degree Requirements

Accounting, Finance, Business Management, and Marketing

<table>
<thead>
<tr>
<th>Non-B &amp; E Courses (freshman and sophomore years)</th>
<th>Hrs.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1 and 2 Composition and Rhetoric...........</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>MATH 28 Finite Mathematics *....................</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LSP Cluster A Courses: Electives................</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>LSP Cluster B Courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 1 Introduction to Psychology...............</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOCA 1 Introduction to Sociology................</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Other Cluster B Electives (Non-economics)......</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>LSP Cluster C Courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 128 Introduction to Calculus*..............</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CS 5 Introduction to Computer Applications......</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Other Cluster C Lab. Science Elective (other than STAT 101) ..</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Other Electives—Non-Business and Economics......</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong>..................................................</td>
<td><strong>53</strong></td>
<td></td>
</tr>
</tbody>
</table>

Unrestricted electives recommended for juniors and seniors (see major program requirements) .......................................................... 6-12

All majors in business administration must complete a uniform body of common knowledge in business and economics, consisting of 39 credit hours.

Required College Core Courses:

Sophomore year

| ACCT 51 and 52 Principles.......................... | 6    |       |
| ECON 54 and 55 Principles..........................| 6    |       |
| ECON 125 Elementary Business and Economics Statistics ...... | 3    |       |

Junior year

| BCOR 150 Legal Environment of Business...........| 3    |       |
| BCOR 160 Information Systems and Technology.....| 3    |       |
| BCOR 165 Professional Development I...............| 1    |       |
| BCOR 170 Financial/Managerial Decision Analysis..| 5    |       |
| BCOR 175 Professional Development II..............| 1    |       |
| BCOR 180 Markets, Operations, and Strategy........| 5    |       |
| BCOR 185 Managing Individuals and Teams..........| 3    |       |

Senior year

| BCOR 210 Professional Development III.............| 1    |       |
| BCOR 215 Contemporary Business Strategy..........| 2    |       |
| **Subtotal**..................................................| **39**|       |

Courses in Major Field and Electives (junior and senior years) .................. 24-30

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

*The mathematics requirement for all students seeking admission as a business student to the College is the completion of MATH 28 Finite Mathematics with a grade of C or better and the completion of MATH 128 Introduction to Calculus with a passing grade. A grade of C or better in MATH 14 and a passing grade in MATH 15 or completion of MATH 15 and 16 would also meet the College’s mathematics requirements.
Bachelor of Science in Economics

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 3 (or MATH 14) is acceptable in lieu of MATH 28. MATH 15 is acceptable in lieu of MATH 128. Students intending to go into graduate work in economics should take MATH 15 and MATH 16, and are encouraged to take additional mathematics courses.

Admission to the bachelor of science in economics degree program requires admission to the College of Business and Economics. These requirements are indicated on previous pages. 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 Liberal Studies Program courses and elective courses.

Requirements

Non-Business and Non-Economics Courses  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 1 and 2 Composition and Rhetoric</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>LSP Cluster A Courses</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>LSP Cluster B Courses (Other than Economics)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>LSP Cluster C Courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C S 5 Introduction to Computer Applications</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>6-8</td>
<td></td>
</tr>
<tr>
<td>Other Cluster C Lab Science elective</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Other electives (Non-Business and Economics)</td>
<td>22-24</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>62</strong></td>
</tr>
<tr>
<td>Unrestricted electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

B.S. in Economics Required College Core Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 51 and 52 Principles</td>
<td>6</td>
</tr>
<tr>
<td>ECON 54 and 55 Principles</td>
<td>6</td>
</tr>
<tr>
<td>ECON 125 Elementary Business and Economics Statistics</td>
<td>3</td>
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<tr>
<td>ECON 211 Intermediate Microeconomic Theory</td>
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<tr>
<td>ECON 212 Intermediate Macroeconomic Theory</td>
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<tr>
<td><strong>Elective Courses Required in the College:</strong></td>
<td><strong>21</strong></td>
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<tr>
<td>Economics</td>
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<td>Economics or Business</td>
<td>12</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>128</strong></td>
</tr>
</tbody>
</table>

Multiple and Concurrent Bachelor’s Degrees

If students seek to earn two bachelor’s degrees simultaneously and if one of the two to be earned includes a bachelor of science in business administration or economics, they must meet all requirements leading to the undergraduate degree offered by the College of Business and Economics.
The student must complete all University LSP requirements, all College of Business and Economics core requirements, and must satisfy the course requirements of one of the College of Business and Economics curricula. (See "Requirements for Degrees.") Students seeking to earn a bachelor of science in business administration or economics and another bachelor’s degree simultaneously must earn a minimum of 158 hours including 30 hours as a resident of the College. In addition, students seeking a bachelor of science in business administration or economics and another degree simultaneously must meet all admission requirements in order to be enrolled in the College of Business and Economics.

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 bachelor of arts with a major in foreign languages and a bachelor of science in business administration. For details, see Part 6 Special Programs in this catalog.

Accounting
Robert S. Maust, Division Director and Louis F. Tanner Distinguished Professor of Public Accounting.
300 Business and Economics Building, (304) 293-7842.

Degree Offered
Bachelor of Science in Business Administration

Objectives
Accounting is the process of developing and communicating financial information about business and not-for-profit organizations to managers, investors, and creditors to assist with economic decision making. The accounting program provides students with the basic educational background necessary for professional certification. These include the certified public accountant (CPA), certified management accountant (CMA), and certified internal auditor (CIA) examinations. People with degrees in accounting have careers as: certified public accountants, government accountants, financial planners, auditors, controllers, internal auditors, tax accountants, management accountants, financial analysts, and information system analysts.

Requirements to sit for the CPA exam vary by state. Many states require 150 hours of college credit to sit for the exam. Beginning in the year 2000, West Virginia will adopt this requirement. 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.

Our accounting program is considered one of the best in the country. In 1997, the accounting program received separate accreditation by AACSB—The International Association for Management Education. Only 130 schools in the country have achieved this distinction. With a strong alumni network and a solid reputation among major international accounting firms, The College of Business and Economics 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, have a grade of B or better in both Accounting 51 and 52, and pass a qualifying examination administered by the Department of Accounting.

The accounting major is required to complete the following plan of study:
Accounting major requirements:

ACCT 110 *Introduction to Accounting Systems* ........................................... 3  
ACCT 111 and 112 *Intermediate Accounting* .................................................. 6  
ACCT 115 *Cost Accounting* .............................................................................. 3  
ACCT 200 *Special Topics* .................................................................................. 3  
ACCT 211 *Accounting Systems* ................................................................. 3  
ACCT 213 *Income Tax Accounting* ............................................................. 3  
ACCT 217 *Auditing Theory* ............................................................................ 3  
BLAW 213 *Law for the C.P.A.* ........................................................................ 3  
ECON 130 *Money and Banking*, or  
FIN 151 *Financial Institutions* ................................................................. 3  

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

A grade of A or B in Accounting 52 is required of all students prior to registering for Accounting 111. A grade of C or better in Accounting 111 is required of all students prior to registering for Accounting 112. To be eligible for graduation, accounting majors must attain a GPA of 2.0 or better on all course work 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>
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<tbody>
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<td>ACCT 110</td>
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<td>ACCT 111</td>
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<td>ACCT 200</td>
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<td>ACCT 115</td>
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<td>ACCT 112</td>
<td>3</td>
<td>ACCT 217</td>
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<td>ACCT 213</td>
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<td>ECON 130</td>
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<td>FIN 151</td>
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</tr>
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<td></td>
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<td>Outside Electives</td>
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</table>

Business Management

Jack A. Fuller, Ph.D., Division Director.  
103 Business and Economics Building, (304) 293-7935.

Degree:  
*Bachelor of Science in Business Administration*

Business Management Program Objectives

Students majoring in management choose either the human resources track or the management information system track. Each curriculum is career-oriented and makes extensive use of technology.

Human resources managers deal with the “people side” of an organization. They conduct training, write performance appraisals, and hire staff. The human resources track helps students develop skills in leadership, motivation, communications, quantitative analysis, computer information systems, decision-making, and policy formulation. This program prepares students for general management by developing the skills needed
to effectively supervise employees and run an organization. People with degrees in human resources management have careers as: compensation analysts, benefits managers, recruiters, employee relations managers, labor relations representatives, and personnel managers.

**Human Resource Management Requirements**

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<tr>
<th>Hrs.</th>
<th>Totals</th>
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<td>Non-B &amp; E Liberal Studies Program Requirements</td>
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<td>Unrestricted electives (in or out of College of B &amp; E)</td>
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<tr>
<td>Required College Core Courses</td>
<td>39</td>
</tr>
<tr>
<td>Required courses in option:</td>
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<tr>
<td>ACCT 116 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MANG 201 Business Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>MANG 205 Individual and the Organization</td>
<td>3</td>
</tr>
<tr>
<td>MANG 216 Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>MANG 217 Personnel and Compensation</td>
<td>3</td>
</tr>
<tr>
<td>MANG 220 Human Resource Management Methods</td>
<td>3</td>
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<tr>
<td>BLAW 112 Commercial Law</td>
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<td>Business and Economics Electives</td>
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**Recommended Sequence of Courses**

<table>
<thead>
<tr>
<th>First semester</th>
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<th>Second semester</th>
<th>Hrs.</th>
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<td>BCOR 185</td>
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<td>MANG 205</td>
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<td>BCOR 165</td>
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<td>MANG 216</td>
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<td>MANG 220</td>
<td>3</td>
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<td>MANG 217</td>
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<td>BLAW 112</td>
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<tr>
<td>Outside Elective</td>
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</table>

**Management Information Objectives**

Management information system (MIS) managers focus on an organization’s information systems and technology. The MIS option appeals to students who enjoy working with computers and problem solving. Computer technology is critical to the way today’s organizations conduct business. There is a demand for workers who can manage a company’s technical resources. MIS students learn to analyze business problems and to design, build, and maintain computer applications for solving those problems. This program provides students with the management skills for planning, budgeting, technology assessment, and cost/benefit analysis. People with degrees in management information systems have careers as: information systems consultants, systems analysts, and information systems managers.

**Management Information Systems Requirements**

<table>
<thead>
<tr>
<th>Hrs.</th>
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<td>Non-B &amp; E Liberal Studies Program Requirements</td>
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<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>
<tr>
<td>Required Courses in option:</td>
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<tr>
<td>ACCT 116 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MANG 102 Data Base Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>MANG 103 Basic Applied Programming</td>
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</table>
MANG 205  *The Individual and the Organization* ................................. 3
MANG 231  *Systems Analysis* .............................................................. 3
MANG 232  *Systems Design and Development* ......................................... 3
Business and Economics Electives ....................................................... 9 ... 27

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

**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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<td>BCOR 185</td>
<td>3</td>
<td>If Spring Semester</td>
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<tr>
<td>BCOR 165</td>
<td>1</td>
<td>MANG 103 or ACCT 116</td>
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<td></td>
<td>If Fall Semester</td>
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<td></td>
<td></td>
<td>MANG 102 or MANG 205</td>
<td>3/3</td>
</tr>
</tbody>
</table>

<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>BCOR 210</td>
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<td>BCOR 215</td>
<td>2</td>
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<tr>
<td>MANG 231</td>
<td>3</td>
<td>MANG 232</td>
<td>3</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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<tr>
<td>If Spring Semester</td>
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<td>If Fall Semester</td>
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</tr>
<tr>
<td>MANG 103 or ACCT 116</td>
<td>3/3</td>
<td>MANG 102 or MANG 205</td>
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</tr>
</tbody>
</table>

**Economics**

William N. Trumbull, Ph.D., Division Director.
419 Business and Economics Building (304) 293-7860.

**Degree:**  
*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, and banking.

**Economics Program Requirements**

Admission to the bachelor of science in economics degree program requires admission to the College of Business and Economics. These requirements are indicated on previous pages. 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 Liberal Studies Program 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 211 and Economics 212.

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.

**Requirements**

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Non-Business and Non-Economics</td>
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<td>ENGL 1 and 2 Composition and Rhetoric</td>
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<td>LSP Cluster A Courses</td>
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<td>LSP Cluster B Courses (Other than Economics)</td>
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<td>LSP Cluster C Courses</td>
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<tr>
<td>C S 5 Introduction to Computer Applications</td>
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<td>Mathematics</td>
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<td>Other Cluster C Lab Science elective</td>
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<td>Other Electives—Non-Business and Economics</td>
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<td>Unrestricted Electives</td>
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Economics Required College Core Courses:
- ACCT 51 and 52 Principles of Accounting ........ 6
- ECON 54 and 55 Principles of Economics .......... 6
- ECON 125 Elementary Business and Economics Statistics .... 3
- ECON 211 Intermediate Microeconomic Theory ........ 3
- ECON 212 Intermediate Macroeconomic Theory ........ 3 .......... 21

Elective Courses Required in the College:
- Economics ............................................. 18
- Business .............................................. 9
- Economics or Business ............................... 12 .......... 39

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

**Recommended Sequence of Courses**

<table>
<thead>
<tr>
<th>First semester Hrs.</th>
<th>Second semester Hrs.</th>
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<tr>
<td>ECON 211 ............</td>
<td>Economics elective ... 3</td>
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<tr>
<td>Economics elective*</td>
<td>ECON 212 ............. 3</td>
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<td>B &amp; E elective ......</td>
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<table>
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<td>Outside elective ....</td>
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<td>Outside elective ....</td>
<td>Outside elective ....</td>
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</tbody>
</table>

*Most economics electives should not be taken until the student has completed ECON 211. ECON 110 and 130 can be taken while taking 211. Certain Special Topics courses may also be taken this semester.

**Students interested in graduate work in economics should take ECON 220 and ECON 226.

**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, (304) 293-7860.

Degree:
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 54 and 55.

Finance Program

<table>
<thead>
<tr>
<th>Hrs.</th>
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<td>Unrestricted electives (in or out of B &amp; E) See below</td>
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<td>Required College Core Courses</td>
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<tr>
<td>FIN 112 Intermediate Finance</td>
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<td>FIN 115 General Insurance</td>
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<td>FIN 150 Investments</td>
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<td>FIN 151 Financial Institutions</td>
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<td>FIN 290 Advanced Finance*</td>
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<td>FIN 200-level electives (See below)</td>
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<tr>
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Recommended Sequence of Courses

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<tr>
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<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
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<tr>
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</tbody>
</table>

* The prerequisite to FIN 290 is completion of 15 hours in finance, including FIN 112 (no exceptions.) FIN 290 is to be taken during the final semester of the student’s undergraduate program.
Marketing
Jack A. Fuller, Ph.D. Division Director.
103 Business and Economics Building, (304) 293-7935.

Degree:  
Bachelor of Science in Business Administration

Marketing Majors
Marketing professionals are involved in planning, promoting, selling, and distributing products and services. Sales and advertising are two common career tracks. Additional opportunities include product management, global marketing, distribution, and marketing research. Marketing professionals are employed throughout the world by manufacturers, advertising agencies, retailers, consulting firms, product testing laboratories, business service firms, etc. The marketing program, by providing a broad working knowledge of the theory and practice of marketing, prepares students for a professional career or for graduate study. People with degrees in marketing have careers in: marketing research, marketing management, product management, distribution and logistics, retail management, marketing consulting, services marketing, international marketing, sales management, advertising research, sales promotion, and purchasing and merchandise buying.

Marketing Program Requirements  Hrs.  Totals
Non-B & E Liberal Studies Program Requirements ............................................... 53
Unrestricted Electives (in or out of College of B & E) .......................................... 9
Required College Core Courses ........................................................................ 39
Required Courses in Major:
  MKTG 113 Marketing Research ..................................................... 3
  MKTG 205 Consumer Behavior ..................................................... 3
  MKTG 208 Global Marketing .......................................................... 3
  MKTG 211 Marketing Management ............................................... 3
  MKTG Electives* .......................................................................... 12
Business and/or Economics Electives .................................................. 3 ........  27
Grand Total .............................................................................................. 128

* MKTG 297 cannot be used for Marketing elective credit.

Recommended Sequence of Courses
First Semester  Hrs.  Second Semester  Hrs.
BCOR 150 ..................................... 3  BCOR 170 ..................................... 5
BCOR 160 ..................................... 3  BCOR 175 ..................................... 1
BCOR 180 ..................................... 5  MKTG 113 ..................................... 3
BCOR 185 ..................................... 3  MKTG Elective .................................. 3
BCOR 165 ..................................... 1  MKTG Elective .................................. 3
Outside Elective ..................................... 3  Outside Elective ..................................... 3

Third Semester  Hrs.  Fourth Semester  Hrs.
BCOR 210 ..................................... 1  BCOR 215 ..................................... 2
MKTG 205 ..................................... 3  MKTG 211 ..................................... 3
MKTG 208 ..................................... 3  MKTG Elective .................................. 3
MKTG Elective ..................................... 3  B & E Elective .................................. 3
Outside Elective ..................................... 3  Outside Elective ..................................... 3
College of Creative Arts
Philip J. Faini, M.M., Dean and Director.
Bernard Schultz, Ph.D., Associate Dean for Academic Affairs.

Degree Programs:
Bachelor of Arts (in Visual and Performing Arts)
  Art History
  Dance
  Music
  Theatre
Bachelor of Fine Arts
  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 center’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 performance grants are available each year in the divisions of art, music, and theatre. The divisions of music and theatre 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 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 Art reserves the right to review portfolios and the Division of Theatre 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. 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 reviews. Exceptions may be made in the case of first-semester freshman students.

Graduation Requirements
The divisions of art, music, and theatre have specific graduation requirements for their programs. Please refer to the individual program descriptions for this information.

Application for Graduation
During the second semester of your junior year, please come to the College of Creative Arts Records Office and request a review of your records and the requirements of your particular program. During the first month of your last semester (the one in which you expect to graduate) or summer session, you will apply for graduation and diploma. If you do not actually graduate when you expected to, you must re-apply for a later date. No candidate can graduate without this application.
Division of Art

Degree Programs:
Bachelor of Arts
Art History
Bachelor of Fine Arts
Visual Art
(Ceramics, Graphic Design, Painting, Printmaking, Sculpture)
Certification Option with the B.F.A.

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 course work for teacher certification in art, K-12.

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. 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 continuing work toward a degree in art.

Transfer applicants must establish transfer credit from other institutions during the first semester in which they are enrolled in the Division of Art. 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 requires a portfolio examination for placement in the program.

Bachelor of Arts Degree
The major in the Art History of Art 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 liberal studies program requirements. Students are encouraged to study abroad during one or two semesters 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 academic advisor in the Division of Art.

Advising
The College of Creative Arts recommends that all art majors confer regularly with their advisors in order to maintain the correct distribution of course work 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.
Portfolio Review
The Division of Art reserves the right to require a portfolio review to determine a student’s retention in a program or emphasis.

Audit, Credit by Examination, Pass/Fail, and Non-Art Major Courses
No studio 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 WVU Art 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 enrolled in those studio classes in which materials are supplied to share the cost through an art fee assessed each semester. The chairperson can provide a complete list of materials supplied. As the art fee is used to purchase supplies for common consumption, students will also to purchase materials for individual or specialized projects.

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 129-130 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, and sculpture, as well as a program of art history. Teacher certification in art, K-12, 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.

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, the B.F.A. candidate must complete curriculum requirements in order to graduate. The B.F.A. curriculum includes required and elective art courses, art history courses, and University-established academic (liberal studies) requirements. During the first two years, the art student must complete a 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 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 credit-hour minimum requirements are as follows:

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Studio (12 credits in drawing; 30 credits in major area)</th>
<th>72</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Art orientation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Art history</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Liberal arts (required by the University)</td>
<td>38-39</td>
</tr>
<tr>
<td></td>
<td>Open Electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>129-130</td>
</tr>
</tbody>
</table>

Visual Art Programs

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

Ceramics, Graphic Design, Painting, Printmaking, Sculpture

In order to complete the B.F.A. degree program in four years, a student must take from 15 to 18 credit hours per semester, or 30 to 36 credits per year. Thirty credit hours are required in the studio major area: six hours 100-level courses and 24 hours 200-level courses. Additional information is available from the coordinator of the various areas or 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 five major studio areas which are most suited to their particular interests. Figure drawing and advanced drawing is also required in the second year. Lower-division art requirements are as follows:

<table>
<thead>
<tr>
<th>Hours</th>
<th>Art 11 Drawing</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Art 12 Drawing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Art 100 Art Orientation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Art 121 Visual Foundation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Art 122 Visual Foundation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Art 105 Survey of Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Art 106 Survey of Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Art 211 Drawing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Art 212 Drawing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Studio Introductory</td>
<td>12</td>
</tr>
<tr>
<td>Lower-Division Art Total:</td>
<td>37</td>
<td></td>
</tr>
</tbody>
</table>
Upper Division

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

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 as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 200 Studio Major</td>
<td>24</td>
</tr>
<tr>
<td>ART 100/200 Art electives</td>
<td>18</td>
</tr>
<tr>
<td>ART 200 Art History</td>
<td>6</td>
</tr>
</tbody>
</table>

Upper-Division Art Total: 48

B.F.A. Liberal Arts Requirements

Liberal arts requirements are defined by WVU. The undergraduate art student must successfully complete a minimum of 39 semester credit hours of liberal arts to qualify for graduation. To satisfy this requirement, the following distribution of liberal arts credits must be achieved:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1 and 2</td>
<td>6</td>
</tr>
<tr>
<td>MATH</td>
<td>3</td>
</tr>
<tr>
<td>Cluster A (Humanities)</td>
<td>6</td>
</tr>
<tr>
<td>Cluster B (Social Sciences)</td>
<td>12</td>
</tr>
<tr>
<td>Cluster C (Natural Sciences)</td>
<td>11–12</td>
</tr>
</tbody>
</table>

Liberal Arts Total: 38–39

Open electives: 6

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

Ceramics, Graphic Design, Painting, Printmaking, Sculpture

First year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 100 Art Orientation</td>
<td>1</td>
</tr>
<tr>
<td>ART 11 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 105 Art Survey</td>
<td>3</td>
</tr>
<tr>
<td>ART 121 Visual Foundation</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1</td>
<td>3</td>
</tr>
<tr>
<td>LSP Cluster C</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 17

Second year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 211 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 100-level studio major*</td>
<td>3</td>
</tr>
<tr>
<td>ART 100-level elective*</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2</td>
<td>3</td>
</tr>
<tr>
<td>LSP Cluster B</td>
<td>3</td>
</tr>
<tr>
<td>Elective***</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 18

Second year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 212 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 100-level studio major*</td>
<td>3</td>
</tr>
<tr>
<td>ART 100-level elective*</td>
<td>3</td>
</tr>
<tr>
<td>LSP Cluster B</td>
<td>3</td>
</tr>
<tr>
<td>LSP Cluster A</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 15
### 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 200 Studio Major</td>
<td>6</td>
</tr>
<tr>
<td>ART Elective**</td>
<td>6</td>
<td>ART Electives**</td>
<td>6</td>
</tr>
<tr>
<td>ART 200 Art History</td>
<td>3</td>
<td>ART 200 Art History</td>
<td>3</td>
</tr>
<tr>
<td>LSP Cluster C***</td>
<td>3-4</td>
<td>MATH</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15-16</td>
<td><strong>Total</strong></td>
<td>18</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 200 Studio Major</td>
<td>6</td>
<td>ART 200 Studio Major</td>
<td>9</td>
</tr>
<tr>
<td>ART Elective**</td>
<td>3</td>
<td>ART Elective</td>
<td>3</td>
</tr>
<tr>
<td>LSP Cluster A</td>
<td>3</td>
<td>Elective**</td>
<td>3</td>
</tr>
<tr>
<td>LSP Cluster B</td>
<td>3</td>
<td><strong>Total</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

Thirty credit hours are required in the studio major area: six hours 100-level and 24 hours 200-level. Additional information is available from the coordinator of the various areas or divisional academic advisor.

*The total of 12 hours of required 100-level must include three of the five major studio areas.

**Art electives may be either 100- or 200-level. Two sequential semesters of 100-level courses are prerequisite for 200-level courses in any given area.

***The 12-hour cluster requirement may be fulfilled by one 3-hour and two 4-hour courses; an additional hour would be required elsewhere.

****Electives may be art history, studio art, or other courses offered by other units in the University.

### Summary of Requirements

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio and art electives (includes Art Orientation)</td>
</tr>
<tr>
<td>Art History</td>
</tr>
<tr>
<td>LSP Cluster Requirements</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

### Bachelor of Fine Arts with Certification (B.F.A.)

#### Ceramics, Graphic Design, Painting, Printmaking, Sculpture, with Teacher Certification, K-12

Students wishing certification to teach K-12 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 art advisor, the division chairperson, or the art education coordinator.

#### 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 liberal studies and education course requirements, four and a half to five years of school work should be anticipated. Students wishing certification to teach K-12 in West Virginia must complete competency requirements established by the state in addition to Division of Art B.F.A. degree requirements. B.F.A. degree with certification credit-hour minimum requirements are as follows:

#### Liberal Arts and Education Requirements

Liberal arts 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.
### 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 11 Drawing I</td>
<td>3</td>
<td>ART 12 Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>ART 105 Art Survey I</td>
<td>3</td>
<td>ART 106 Art Survey II</td>
<td>3</td>
</tr>
<tr>
<td>ART 121 Visual Foundation I</td>
<td>3</td>
<td>ART 122 Visual Foundation II</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1</td>
<td>3</td>
<td>Cluster B</td>
<td>3</td>
</tr>
<tr>
<td>Cluster C</td>
<td>4</td>
<td>Cluster B</td>
<td>3</td>
</tr>
<tr>
<td>ART 100 Orientation</td>
<td>1</td>
<td>Cluster A MUSC or</td>
<td>3</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>

### 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 Drawing</td>
<td>3</td>
<td>ART 212 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 113/114 Painting</td>
<td>3</td>
<td>ART 130/131 Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART 126/127 Sculpture</td>
<td>3</td>
<td>ART 140/141 Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2</td>
<td>3</td>
<td>Cluster B</td>
<td>3</td>
</tr>
<tr>
<td>Cluster C</td>
<td>3</td>
<td>Cluster B</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</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 100 Studio Major</td>
<td>3</td>
<td>ART 200 Studio Major</td>
<td>6</td>
</tr>
<tr>
<td>ART 100/200 Art Elective(s)</td>
<td>3</td>
<td>ART 164 Art Education</td>
<td>3</td>
</tr>
<tr>
<td>PE</td>
<td>1</td>
<td>Cluster B</td>
<td>3</td>
</tr>
<tr>
<td>Cluster A (Lit)</td>
<td>3</td>
<td>MATH</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</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>ART 200 Studio Major</td>
<td>6</td>
<td>ART 200 Studio Major</td>
<td>6</td>
</tr>
<tr>
<td>EDUC 101 Learning I</td>
<td>2</td>
<td>ART 200 Art History</td>
<td>3</td>
</tr>
<tr>
<td>Cluster A</td>
<td>4</td>
<td>ART 166 Art Education</td>
<td>4</td>
</tr>
<tr>
<td>ART 165 Art Education</td>
<td>4</td>
<td>EDUC 102 Learning II</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></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 Art History</td>
<td>3</td>
<td>C&amp;I 104</td>
<td>4</td>
</tr>
<tr>
<td>ART 265 Art Education</td>
<td>3</td>
<td>C&amp;I 187</td>
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Division of Music
Terry Ewell, Ph.D., Chairperson. Bassoon, Theory.
David Bess, Ph.D., Assistant Chair of Undergraduate Curriculum.
Virginia Thompson, D.M.A., Assistant Chair of Graduate Curriculum.

Degree Programs:
Bachelor of Music
  Majors or Areas of Emphasis:
  Music Education
  Performance
    Band or Orchestra Instrument, Guitar
    Organ
    Piano (traditional, coaching-accompanying, piano pedagogy, jazz)
    Voice
    Woodwinds
  Jazz Studies
  Music Composition
  Music History

Bachelor of Arts
  Music Minor

The Division of Music has been an important part of the University'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 forty-four 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 West Virginia University and in the state of West Virginia.

Mission
The Division of Music, as part of West Virginia University's College of Creative Arts, offers professional preparation for careers in composition, performance, and teaching of music. The division's 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 many activities, including presentation, research, service, performance, and recruitment. The division is supported by the resources of a comprehensive land grant university and supplemented by grants and private donations.

The division's mission asserts that music is vital to our culture and vital to understanding the culture of other peoples. This is achieved through a curriculum designed to prepare students to create, to recreate, and to educate. Create: to explore new ways of expressing the human experience through music. Recreate: to touch history and bring it to life, enabling musicians, through performance, to reach into the realm of the soul and express the very things that make us human. Educate: to enable future generations to experience music as a union of cognitive and creative pursuits.

We believe that education for professional careers in music must encompass achievement of specific musical and pedagogical skills as well as a liberal education that prepares individuals to be citizens of the world. We are committed to providing the highest levels of creative, intellectual, and cultural experiences in music to the University, the state, and the region.

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 K through 12, 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. Those concentrating in music history are prepared to continue their studies at the graduate level, perhaps with the ultimate goal of a career in higher education. 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. A test in music fundamentals is also required. Auditions are held principally in February and March in Morgantown. Dates for auditions and details concerning them are available from the Division of Music. Special accommodations may be made by contacting the Division of Music at (304) 293-5511 x 3196. The audition is a preliminary assessment of your potential for success in the program. 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). You are expected to own 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
Carolyn and Clifford Brown Music Alumni Scholarships.
Endowed by gifts in memory of the former professor of music, chairman of music education, and assistant dean of the Creative Arts Center, and his wife. Professor Brown was an alumnus of West Virginia University (B.S. ’33).

Frank E. and Margaret S. Lorince Scholarships.
Endowed by gifts in memory of the former professor of music, chairman of music theory and history, and acting chairman of the Division of Music, and in honor of his wife, former professor of music, director of the Music Preparatory Department, and assistant dean of the College of Creative Arts.

Music Faculty Recognition Scholarships.
Endowed by Stuart F. and Stephanie H. Bloch, and by gifts in memory of:
Thomas S. Canning, former professor of music (composition, theory).
Richard E. Duncan, former dean of the School of Music, and founding dean and director of the Creative Arts Center.
Bernard R. McGregor, former associate professor of music and assistant dean of the College of Creative Arts, and Mrs. McGregor.
R. Scott Stringham, former associate professor of music (musicology, music appreciation).
Kenneth Wood, former associate professor of music (violin) and director of the University Orchestra.
In honor of:
Clyde M. English, former professor of music (organ).
Philip J. Faini, professor of music and dean of the College of Creative Arts.
Eleanor Tucker Donley Memorial Scholarships.
   Endowed by Demain (Donley) Whitesides.
Geraldine Hess Lyon Scholarships.
   Endowed by Gale H. Lyon in memory of his wife.
Barbara Jean Norman Jones Scholarships.
   Endowed by family and friends.
John R. Barnes Scholarships.
   Endowed by family and friends.
Ida Cope Tait Music Scholarships.
   Endowed by a gift from the estate of Alexandra Endsley Brown.
Virginia Holden Wellock Music Scholarships.
   Endowed by Virginia Holden Wellock.
Edith Roberts Williams Music Scholarships.
   Endowed by Mrs. Williams in memory of her husband.
Morgantown Music Club Scholarships.
   Donated by the club from monies raised at the annual Concert Gala.
University Presidential Scholarships in the Arts.
College of Creative Arts Performance Grants.
Performing Arts Scholarships.
   Supported by the West Virginia University Foundation.
Loyalty Permanent Endowment Fund Scholarships.
   Supported by the West Virginia University Alumni Association.
Presser Scholarships.
   Supported by the Theodore Presser Foundation.
Radiological Consultant Associates Scholarships.
Musical Performing Groups
   One of the hallmarks of the WVU 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, and the Faculty Piano Quartet. 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. After completing four semesters in one of the bands or the orchestra, especially qualified members of these organizations may continue service in them upon invitation and receive allowances in the form of remission of fees amounting to $30.00 per semester.
   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 WVU undergraduate 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 further information contact the Director of the Community Arts Program at (304) 293-5511 x 3152.
   The award-winning Mountaineer Marching Band (“The Pride of West Virginia”) of over 350 members is open, by audition, to all qualified students in the University. Its activities are confined to the first semester, during which time 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 approximately 40 wind and percussion players chosen by audition. The ensemble performs challenging literature particularly appropriate to its size and special characteristics.
The 85-member **Concert Band** is open to all qualified students in the University. Its activities are confined to the second semester, during which time it rehearses and performs both traditional and contemporary band music.

The 35-member **Pep Band** is open, by audition, to all qualified students in the University. It performs at both 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 vocalist 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. Membership is by audition.

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, and string instruments and include the internationally-acclaimed **Percussion Ensemble** (Percussion ’90), **African Music and Dance Ensemble**, and the **New Music Ensemble**.

**General Requirements for the Bachelor of Music and Bachelor of Arts 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, if piano is not your major instrument. In addition to fulfilling the proficiency level requirement in piano indicated in the curriculum, you are required to demonstrate proficiency in keyboard harmony by passing a special examination. Music education majors must satisfy additional proficiencies listed below.

Proficiency levels in your principal performance area 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.

**Major Ensemble Requirement** You must register for a major ensemble each semester of residence. Major ensembles are Music 90, 91, 100, 102, 103, and 105. 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.
Chamber Music Requirement: Courses which satisfy the chamber music requirements for the B. M. and B. A. are Music 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 92, 93, 94, 95, 96, 97, 98, 140, 141, 142, 143, 144, 145, 146, 147, 148, and 149.

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 10 (Music Convocation) and to attend five recitals or concerts and five convocation meetings per semester. This requirement is adjusted for transfer students.

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 Art 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 2.5 average for certification.

If you achieve a grade of A in Music 66 (sophomore written theory), you may elect an upper division theory analysis course (Music 265 or 269) in place of the Music 68 requirement. If you achieve a grade of A in Music 65 (sophomore aural theory), you may elect an upper division theory elective in place of the Music 67 requirement.

Music Theory and History Electives Unless specified as a degree requirement upper division theory electives are Music 160, 171, 172, 263, 264, 265, 267, 268, 269, 273, 274, 275. Unless specified as a degree requirement, upper division history electives are Music 221-227.

Deficiencies If you are admitted conditionally, you must make up deficiencies as soon as possible. Lack of reasonable progress will place you on probation. If in the judgement 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.

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, please refer to the current undergraduate student policies for the Division of Music contained on the Division of Music web site or available from the office of the Chair of Music.

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 K-12, which allows them to teach instrumental, vocal, and general music in the public schools of West Virginia. Music education students should begin as freshman at proficiency level 3 on their principal performance medium (instrument or voice) and must complete proficiency level 7 on the medium to be eligible for graduation.

Pre-Professional Requirements Before enrolling in professional education methods courses (Education 101, 102) and music education methods courses (Music 151, 152, 153), students must pass the National Teacher Examination Pre Professional Skills Test (PPST), successfully complete pre-professional music course requirements, and pass the following proficiencies: piano, recorder, guitar, and four additional proficiencies. 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 SAT. Pre professional course requirements are: Music 31, 33, 40, 44, 45, 51, 61-66; Music 78 or Music 78 exemption and Music 49.
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 the following woodwind, brass, string, and percussion instruments: flute, clarinet or saxophone, and oboe or bassoon; trumpet or tuba, horn, and trombone; violin, viola, cello, and bass; snare drum, timpani, marimba, drum set, and world percussion (pitched and non-pitched instruments in a given culture). For the piano proficiency, students must achieve a proficiency level 2 (if piano is not their major instrument).

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 2.5 in all courses taken at WVU and at any other institution (this includes courses taken at other institutions which are not accepted by WVU); b) a GPA of 2.5 in all music (content area) courses; c) a GPA of 2.5 in professional education courses and music education methods courses (Music 40, 151, 152, 153; Education 101, 102) with no D's or F's 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 Teacher 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 goal. Due to the limited number of music placements in the Morgantown area, students should plan to relocate during the semester in which they student teach. Student requests for specific regions, school districts, etc. will not be entertained by the coordinator of the music student teaching program unless the student can demonstrate that she or he is faced with severe personal constraints. Teaching placements will generally be within a 100 mile radius of Morgantown. Students should plan to provide their own transportation during the student teaching semester.

Required Courses
Professional Education (20 Credits)
   Education 101, 102, 4 cr
   Curriculum and Instruction 104, 187, 188, 16 cr
Studies in Music (74-78 Credits)
   Music 10 Convocation (six semesters) 0 cr
   Music 31 Introduction to Music Listening 1 cr
   Music 33-34 Music Literature 6 cr
   Music 40, Introduction to Music Education 1 cr
   Music 44-47 49, Music Pedagogy 10 cr
   Music 51, 52, 53, Conducting 6 cr
   Music 61, 63, 65, 67, Aural Theory 8 cr
   Music 62, 64, 66, 68, Written Theory 8 cr
   Music 70-75 Secondary Piano (if piano is not principal) 4 cr
   Music 78 (for students who do not meet proficiency for Music 49) 2 cr
   Music 80-98, 140-149 Chamber Music (instrumental performers only) 1 cr
   Music 106-127 Principal Performance Studies 14 cr
   Music 151 Instrumental Music Education 3 cr
   Music 152 Vocal Music Education 3 cr
   Music 153 General Music Education 3 cr
   Music 248 Music Arranging for Public School Groups 2 cr
   Major Ensemble 7 cr
General Studies (41-42 Credits)
- English 1-2 Composition and Rhetoric, 6 cr
- Mathematics, 3 cr
- Cluster A Courses, 9 cr
  (Must include either Art 30 or Theatre 30, an English Literature course, and a history course in addition to Music 33-34)
- Cluster B Courses, 12 cr
- Cluster C Courses, 11-12 cr

Total Credits Required: 138-142

Combined Performance/Music Education Curriculum
An optional program can be arranged for outstanding students who desire to meet the requirements of majors in both performance and music education. Admission to this rigorous program is by written consent of the coordinator of the appropriate performance area and the coordinator of music education after the student has completed two semesters. This curriculum satisfies the course requirements of the professional certificate, grades K-12. 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 which 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 6 in the principal performance area at the time of audition, and must complete proficiency level 10 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 Instrument, Orchestra Instrument, or Guitar.
- Flute, oboe, clarinet, saxophone, bassoon, horn, trumpet, trombone, euphonium, tuba, percussion, violin, viola, cello, double bass, and guitar. Proficiency level 10, three upper-level recitals required for graduation.

Required Courses
Major Area (48 Credits)
- Music 106-126 Applied Music in a band, orchestra instrument, or guitar, 32 cr
- Music 216-217 Methods and Pedagogy, 2 cr
- Music 299 Recital, 2 cr
- Chamber Music, 4 cr
- Major Ensemble, 8 cr

Music Supportive Courses (33 Credits)
- Music 10 Convocation (six semesters), 0 cr
- Music 31 Introduction to Music Listening, 1 cr
- Music 33-34 Music Literature, 6 cr
- Music 51 Conducting, 2 cr
- Music 61, 63, 65, 67 Aural Theory, 8 cr
- Music 62, 64, 66, 68 Written Theory, 8 cr
- Music 70-75 Piano Class, 8 cr

College of Creative Arts 179
General Studies (38-39 Credits)
   English 1-2 Composition and Rhetoric, 6 cr
   Mathematics, 3 cr
   Cluster A Courses, 6 cr
   Cluster B Courses 12, cr
   Cluster C Courses 11-12, cr

Music Electives (13 Credits)
   Music Electives (any area), 4 cr
   Theory Electives, 6 cr
   Music History Elective, 3 cr

Total Credits Required: 132-133

Performance Curriculum—Organ
   In addition to the required proficiency level 10 in organ, this curriculum also re-
   quires achievement of proficiency level 5 in piano before graduation. At least six of
   the eight semesters of required participation in a major ensemble must be as a mem-
   ber of a choral group (Music 102 or 105). Three upper-level recitals also required for
   graduation.

Required Courses
   Major Area (54 Credits)
      Music 118 Applied Music Piano, 8 cr
      Music 119 Applied Music Pipe Organ, 32 cr
      Music 216-217 Methods and Pedagogy (Organ), 2 cr
      Music 218-219 Repertoire, 2 cr
      Music 299 Recital, 2 cr
      Major Ensemble, 8 cr

Music Supportive Courses (34 Credits)
   Music 10 Convocation (six semesters), 0 cr
   Music 31 Introduction to Music Listening, 1 cr
   Music 33-34 Music Literature, 6 cr
   Music 51 Conducting, 2 cr
   Music 61, 63, 65, 67 Aural Theory, 8 cr
   Music 62, 64, 66, 68 Written Theory, 8 cr
   Theory Electives, 6 cr
   Music History Elective 3 cr

General Studies (38-39 Credits)
   English 1-2 Composition and Rhetoric, 6 cr
   Mathematics, 3 cr
   Cluster A Courses, 6 cr
   Cluster B Courses, 12 cr
   Cluster C Courses, 11-12 cr

Electives (10 Credits)
   Music Electives (in any area), 10 cr

Total Credits Required: 136-137
Performance Curriculum—Piano (Traditional Emphasis)
Proficiency level 10, three upper-level recitals required for graduation.

Required Courses
Major Area (46 Credits)
- Music 118 Applied Music (Piano), 32 cr
- Music 216-217 Methods and Pedagogy (Piano), 4 cr
- Music 218-219 Repertoire, (Piano) 4 cr
- Music 299 Recital, 2 cr
- Major ensemble, 2 cr
- Chamber Music, 2 cr (Must be performed on a keyboard instrument.)

Music Supportive Courses (34 Credits)
- Music 10 Convocation (six semesters), 0 cr
- Music 31 Introduction to Music Listening, 1 cr
- Music 33-34 Music Literature, 6 cr
- Music 51 Conducting, 2 cr
- Music 61, 63, 65, 67 Aural Theory, 8 cr
- Music 62, 64, 66, 68 Written Theory, 8 cr
- Theory Electives, 6 cr
- Music History Elective, 3 cr

General Studies (38-39 Credits)
- English 1-2 Composition and Rhetoric, 6 cr
- Mathematics, 3 cr
- Cluster A Courses, 6 cr
- Cluster B Courses, 12 cr
- Cluster C Courses, 11-12 cr

Electives (12 Credits)
- Music Electives (from any area), 8 cr
- Chamber Music Electives, 2 cr
- Major Ensemble or Chamber Music Electives, 2 cr

Total Credits Required: 130-131

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). Proficiency level 10 required. No solo performances on upper level recitals are required.

Required Courses
Major Area (44 Credits)
- Music 118 Applied Music Piano, 32 cr
- Music 118-119 Methods and Pedagogy (Piano), 4 cr
- Music 218-219 Repertoire (Piano), 4 cr
- Music 299 Recital, 2 cr
- Major Ensemble, 2 cr

Music Supportive Courses (25 Credits)
- Music 10 Convocation (six semesters), 0 cr
- Music 31 Introduction to Music Listening, 1 cr
- Music 33-34 Music Literature, 6 cr
Music 51 Conducting, 2 cr
Music 61, 63, 65, 67 Aural Theory, 8 cr
Music 62, 64, 66, 68 Written Theory, 8 cr

Coaching and Accompanying Courses (22 Credits)
Music 19 Introduction to Opera Theatre, 6 cr
Music 80-89, 93-98, or 140-149 Chamber Music (as an accompanist), 4 cr
Music 161 Diction, 8 cr
Music 218-219 Repertoire (Voice), 4 cr

General Studies (38-39 Credits)
English 1-2 Composition and Rhetoric, 6 cr
Mathematics, 3 cr
Cluster A Courses, 6 cr
Cluster B Courses, 12 cr
Cluster C Courses, 11-12 cr

Electives (11 Credits)
Chamber Music, 2 cr (Must be performed on a keyboard instrument.)
Theory Electives, 6 cr
Music History Elective, 3 cr

Total Credits Required: 140-141

Performance Curriculum—Piano (Pedagogy Emphasis)
Admission only by approval of the piano faculty. Required for graduation: proficiency level 9, senior recital, and three performances on upper-level recitals.

Required Courses
Major Area of Performance (40 Credits)
Music 118 Applied Music Piano, 32 cr
Music 299 Recital, 2 cr
Chamber Music, 4 cr (At least two semesters must be performed on a keyboard instrument.)
Major Ensemble, 2 cr

Music Supportive Courses (25 Credits)
Music 10 Convocation (six semesters), 0 cr
Music 31 Introduction to Music Listening, 1 cr
Music 33-34 Music Literature, 6 cr
Music 51 Conducting, 2 cr
Music 61, 63, 65, 67 Aural Theory, 8 cr
Music 62, 64, 66, 68 Written Theory, 8 cr

Pedagogy Courses (19 Credits)
Music 153 Music Education, 3 cr
Music 200 Directed Music Studies: Pedagogy Project, 2 cr
Music 210 Piano Class Methods and Materials, 3 cr
Music 212 History of Keyboard Pedagogy and Technique, 3 cr
Music 216-217 Methods and Pedagogy (Piano), 4 cr
Music 218-219 Repertoire (Piano), 4 cr
General Studies (38-39 Credits)
  English 1-2 Composition and Rhetoric, 6 cr
  Mathematics, 3 cr
  Cluster A Courses, 6 cr
  Cluster B Courses, 12 cr
  Cluster C Courses, 11-12 cr

Electives (11 credits)
  Chamber Music, 2 cr
  Theory Electives, 6 cr
  Music History Elective, 3 cr

**Total Credits Required: 133-134**

**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 9; senior recital (no more than one-half of program consisting of jazz); and three upper-level recital performances.

**Required Courses**
**Major Area (54 Credits)**
  Music 112 Applied Music (Jazz), 8 cr
  Music 118 Applied Music (Piano), 24 cr
  Music 213-214 Beginning and Advanced Improvisation, 4 cr
  Music 216-217 Methods and Pedagogy (Piano), 4 cr
  Music 218-219 Repertoire (Piano), 4 cr
  Music 299 Recital, 2 cr
  Chamber Music (Must perform jazz piano), 6 cr
  Major ensemble, 2 cr

**Music Supportive Courses (34 Credits)**
  Music 10 Convocation (six semesters), 0 cr
  Music 31 Introduction to Music Listening, 1 cr
  Music 33-34 Music Literature, 6 cr
  Music 51 Conducting, 2 cr
  Music 61 63, 65, 67 Aural Theory, 8 cr
  Music 62, 64, 66, 68 Written Theory, 8 cr
  Theory Electives, 6 cr
  Music History Elective, 3 cr

**General Studies (38-39 Credits)**
  English 1-2 Composition and Rhetoric, 6 cr
  Mathematics, 3 cr
  Cluster A Courses, 6 cr
  Cluster B Courses, 12 cr
  Cluster C Courses, 11-12 cr

**Electives (4 credits)**
  Music Electives (from any area), 4 cr

**Total Credits Required: 130-131**

**Performance Curriculum—Voice**
  In addition to the required proficiency level 10 in voice, a student completing this curriculum must also achieve proficiency level 3 in piano before graduation. One year of Italian, French, or German is required. Three upper-level recitals required.
**Required Courses**

**Major Area (60 credits)**
- Music 19 Opera Theatre, 4 cr
- Music 102 or 105 Choral Ensemble (or 2 cr in M97-98, M147-149), 8 cr
- Music 127 Applied Music (Voice), 32 cr
- Music 161 Diction, 8 cr
- Music 216-217 Methods and Pedagogy (Voice), 2 cr
- Music 218-219 Repertoire (Voice), 4 cr
- Music 299 Recital, 2 cr

**Music Supportive Courses (33 Credits)**
- Music 10 Convocation (six semesters), 0 cr
- Music 31 Introduction to Music Listening, 1 cr
- Music 33-34 Music Literature, 6 cr
- Music 51 Conducting, 2 cr
- Music 61, 63, 65, 67 Aural Theory, 8 cr
- Music 62, 64, 66, 68 Written Theory, 8 cr
- Music 70-75 Piano, 8 cr

**General Studies (41-42)**
- English 1-2 Composition and Rhetoric, 6 cr
- Mathematics, 3 cr
- Cluster A Courses, 9 cr (Must be one year of French, German, or Italian)
- Cluster B Courses, 12 cr
- Cluster C Courses, 11-12 cr

**Electives (9 Credits)**
- Theory Electives, 6 cr
- Music History Elective, 3 cr

**Total Credits Required: 143-144**

**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 9.
- Two secondary major woodwind instruments—Proficiency Level 7.
- Two minor woodwind instruments—Proficiency Level 4.
- Piano—Proficiency Level 2.

**Required Courses**

**Major Area (64 Credits)**
- Music 106,108,110, 115 or 120 Applied Music, 42 cr
- Music 216-217 Methods and Pedagogy, 2 cr
- Music 299 Recital, 2 cr
- Chamber Music, 6 cr
- Major Ensemble, 8 cr
Music Supportive Courses (33 Credits)
- Music 10 Convocation (six semesters), 0 cr
- Music 31 Introduction to Music Listening, 1 cr
- Music 33-34 Music Literature, 6 cr
- Music 51 Conducting, 2 cr
- Music 61, 63, 65, 67 Aural Theory, 8 cr
- Music 62, 64, 66, 68 Written Theory, 8 cr
- Music 70-75 Piano Class, 4 cr
- Music 171 and 172 Instrumentation, Orchestration, Arranging, 4 cr

General Studies (38-39 Credits)
- English 1-2, Composition and Rhetoric, 6 cr
- Mathematics, 3 cr
- Cluster A Courses, 6 cr
- Cluster B Courses, 12 cr
- Cluster C Courses, 11-12 cr

Electives (9 Credits)
- Theory Electives, 6 cr
- Music History, 3 cr

Total Credits Required: 136-137

Bachelor of Music with a Major in Jazz Studies
Admission only by approval of jazz area faculty. Proficiency level 10 in jazz performance and level 5 in classical performance required for graduation.

Required Courses
Major Area (46 Credits)
- Music 106-127 Applied Music, 32 cr
- Music 213 Intro to Jazz Improvisation, 2 cr
- Music 214 Advanced Jazz Improvisation, 2 cr
- Music 299 Recital, 2 cr
- Chamber Music, 5 cr (Must be in jazz ensembles)
- Large Ensemble, or Music 149, Chamber Accompaniment, 3 cr

Music Supportive Courses (42 Credits, 34 Credits for Keyboard Performers)
- Music 10 Convocation (six semesters), 0 cr
- Music 31 Introduction to Music Listening, 1 cr
- Music 33-34 Music Literature, 6 cr
- Music 51 Conducting, 2 cr
- Music 61, 63, 65, 67 Aural Theory, 8 cr
- Music 62, 64, 66, 68 Written Theory, 8 cr
- Music 70-75 Piano Class, 8 cr (Not required for keyboard performers)
- Music 226 History of Jazz, 3 cr
- Music 273 Arranging Small Jazz Ensemble, 2 cr
- Music 274 Arranging Large Jazz Ensemble, 2 cr
- Music 275 Jazz Harmony, 2 cr

General Studies (38-39 Credits)
- English 1-2 Composition and Rhetoric, 6 cr
- Mathematics, 3 cr
- Cluster A Courses, 6 cr
- Cluster B Courses, 12 cr
- Cluster C Courses, 11-12 cr
Electives (8 Credits)
   Music Electives, (in any area), 8 cr

**Total Credits Required: 134-135 (Keyboard Performers 126-127)**

**Bachelor of Music with a Major in Composition**
A composition major should enter as a freshman having achieved proficiency level 4 on the student's major instrument, and must complete proficiency level 8 on that instrument before graduation. If piano is not the major instrument, the student must achieve a level 4 on piano. The student must reach level 4 before earning four credits, the remaining credits are treated as free electives. Piano majors reduce total curricular credits by four. An average of at least B in the required freshman and sophomore theory courses (MUSC 61-68) 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 266) must be in composition. Majors in this curriculum must present two solo performances on the major instrument in upper level recitals before graduation.

**Required Courses**

**Major Area (35 credits)**
- Music 60 *Introduction to Composition*, 4 cr
- Music 160 *Composition*, 4 cr
- Music 171 *Instrumentation*, 2 cr
- Music 172 *Orchestration and Band Arranging*, 2 cr
- Music 260, *Upper Division Composition*, 8 cr
- Music 263-264 *Counterpoint*, 4 cr
- Music 265 or 269 *Analysis*, 3 cr
- Music 266 *Major Project in Composition*, 2 cr
- Music 267-268 *Electronic Music*, 4 cr
- Music 299 *Recital*, 2 cr

**Music Supportive Courses (56 Credits)**
- Music 10 Convocation (six semesters), 0 cr
- Music 31 *Introduction to Music Listening*, 1 cr
- Music 33-34 *Music Literature*, 6 cr
- Music 51 *Conducting*, 2 cr
- Music 61, 63, 65, 67 *Aural Theory*, 8 cr
- Music 62, 64, 66, 68 *Written Theory*, 8 cr
- Music 70-75 *Secondary Piano*, 4 cr (if piano is not principal)
- Music 80-98, 100-105 or 140-149 (at least 4 cr in 90, 91, 100-105), 8 cr
- Music 106-127 *Principal Performance Studies*, 16 cr
- Music 225 *Music of the Twentieth Century*, 3 cr

**General Studies (47-48 Credits)**
- English 1-2 *Composition and Rhetoric*, 6 cr
- Mathematics, 3 cr
- Cluster A Courses, 15 cr (must include two years of French, German, or Italian plus three credits in addition to Music 33-34) Philosophy, Religion, etc.)
- Cluster B Courses, 12 cr
- Cluster C Courses, 11-12 cr

**Electives (5 Credits)**
- Music Electives (from any area), 2 cr
- Music History Elective, 3 cr

**Total Credits Required: 143-144**
Bachelor of Music with a Major in Music History

A history major should enter as a freshman having achieved a proficiency level of 3 on the student’s major instrument, and must complete proficiency level 7 on that instrument before graduation. If piano is not the major instrument, the student must achieve a level 4 on piano. A student wishing to substitute a foreign language other than French, German, or Latin may do so only with the consent of the coordinator of music history and literature. The major project (MUSC 266) must be in music history. Majors in this curriculum must present two solo performances on the major instrument in upper level recitals before graduation.

Required Courses
Major Area (30 Credits)
- Music 31 Introduction to Music Listening, 1 cr
- Music 33-34 Music Literature, 6 cr
- Music 148 New Music Ensemble, 2 cr
- Music 200 Directed Music Studies, 2 cr
- Music 200 Directed Music Studies: Introduction to Musical Bibliography, 3 cr
- Music 225 Music of the Twentieth Century, 3 cr
- Music History Electives (from 221-224, 227), 6 cr
- Music 226 History of Jazz, 3 cr
- Music 239 Collegium Musicum, 2 cr
- Music 266 Major Project in Music History, 2 cr

Music Supportive Courses (63 credits, 51 Credits Keyboard Performers)
- Music 10 Convocation (six semesters), 0 cr
- Music 51 Conducting, 2 cr
- Music 61, 63, 65, 67 Aural Theory, 8 cr
- Music 62, 64, 66, 68 Written Theory, 8 cr
- Music 70-75 Secondary Piano, 12 cr (if piano is not principal)
- Music 90, 91, 100-105 Large Ensemble, 4 cr
- Music 106-127 Principal Performance Studies, 16 cr
- Music 160, Composition, 4 cr
- Music 171 Instrumentation, 2 cr
- Music 263-264 Counterpoint, 4 cr
- Music 265 or 269 Analysis, 3 cr

General Studies (47-48 Credits)
- English 1-2 Composition and Rhetoric, 6 cr
- Mathematics, 3 cr
- Cluster A Courses, 15 cr (Must include two years of French, German, or Italian plus three credits in addition to Music 33-34)
- Cluster B Courses, 12 cr
- Cluster C Courses, 11-12 cr

Total Credits Required: 140-141, Keyboard Performers 128-129

Bachelor of Arts Degree

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 the University, you must meet audition requirements on one of the following: a band or orchestral instrument, guitar, organ, piano, or voice. Unless otherwise specified, general College of Creative Arts and University regulations apply. Three principal areas of course work are required, as shown in the following outline:
Required Courses
General Education (75-82 Credits)
   English 1-2 Composition and Rhetoric, 6 cr
   Mathematics, 3 cr
   Cluster A Courses, 12 cr (In addition to foreign language and music courses)
   Cluster B Courses, 12 cr
   Cluster C Courses, 11-12 cr
   Foreign Language, 12 cr
   Non-music electives, 18-25 cr

   No music courses may be included in Cluster A. Foreign language study, consisting of twelve credits in a single language, is in addition to Cluster requirements. Every student must satisfy the foreign culture/gender/minority studies requirement.

Musicianship (26-29 Credits)
   Literature (Music 31, 33, 34 WR), 7 cr
   Theory (Music 61-68), 16 cr
   Upper-level Music Electives (In theory, Composition, History or Literature), 3-6 cr.

Performance and Music Electives (20-24 credits)
   Ensembles (Music 80-98, 100-105, 140-149), 4 cr
   Major Performance Area (Music 106-127), 16 cr
   Performance elective, 0-4 cr

Total Minimum Credits Required: 128

You must attain a proficiency in your major performance area suitable for public performance (at least level 5). Secondary piano proficiency is not required. Two solo upper-level appearances and two semesters of Music 10: 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.

A student should declare his/her intention to complete a minor when formally requesting admissions to a major program. Check sheets with the requirements for minors are available at the College of Creative Arts Student Records Office or with the student’s advisor. 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 3.

Successful completion of the Music Minor is based on two criteria: a minimum of a 2.5 GPA in the selected music courses, and the improvement to at least a level 4 in performance, as assessed by the music faculty in music juries (performance final examinations).

At the time of application for graduation, the student must indicate that he/she wishes to be certified for the minor. Successful completion of the requirements for a formal minor will be recorded on the student’s official transcript by the student’s major degree program.
Division of Theatre and Dance
William J. Winsor, MFA, Chairperson, Scenic Design.

Degree Programs:
Bachelor of Arts
  Dance
  Theatre
Bachelor of Fine Arts
  Theatre (Acting, Puppetry and Theatre for Youth; Design and Technical Theatre)

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

Nature of Program
The Division of Theatre 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 those students who intend to pursue professional theatre careers, as well as those 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 shop areas.

A Bachelor of Arts degree in Visual and Performing Arts also is offered with an emphasis in dance or theatre.

Performances
The Division annually produces six major productions in its two main performance areas, the Studio Theatre and the Concert 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 Laboratory Theatre produces five or six new or experimental works each year in the intimate 75-seat Classroom Theatre, free of charge.

The Orchesis Dance Ensemble presents one major dance concert each year. There are also other performance opportunities scheduled off-campus.

Entrance Requirements
Upon entrance, the student 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 with a 2.0 (C) grade-point average.

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

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 are employed in the 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 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 oral communication, which may include course work in theatre.

Other Programs

For specific information about the B.A. in visual and performing Arts emphasis in dance or theatre, please contact the Division of Theatre in the college of Creative Arts.

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.

Acting

First year

<table>
<thead>
<tr>
<th>First semester Hrs.</th>
<th>Second semester Hrs.</th>
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<tbody>
<tr>
<td>THET 75 ......................... 3</td>
<td>THET Fresh. Directing Workshop ........ 1</td>
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<tr>
<td>or THET Fresh. Directing Workshop .. 1</td>
<td>or THET 75 Acting ..................... 1</td>
</tr>
<tr>
<td>THET 100 Stagecraft or THET 105 Costuming .......... 4</td>
<td>THET 95 Theatre Concepts ............. 3</td>
</tr>
<tr>
<td>ENGL 1 ......................... 3</td>
<td>THET 100 Stagecraft or THET 105 Costuming .......... 4</td>
</tr>
<tr>
<td>Cluster A ....................... 3</td>
<td>Cluster B ......................... 3</td>
</tr>
<tr>
<td>Cluster B or C ............... 3</td>
<td>Math Skills ......................... 3</td>
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<td><strong>Total 14 or 16</strong></td>
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Second year

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<tr>
<th>First semester Hrs.</th>
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<tr>
<td>THET 51 Vocal Tech. 1 .................. 2</td>
<td>THET 51 Vocal Tech. 2 ............... 2</td>
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<td>or THET 71 Movement 1 .......... 2</td>
<td>or THET 71 Movement 2 .......... 2</td>
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<td>Cluster C ................. 3</td>
<td>THET 176 Interm. Acting 2 .......... 3</td>
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<td>THET 175 Inter. Acting 1 .......... 3</td>
<td>THET 179 Practicum ................. 1</td>
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<td>THET 179 Practicum .......... 3</td>
<td>Cluster A ......................... 3</td>
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<td>ENGL 2 ................. 3</td>
<td>Cluster B ......................... 3</td>
</tr>
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<td>THET 295 or 297 History .......... 3</td>
<td>Cluster C ......................... 3</td>
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Third year*

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<tr>
<td>THET 110 Makeup .......... 3</td>
<td>THET 152 Interm. Vocal Tech. II .......... 2</td>
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<tr>
<td>THET 151 Interm. Vocal Tech. I ... 2</td>
<td>THET 172 Interm. Stage Move. II .......... 2</td>
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<td>THET 171 Interm. Stage Move. I ... 2</td>
<td>THET 178 Acting Studio II ............. 3</td>
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<td>THET 177 Acting Studio I .......... 3</td>
<td>THET 200 Text Analysis .............. 3</td>
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<td>THET 200 Text Analysis .......... 3</td>
<td>THET 260 Practicum ................. 1</td>
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<td>THET 260 Practicum .......... 1</td>
<td>THET 298 THET History or Free Elective .......... 3</td>
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<tr>
<td>THET 295 or 297 Theatre History 3</td>
<td>Cluster C ......................... 3</td>
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**Fourth year**

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<tr>
<td>Cluster B or C</td>
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<td>THET 252 Adv. Vocal Tech. 2</td>
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<td>THET 180 Directing</td>
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<td>Free Elective or THET 298 History</td>
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<td>THET 251 Adv. Vocal Tech. 1</td>
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<td>THET 272 Adv. Stage Move. 2</td>
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<td>THET 260 Practicum</td>
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<td>THET 276 Adv. Acting Studio 2</td>
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<td>THET 271 Adv. Stage Move</td>
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<td>THET 275 Adv. Acting Studio 1</td>
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**Theatre for Youth**

**First year**

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<tr>
<td>THET 74 or 75 Acting</td>
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<td>THET 95 Theatre Concepts</td>
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<tr>
<td>ENGL 1</td>
<td>3</td>
<td>THET 100 Stagecraft or</td>
<td>3</td>
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<tr>
<td>Cluster A</td>
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<td>THET 105 Costuming</td>
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<td>THET 100 Stagecraft or</td>
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<td>MUSC 41</td>
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**Second year**

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<td>THET 219 Props or</td>
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<td>THET 107 Lighting</td>
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<td>THET 110 Makeup</td>
<td>3</td>
<td>THET 179 Practicum</td>
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<td>THET Elective</td>
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<td>Free Elective</td>
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**Third year**

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<td>THET 179 Practicum</td>
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<td>THET 180 Directing</td>
<td>3</td>
<td>THET 282 Creat. Dramatics</td>
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<td>THET 200 (Child. Theatre)</td>
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<td>THET 296 or 297 Theatre History</td>
<td>3</td>
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<td>THET 106 Stage Management</td>
<td>3</td>
<td>Theatre Elective</td>
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<td>THET 295 or 297 Theatre History</td>
<td>3</td>
<td>LS 203</td>
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<td>CD &amp; FS 10 (Cluster B)</td>
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<td>Cluster C</td>
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**Fourth year**

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<td>THET 260 Practicum</td>
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<td>THET 200 (Sp. Problems)</td>
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<td>THET 284 Puppetry</td>
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<td>THET 260 Practicum</td>
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<td>THET 290 Playwriting</td>
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<td>THET 280 Adv. Play Directing</td>
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<td>THET 295 or 297 Theatre History</td>
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<td>THET 296 or 297 Theatre History</td>
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<td>Cluster B or C</td>
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*College of Creative Arts* 191
### Design and Technical Theatre

#### First year

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<tr>
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<th>Hrs.</th>
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<tbody>
<tr>
<td>THET 100 Stagecraft or THET 105 Costuming</td>
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<td>THET 100 Stagecraft or THET 105 Costuming</td>
<td>4</td>
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<td>ENGL 1</td>
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<td>Math Skills</td>
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<td>Cluster A</td>
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<tr>
<td>THET 74 Acting</td>
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<td>Cluster C</td>
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<td>Cluster B</td>
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<td>THET 95 Theatre Concepts</td>
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#### Second year

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<tr>
<td>THET 205 Stagecraft 2</td>
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<td>Free Elective</td>
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<td>THET 107 Lighting</td>
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<td>THET 161 Drafting</td>
<td>3</td>
<td>THET 201 Adv. Costume</td>
<td>3</td>
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<td>THET 167 Intro. to Design</td>
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<td>Cluster B</td>
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<tr>
<td>ENGL 2</td>
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<td>Cluster A</td>
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<td>THET 110 Stage Make-up</td>
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<td>THET 179 Practicum</td>
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</tr>
<tr>
<td>THET 179 Practicum</td>
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<td><strong>Total</strong></td>
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</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>Cluster B</td>
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<td>Cluster A</td>
<td>3</td>
</tr>
<tr>
<td>THET 220 Costume History 1</td>
<td>3</td>
<td>Cluster C</td>
<td>3</td>
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<td>THET 260 Practicum</td>
<td>1</td>
<td>THET 221 Costume History 2</td>
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</tr>
<tr>
<td>THET 203 Lighting Theory</td>
<td>3</td>
<td>THET 260 Practicum</td>
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</tr>
<tr>
<td>THET 219 Stage Props</td>
<td>3</td>
<td>THET 269 Lighting Design or THET 267 Scene Design</td>
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</tr>
<tr>
<td>THET 267 Scene Design</td>
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<td>Advanced Tech</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>Free Elective</td>
<td>3</td>
<td>THET 295 or 297 History</td>
<td>3</td>
</tr>
<tr>
<td>Cluster C</td>
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<td>Cluster B</td>
<td>3</td>
</tr>
<tr>
<td>THET 267 Scene Design or THET 269 Lighting Design</td>
<td>3</td>
<td>Senior Practicum</td>
<td>1</td>
</tr>
<tr>
<td>THET 267 Scene Design or THET 269 Lighting Design</td>
<td>3</td>
<td>THET 218 Period Styles</td>
<td>3</td>
</tr>
<tr>
<td>THET 295 or 297 History</td>
<td>3</td>
<td>Advanced Tech</td>
<td>3</td>
</tr>
<tr>
<td>Senior Practicum</td>
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<td>Free Elective</td>
<td>3</td>
</tr>
<tr>
<td>THET 180 Directing</td>
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<td><strong>Total</strong></td>
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<tr>
<td><strong>Total</strong></td>
<td>19</td>
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<td>16</td>
</tr>
</tbody>
</table>
Bachelor of Arts

Dance

This major is designed for the talented student with a strong interest in dance as a performing art form. In addition to the dance requirements, the major offers a broad liberal arts education component. Students must fulfill all requirements of the University and of the College of Creative Arts.

Dance courses required for this major include 12 hours of technique classes (ballet, modern, and jazz); four courses in dance theory and related subjects; 12 hours of dance electives chosen from such classes as choreography, dance production, theatre dance, movement and rhythms, sports injury, and kinesiology. In addition, the student will earn nine hours through participation in the University’s performing dance company before graduation over a number of semesters. A total of 42 hours in dance is required.

Theatre

The Bachelor of Arts in Theatre offers a broad-based option in liberal arts education for the student who wishes to pursue a program of study less specialized than those offered under the Bachelor of Fine Arts. In keeping with the guidelines established by the National Association of Schools of Theatre, approximately 60 percent of the coursework in this emphasis area is in general education outside the discipline of Theatre, with the remaining 40 percent of the program falling within the three areas of theatre studies, performance, and theatre electives.
School of Dentistry
Robert H. Hornbrook, Interim Dean.
William R. McCutcheon, D.D.S., Associate Dean.
James Overberger, D.D.S., Associate Dean.
David T. Puderbaugh, Assistant Dean.
Frank H. Stevens, D.D.S., Assistant Dean.
Barbara K. Komives-Norris, M.S., Director, Division of Dental Hygiene.

Degree Offered:
B.S. in Dental Hygiene

Admission
To get application and reference forms, please write to the Department of Dental Hygiene, West Virginia University, Morgantown, WV 26506, or to the Office of Admissions, Health Sciences Center, West Virginia University, Morgantown, WV 26506. As soon as possible in the year preceding the year you want to enter the program, you should apply and complete the aptitude tests. Forms for the following year are available in September.

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, and we expect you to have these courses listed on your high school transcript:

- English—4 units
- Algebra—2 units
- Plane geometry—1 unit
- Biology—1 unit
- Chemistry—1 unit

We pay particular attention to scholastic achievement in science courses. We also expect applicants to rank in the upper one 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). We ask for personal references to be submitted on our reference form. All three references must be sent by the writer of the reference directly to the Department of Dental Hygiene. The Dental Hygiene Admissions Committee reviews all applications. If you are among the most qualified, we will invite you to come to the campus for a personal interview. You will receive a letter stating the date, time, and place of an interview. Competition for admission to our program is intense, and we give preference to residents of West Virginia.

Degree Completion Program
If you are a registered dental hygienist, we can admit you directly to the Department of Dental Hygiene as a full-time or as a part-time student. To be eligible for the degree completion program, you must have a certificate or associate degree from an accredited dental hygiene program. You can transfer lower division credits (see Dental Hygiene Suggested Curricula). Your acceptance and placement in the program depends upon your academic record and upon the number of spaces available.
When you apply, we ask you to include complete records of previous study. In addition to an official transcript mailed to us by the registrar of your previous school, we ask you to include catalog descriptions of the courses taken. If you are currently enrolled in a certificate or associate degree program, we ask that you include your program of studies. 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 1 of the year preceding application to the program. The West Virginia University 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>
</tr>
</thead>
<tbody>
<tr>
<td>ORIN 2</td>
<td>1</td>
<td>BIOL 2</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1</td>
<td>3</td>
<td>BIOL 4</td>
<td>1</td>
</tr>
<tr>
<td>Cluster B (COMM 11-12)</td>
<td>3</td>
<td>CHEM 12</td>
<td>4</td>
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<tr>
<td>DTHY 66 Dental Literature</td>
<td>1</td>
<td>DTHY 85 Oral Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3</td>
<td>3</td>
<td>HN &amp; F 71 Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 11</td>
<td>4</td>
<td>Cluster B (PSYCH 1)</td>
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<td>DTHY 1</td>
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#### Second year

<table>
<thead>
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<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
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<tr>
<td>ANAT 101</td>
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<td>PSIO 141</td>
<td>4</td>
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<tr>
<td>Cluster B (SOC 1)</td>
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<td>ANAT 109</td>
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<td>DTHY 105 Dent. Hy.</td>
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<td>PCOL 160</td>
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<tr>
<td>Theory &amp; Pract. of Prevent.</td>
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<td>DTHY 125 Dent. Hy. Tech</td>
<td>4</td>
</tr>
<tr>
<td>M BIO</td>
<td>3</td>
<td>ENGL 2</td>
<td>3</td>
</tr>
<tr>
<td>Cluster A</td>
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<td>DTHY 120 Dent. Nrsng. Tech</td>
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<tr>
<td>SPA 80</td>
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</table>

**Summer I-Optional**

| DTHY Clinic 220     | 1    |

#### Third year

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>DTHY 168 Periodontics</td>
<td>1</td>
<td>DTHY 169 Periodontics</td>
<td>2</td>
</tr>
<tr>
<td>PATH 128</td>
<td>2</td>
<td>DTHY 174 DTHY Tching. Meth</td>
<td>2</td>
</tr>
<tr>
<td>DTHY 152 Dent. Radiol</td>
<td>2</td>
<td>PATH 129</td>
<td>3</td>
</tr>
<tr>
<td>DENT 300</td>
<td>1</td>
<td>DTHY 161 Exp. Functions</td>
<td>2</td>
</tr>
<tr>
<td>DTHY 172 Public Health</td>
<td>2</td>
<td>Cluster A</td>
<td>3</td>
</tr>
<tr>
<td>DTHY 160 Dent. Materials</td>
<td>3</td>
<td>DTHY 150 Dent. Health Ed</td>
<td>3</td>
</tr>
<tr>
<td>DTHY 163 Clin. Dent. Hy</td>
<td>2</td>
<td>DTHY 153 (Radiology)</td>
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</tr>
<tr>
<td>DTHY 180 Rural Health</td>
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<td><strong>Total</strong></td>
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<tr>
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</table>

School of Dentistry 195
### Fourth year

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>DTHY 204 Adv. Clin. DH ..........</td>
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<tr>
<td>DTHY 202 Dent. Hy. Pract. ........</td>
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</tr>
<tr>
<td>Cluster A ..........................</td>
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<tr>
<td>DTHY 220 Dent. Hy. Ed. II ........</td>
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<tr>
<td>DH Electives ........................</td>
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<table>
<thead>
<tr>
<th>Second semester</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>DTHY 206 Adv. Clin. DH Meth. ....</td>
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<tr>
<td>DTHY 207 Adv. Clin. DH Meth .....</td>
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</tr>
<tr>
<td>DTHY 251 Dent. Hy. Ed. III ........</td>
<td>2</td>
</tr>
<tr>
<td>DTHY 220 Clin. Did. Sem. ..........</td>
<td>1</td>
</tr>
<tr>
<td>DTHY Electives ........................</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12-13</strong></td>
</tr>
</tbody>
</table>

Summer I

Rural Health .................................. 3
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 Forensic Identification—Biometrics Systems Major
- 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
- Computer Engineering and Electrical Engineering

Nature of Program
The College of Engineering and Mineral Resources (CEMR) undergraduate degree programs are administered through seven 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 have been 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 has been developed to give 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 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. Since minerals and chemical industries are central to the economy of West Virginia and the region, a number of the largest ones throughout the nation provide meaningful and financially rewarding summer employment for students. These training opportunities often lead to professional positions upon graduation. Many opportunities are also available in the growing software engineering industry in West Virginia.
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 programs in the College of Engineering and Mineral Resources at West Virginia University are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Admission Requirements

Admission to the College of Engineering and Mineral Resources is based on a combination of high school grade-point average (unweighted 4.0 scale) and ACT or SAT scores. The following table summarizes the admission requirements.

<table>
<thead>
<tr>
<th>Residents</th>
<th>GPA (Range)</th>
<th>ACT</th>
<th>SAT</th>
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<tr>
<td></td>
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<td>Composite</td>
<td>Math</td>
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<tr>
<td>West Virginia</td>
<td>2.00 - 2.99</td>
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<tr>
<td></td>
<td>3.00 - 4.00</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>2.25 - 4.00</td>
<td>20</td>
<td>24</td>
</tr>
</tbody>
</table>

In addition, students must have high school credits for:

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

Common First-Year Engineering Curriculum

All freshman engineering students admitted into the College complete a common curriculum. These courses help to prepare students with the foundation needed to succeed in their chosen engineering major.

First Year Curriculum

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 15 Fund. of Chem.</td>
<td>4</td>
<td>CHEM 16 Fundamentals of Chem.</td>
<td>4</td>
</tr>
<tr>
<td>MATH 15 Calculus</td>
<td>4</td>
<td>MATH 16 Calculus</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 1 Comp. and Rhetoric</td>
<td>3</td>
<td>PHYS 11 General Physics</td>
<td>4</td>
</tr>
<tr>
<td>Cluster A or B elective</td>
<td>3</td>
<td>Cluster A or B elective</td>
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</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>

*Mining Engineering students should take GEOL 1 and 2. Petroleum and Natural Gas Engineering students should take GEOL 1 in place of the cluster A or B elective.
Admission to a Program

During the second semester, all freshman engineering students (except for engineering of mines, and petroleum and natural gas majors) are encouraged to choose an engineering major. Only those students who have a GPA of at least 2.0 and have completed ENGR 1, ENGR 2, MATH 15, CHEM 15, and ENGL 1 will be evaluated for admission to a program. Students not accepted to an engineering major by the end of the second semester would be given an additional semester to complete the admission requirements. Each department will assign an advisor to help these students achieve their academic goals. By the end of the third semester, students who have not completed the requirements for admission to a program 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.

Transfer Students

Students wishing to transfer into general engineering 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 15 (calculus).

Students wishing to transfer into a major must have a GPA of at least 2.0 and have completed ENGR 1, ENGR 2, MATH 15, CHEM 15, and ENGL 1.

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 several designated scholarships. Certain freshman scholarships require the student to be pursuing a declared major. Recipients of these scholarships will be designated departmental majors in their freshman year.

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. Studies in humanities and social sciences is 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 statewide co-op program is available to any student attending a college or university in West Virginia. The co-op program is accredited by the Accreditation Board for Engineering and Technology (ABET). 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. The two programs are dual mechanical and aerospace engineering and dual electrical and computer engineering. Each dual degree program requires less than one year’s additional work over and above that required for a single degree.

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, and mechanical engineering.

Undergraduate Liberal Studies Program Requirements
All engineering undergraduate students must satisfy the University Liberal Studies Program (LSP) requirements by completing 12 credits of Cluster A courses and 12 credits of Cluster B courses.

• The 12 credit hours in each cluster must include courses taken in three disciplines; two courses must be successfully completed in the same discipline to emphasize depth.
• One 3 credit-hour course must satisfy the foreign culture, minority, or gender studies requirement.
• If two foreign language courses are chosen to fulfill Cluster A depth requirements, they must be in the same discipline. Language courses in a student’s native language may not be used to fulfill Cluster A requirements.
• No more than one multidisciplinary studies (MDS) course per cluster may be used to fulfill requirements.
• No more than three hours of basic ROTC may be used to fulfill either Cluster A or Cluster B requirements.
• Advanced Air Force ROTC students may substitute both AFROTC 105 and 106 for PSYC 1. They may also substitute both AFROTC 107 and 108 for a total of three hours of approved Political Science Cluster B course. No equivalent agreement exists with the Army ROTC.
• The following LSP courses are not approved by the College: PHIL 106, MATH 61, RESM 1, and SOCA 152.
• ECON 54 and ECON 55 are required Cluster B courses for degree programs in computer engineering, electrical engineering, industrial engineering and petroleum and natural gas engineering. Students should consult their advisors and familiarize with any additional department cluster course requirements.
• No 200-level courses are included in Cluster A and Cluster B because they typically are inappropriate for the Liberal Studies Program. However, a student may petition through the department to take one 200-level course from the list of University-approved courses in fulfillment of the LSP requirement for each of the cluster areas.
• Students and advisors should consult the latest Schedule of Courses for the most current list of courses included in the Liberal Studies Program.

Time to Completion of Degree
All undergraduate degree programs in the college are structured so that they can be completed in eight semesters of full-time study. However, students who are not prepared to enter MATH 15 (calculus) or CHEM 15 in their first semester may not be able to complete an engineering degree within eight semesters. Engineering applicants are strongly urged to take the required prerequisites to calculus and chemistry in the summer before entering WVU or plan on attending summer school after their freshman year in order to avoid delays in their graduation.

Degree Requirements
To be eligible to receive a bachelor’s degree, a student is required to satisfactorily complete the number of semester hours of work as specified in the curriculum of the program leading to the degree for which the student is a candidate.

Students must achieve an overall 2.0 grade-point average and a 2.0 grade-point average (2.25 in mining engineering and petroleum and natural gas engineering) in all courses completed within the student’s major department.

Department of Chemical Engineering
Dady B. Dadyburjor, Ph.D., Chair.

Curriculum in Chemical Engineering
Degree: Bachelor of Science 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 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 specific goals 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 also be able to participate effectively in groups of their peers.
• Graduates will be able to design laboratory experiments, perform laboratory experiments, gather data, analyze data, and test theories.
• Graduates will be prepared for a lifetime of continuing education.
• Graduates will understand the safety and environmental consequences and the societal impact of their work as chemical engineers.
• 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 goals are achieved via rigorous individual courses in all basic areas of chemical engineering, basic science, mathematics, and humanities and social sciences. Additionally a flexible electives program allows specialization in areas such as environment and safety, polymers and materials, biological applications, and coal processes.

Practical work on design and synthesis is incorporated into all chemical engineering classes. One element is the group design projects which require sophomores and juniors to synthesize their knowledge as it is gained. Another element is the individual design projects which 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 as well as giving 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 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 receive a degree of bachelor of science in chemical engineering, a student must take all of the courses indicated below and must obtain a grade-point average of 2.0 or better for all required chemical engineering courses. If a course is repeated, only the most recent grade received is considered in computing this grade-point average. Chemical engineering courses used to satisfy technical or engineering electives are not considered in this grade-point average. This requirement helps assure that the student has demonstrated overall competence in the chosen major. To complete the B.S. degree program in four years, a student must complete approximately 17.5 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 page 198.

**Second year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 17  Multivar. Calculus</td>
<td>4</td>
<td>MATH 18 Elem. Diff. Equat.</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 133  Organic Chem.</td>
<td>3</td>
<td>CHEM 134 Organic Chem.</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 135  Organic Chem. Lab</td>
<td>1</td>
<td>CHEM 136 Organic Chem. Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 12  General Physics</td>
<td>4</td>
<td>CH E 38 Numerical Methods</td>
<td>3</td>
</tr>
<tr>
<td>CH E 40  Matri. &amp; Energy Bal. 1</td>
<td>3</td>
<td>CH E 41 Matri. &amp; Energy Bal. 2</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2  Comp. &amp; Rhetoric</td>
<td>3</td>
<td>Cluster A or B elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td><strong>Total</strong></td>
<td>17</td>
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</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>CHEM 246  Physical Chem.</td>
<td>3</td>
<td>CHEM 248 Physical Chem.</td>
<td>3</td>
</tr>
<tr>
<td>CH E 110  Proc. Fluid Mechanics</td>
<td>3</td>
<td>CHEM 142 Experi. Physical Chem.</td>
<td>1</td>
</tr>
<tr>
<td>CH E 142  Thermodynamics</td>
<td>6</td>
<td>CH E 145 ChE Transport Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Cluster A or B electives</td>
<td>6</td>
<td>CH E 172 Chem. Reaction Engr.</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19</td>
<td>Cluster A or B elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td><strong>Total</strong></td>
<td>17</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>CH E 175  Chem. Process Control</td>
<td>3</td>
<td>CH E 181 Unit Operations Lab. 2</td>
<td>1</td>
</tr>
<tr>
<td>CH E 180  Unit Operations Lab. 1</td>
<td>1</td>
<td>Electives</td>
<td>12</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
<td>Electives</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

Three hours of lower-division ROTC can count toward Cluster A requirements and three hours can count toward Cluster B requirements. Electives in junior and senior years must be selected to complete requirements of non-technical electives (24 hr.), technical electives (six hr.), Engineering Science electives (six hr.), and an advanced science elective (three hr.). All electives must be selected from a list approved by the Department of Chemical Engineering. A 2.0 grade-point average in required chemical engineering courses is necessary before a student can register for CH E 110, 111, 142, 175, 180, or 182.

**Department of Civil and Environmental Engineering**
David Martinelli, Ph.D., Chair.

**Curriculum in Civil and Environmental Engineering**

**Degree: Bachelor of Science in Civil Engineering**

Civil Engineering historically encompassed all engineering endeavors not associated with military activities. Because of its origin and history, civil engineering still embraces a wide variety of technological areas. These include environmental engineering, hydrotechnical 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, environ-
mental 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 lifelong 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, hydrotechnical, structural, and transportation systems engineering. This broad base of knowledge is provided to ensure 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.

To be eligible for graduation in civil engineering, a student must attain a grade-point average of 2.0 or better for all civil engineering courses attempted, except for those courses in which a grade of W or WU was received. If a course is repeated, only the last grade received is counted in computing the grade-point average, and the course credit hours are counted only once. This requirement assures that the student has demonstrated overall competence in the chosen major.

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:

**Civil and Environmental Engineering**

*First year*
Common first year as listed on page 198.

**Second year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 41 Statics</td>
<td>3</td>
<td>MAE 43 Mech. of Mat.</td>
<td>3</td>
</tr>
<tr>
<td>MATH 17 Calculus</td>
<td>4</td>
<td>MATH 18 Diff. Equations</td>
<td>4</td>
</tr>
<tr>
<td>Non-tech Elective</td>
<td>3</td>
<td>CHEM 16 or PHYS 12</td>
<td>4</td>
</tr>
<tr>
<td>C E 105 Survey and CAD</td>
<td>4</td>
<td>MAE 42 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2 Comp. and Rhet.</td>
<td>3</td>
<td>ENGL 208 Sci. and Tech. Writ.</td>
<td>3</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>

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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>C E 161 Str. Analysis I</td>
<td>4</td>
<td>C E 122 Hydrotechnical Engr.</td>
<td>4</td>
</tr>
<tr>
<td>C E 121 Fluid Mech. for CE</td>
<td>3</td>
<td>C E 181 Intro. Soil Mech.</td>
<td>3</td>
</tr>
<tr>
<td>IE 277 Engr. Econ.</td>
<td>3</td>
<td>C E 270 or 271 or 274</td>
<td>3</td>
</tr>
<tr>
<td>C E 110 CE Materials</td>
<td>4</td>
<td>Concrete, Steel, or Timber Design</td>
<td></td>
</tr>
<tr>
<td>C E 147 Envr. Engr.</td>
<td>3</td>
<td>C E 132 Intro. Trans. Engr.</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>STAT 201 Intro. to Prob. and Stats.</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

| **Total** | **17** |

### 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 101 Thermodynamics</td>
<td>3</td>
<td>EE 103 Intro. Elect. Inst.</td>
<td>3</td>
</tr>
<tr>
<td>C E 281 or C E 283</td>
<td>3</td>
<td>Engr./Math/Science Elec.</td>
<td>3</td>
</tr>
<tr>
<td>Found. Des. or Earthwork Design</td>
<td></td>
<td>C E Elective</td>
<td>3</td>
</tr>
<tr>
<td>C E Elective</td>
<td>3</td>
<td>Non-tech. Electives</td>
<td>6</td>
</tr>
<tr>
<td>Non-tech. Electives</td>
<td>6</td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

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

**Notes:**
1. The non-technical electives must be selected from LSP Cluster A and Cluster B courses. These courses must be selected so as to meet both the University Liberal Studies Program requirements and the College of Engineering and Mineral Resources humanities and social science course requirements. Each student shall select a sequence of courses with the cooperation and approval of the advisor so as to constitute a meaningful program of study in keeping with the student’s interests and career goals.
2. If CHEM 16 was taken in the freshman year, take non-tech. elective.
3. C E electives must be from any of the 200-level civil engineering courses, or for those who qualify, any of the 300-level civil engineering courses.
4. See advisor for list of approved courses.

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**Department of Computer Science and Electrical Engineering**

George Trapp, Ph.D., Chair.

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**

**Degree: Bachelor of Science in Forensic Identification with a major 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 representing a major application segment. 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 voice.
Biometrics for biomedical, human computer interface, and other applications may
include these but will necessarily extend to a wide range of physiological signals
which posses identifiable patterns which may change in time, albeit predictably. The
spectrum of usable biometrics is defined by both human physiology, the bioengineer-
ing implied by their measurement, and the application. As biometric system capabili-
ties and applications evolve, biometrics will extend to any known measurement of the
human body.

Biometric identification is a highly interdisciplinary field mixing traditional engi-
eering with the forensic sciences. As a result, the engineering design and develop-
ment of biometric systems requires knowledge of the biometric as well as the
engineering disciplines. Designers work with the physics of the sensor to obtain
measurements of the biometric defined by human physiology. Signal and image
processing techniques are applied to the sensor signal to extract features usable for
identification. Databases combined with artificial intelligence enable rapid storage,
retrieval, and pattern matching while decision theory supports the mechanisms
whereby systems can provide the needed identification results. Underlying the entire
system is a foundation of statistics and mathematics which provides the language for
implementing and evaluating biometric technology and systems.

Overview of the Major
The biometric systems major at WVU will provide students with a firm foundation
in electrical and computer engineering and computer science meshed with an
understanding of biology, physiology, forensics, and the interaction between living
and nonliving materials and systems necessary to design, implement, and evaluate
biometric systems. This foundation is built on a strong framework of mathematics,
statistics, and physical sciences appropriate to biometric systems and comple-
mented by an appropriate general studies component. Areas of emphasis estab-
lished 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 process-
ing, statistics, and software systems. Details of a DNA/molecular biology emphasis
area are being finalized. 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
course work knowledge to realize biometric systems and subsystems of their own
design.

Areas of Emphasis
Presently, five 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. A DNA/molecular Biology emphasis area is being finalized. Each emphasis area is fulfilled by the
successful completion of four 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. The fourth
course of each emphasis area is designated as a free technical elective which may be chosen from the superset of classes collectively defined by all those of all emphasis areas. 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 four 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 of the major number 140. Four courses or twelve credits are devoted to the emphasis areas selected by individual students based upon their educational objectives. Six of the twenty-four credit hours required to satisfy the University cluster requirements have been devoted to economics in order that students may develop an understanding of system engineering economics. Based on the EC 2000 guidelines of the Accreditation Board for Engineering and Technology (ABET), it is anticipated that the biometric systems major may be accreditable under the bioengineering program guidelines.

Biometric Systems

First year

<table>
<thead>
<tr>
<th>First semester Hrs.</th>
<th>Second semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 15 General Chemistry I .......... 4</td>
<td>CHEM 16 General Chemistry II .......... 4</td>
</tr>
<tr>
<td>MATH 15 Calculus I ..................... 4</td>
<td>MATH 16 Calculus II ..................... 4</td>
</tr>
<tr>
<td>ENGL 1 ......................... 3</td>
<td>PHYS 11 General Physics I ............. 4</td>
</tr>
<tr>
<td>Hum. &amp; Social Science Elec. .......... 3</td>
<td>Total 16</td>
</tr>
<tr>
<td><strong>Total 16</strong></td>
<td></td>
</tr>
</tbody>
</table>

Second year

<table>
<thead>
<tr>
<th>First semester Hrs.</th>
<th>Second semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E E 21/22 Circuits I ............... 4</td>
<td>EE 24/25 Circuits II .............. 4</td>
</tr>
<tr>
<td>MATH 17 Multivariant Calculus .......... 4</td>
<td>STAT 201 Prob. and Statistics .......... 3</td>
</tr>
<tr>
<td>PHYS 12 General Physics II .......... 4</td>
<td>MATH 18 Differential Equations .......... 4</td>
</tr>
<tr>
<td>BIOLOGY 15 Intro to Biology .......... 4</td>
<td>CP E 110/111 Microproc. Systems .......... 4</td>
</tr>
<tr>
<td><strong>Total 20</strong></td>
<td><strong>Total 19</strong></td>
</tr>
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</table>

Third year

<table>
<thead>
<tr>
<th>First semester Hrs.</th>
<th>Second semester Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Bio/Signatures .......... 4</td>
<td>CS 126 Analysis of Algorithms .......... 3</td>
</tr>
<tr>
<td>Forensic Statistics .......... 3</td>
<td>Biometric Systems .......... 3</td>
</tr>
<tr>
<td>ENGL 2 .................. 3</td>
<td>MATH 215 Discrete Math .......... 3</td>
</tr>
<tr>
<td>Hum. and Social Science Elect. .......... 3</td>
<td>Hum. and Social Science Elec. .......... 3</td>
</tr>
<tr>
<td><strong>Total 17</strong></td>
<td><strong>Total 18</strong></td>
</tr>
</tbody>
</table>
Fourth year

First semester Hrs. Second semester Hrs.
Databases/Warehousing ................... 3 Senior Design Project ..................... 3
E E 269 Imaging Processing ............. 3 Emphasis Course 4 ......................... 3
Emphasis Course 2 ........................ 3 ECON 55 ...................................... 3
Emphasis Course 3 ........................... 3 Hum. and Social Science Elec. .......... 6
ECON 54 ........................................ 3 Total 15
Hum. and Social Science Elec. ......... 3
Total 18

Curriculum in Computer Engineering
Degree:

*Bachelor of Science 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 mission of the bachelors degree program in computer engineering is to provide our students with the knowledge and skills to ensure initial employment or entry into further education and to ensure a meaningful lifetime career. 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 Cp E program is fully accredited by ABET, the international engineering accrediting organization.

It is our goal that the graduates of the Cp E program will:

- Acquire knowledge of the fundamentals of computer engineering and skill sufficient to apply this knowledge to solve problems.
- Be able to design and analyze basic electrical and logic circuits and basic computer hardware and software.
- Develop proficiency in one or more areas of computer engineering at an advanced level.
- Be able to work and learn effectively individually and in teams, both within the discipline and across disciplines.
- Be able to articulate their work and ideas orally and in writing.
- Understand ethical standards of practice of computer engineering.
- Be prepared to engage in lifelong learning.
- Have the background to understand the impact of engineering on society and the natural environment.

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.

Technical electives should be selected from 200-level 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 CP, EE, or CS 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 six humanities and social science electives (non-technical electives) and two technical electives must be selected. The humanities and social science electives must be chosen so as to meet the University Liberal Studies Program 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 137 hours is as follows:

**Computer Engineering**

*First Year*

Common first year as listed on page 198.

**Second year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E E 21 Intro. to E E Lec. .......... 3</td>
<td>E E 24 Electrical Circuits Lec. .... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E E 22 Intro. to E E Lab .......... 1</td>
<td>E E 25 Electrical Circuits Lab .... 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP E 71 Int. Dig. Logic Dsgn. Lec . 3</td>
<td>E E 56 Digital Elect. Lec. ....... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP E 72 Digital Logic Lab .......... 1</td>
<td>E E 57 Digital Elect. Lab .......... 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 12 General Physics .......... 4</td>
<td>ENGL 2 Comp. and Rhetoric .......... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 15 Intro. to ADA ................. 4</td>
<td>CS 16 Principles of Data Struct. .... 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong> 20</td>
<td><strong>Total</strong> 19</td>
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</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>E E 124 Signals &amp; Syst. 1 Lec ...... 3</td>
<td>CS 156 Comp. Sys Concepts .......... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E E 127 Signals &amp; Systems Lab ...... 1</td>
<td>CP E 112 Mrcrmp Strc/Intrfcng ...... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP E 110 Micropr. Sys. Lec .......... 3</td>
<td>CP E 113 Mrcrmp Strc/Int Lab ...... 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP E 111 Microprocessor Lab .......... 1</td>
<td>STAT 201 Intro. Prob. &amp; Stat. ...... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-tech Elect. .................... 3</td>
<td>Non-tech. Elect. .................... 3</td>
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<td></td>
</tr>
<tr>
<td>MATH 215 App. Modern Alg. .......... 3</td>
<td><strong>Total</strong> 16</td>
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<td></td>
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<tr>
<td><strong>Total</strong> 17</td>
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</table>
Fourth year
First semester Hrs. Second semester Hrs.
ECON 54 Microeconomics ............... 3 ECON 55 Macroeconomics ............... 3
Non-tech. Elect. ............................... 3 CP E 181 Senior Design Project ........ 3
E E 158 Analog Electronics ............... 3 CS 176 Intro. Software Eng. .............. 3
E E 159 Analog Elect. Lab .................. 1 Tech Elect. ................................. 3
CS 256 Oper. Syst. Struct. ............... 3 Total 15
Total 15

Curriculum in Computer Science
Degree: Bachelor of Science In Computer Science

Nature of Program
The Department of Computer Science and Electrical Engineering in the College of Engineering and Mineral Resources offers a major in computer science leading to a bachelor of science. The degree is conferred by the Eberly College of Arts and Sciences. The curriculum is designed to qualify students for professional positions in business, industry, research, government service, or graduate study in computer science.

The computer science major is intended to educate students in the following areas of computer science: mathematical procedures, programming languages, systems programming, and software engineering.

Normally, students are first admitted to the pre-computer science program of study. After meeting the requirements, the student then moves into the computer science program. This transition into the computer science program normally takes place at the end of the sophomore year.

Admission Requirements

Computer Science Program of Study
General requirements for admission to the pre-computer science program of study are that all prospective students must qualify for admission to WVU and present secondary school credit for two units of algebra, one unit of geometry, and one-half unit of trigonometry or advanced mathematics or one unit of chemistry or physics.

Additional Admission Requirements Applicants must take either the Standard ACT test or the SAT test. Automatic admission to pre-computer science is granted if any two of the three requirements shown below are met:
- A 3.0 grade-point average in high school.
- A mathematics ACT score of 22, or mathematics SAT score of 500.
- A composite ACT score of 22, or combined SAT score of 1010.

Applicants not satisfying these admission requirements may gain admission to pre-computer science as transfer students as described below.

Transfer Students
Students wishing to transfer into pre-computer science or computer science must satisfy WVU and Arts and Sciences admission requirements and must petition the Department of Statistics and Computer Science for admission. Petitions should be addressed to the Computer Science Academic Standards Committee with a transcript of all college level course work attempted and an indication of when the student wants to transfer to Computer Science.
Transfer students are expected to meet the following requirements:

• A grade-point average of at least 3.0 in all college-level work attempted; and
• Grades as listed in the next catalog section under “Computer Science Degree Program” for any of Computer Science (CS) 15, 16, 26, 56, 76, MATH 15, and/or 16 that have been attempted.

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.

Admission to Computer Science Program

To be admitted to the bachelor of science degree program with a major in computer science, students must earn these minimum grades:

• A minimum grade of C in CS 15 before enrolling in either CS 16 or CS 56.
• A minimum grade of C in CS 15 and a minimum grade of C in MATH 15 before enrolling in CS 26.
• A minimum grade of C in CS 16 and at least one B in either CS 15 or 16 before enrolling in either CS 76 or CS 136.
• A minimum grade of C in CS 26, 56 and 76 and at least one B in one of these courses.
• A minimum grade of C in MATH 15, 16, and STAT 201.

Students are permitted to repeat only one course in the CS 15 and 16 sequence and only one course in CS 26, 56, and 76. The first grade in any repeated course will not be considered for the purpose of meeting departmental admission requirements.

Degree Requirements

A student must earn at least a C in every computer science course to be counted toward meeting degree requirements. Required courses for all computer science majors are MATH 15, 16; STAT 201; CS 15, 16, 26, 56, 76, 126, 136, and 176. Students complete additional degree requirements by satisfying the course requirements at the 200-level: at least one course from each of the following blocks must be taken: Systems (CS 256, 258, 266, 268); Applications (CS 236, 278, 286, 288); and Theory (CS 216, 228, 246 or an approved MATH elective). At least six hours of technical electives are also required: these may be any 200-level CS, MATH or CPE course with the exception of MATH 215, 231, 232. CS 210 is strongly recommended so that students can develop a working knowledge of C and C++.

Minor in Computer Science

Any student may take a minor in computer science by satisfying the following requirements:

• CS 15, 16, 26, 56, and 76; MATH 15 and 16; STAT 201; one course from among CS 126, 136, 156, 176.

A student must earn at least a C in every computer science, mathematics, and statistics course counted toward meeting the minor field requirements.
Curriculum in Electrical Engineering

*Degree: Bachelor of Science In Electrical Engineering*

Electrical engineers design, develop, test, and oversee 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 mission of the bachelors degree program in electrical engineering is to provide our students with the knowledge and skills to ensure initial employment or entry into further education and a meaningful lifetime career.

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 EE program is fully accredited by ABET, the international engineering accrediting organization.

It is our goal that the graduates of the EE program will:

- Acquire knowledge of the fundamentals of electrical engineering and skill sufficient to apply this knowledge to solve problems.
- Be able to design and analyze basic electrical circuits, signals, components, devices, and systems.
- Develop proficiency in one or more areas of electrical engineering at an advanced level.
- Be able to work and learn effectively individually and in teams, both within the discipline and across disciplines.
- Be able to articulate their work and ideas orally and in writing.
- Understand ethical standards of practice of electrical engineering.
- Be prepared to engage in lifelong learning.
- Have the background to understand the impact of engineering on society and the natural environment.

In the first two years of electrical engineering, course work 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. These technical electives are normally selected from 200-level electrical engineering, computer engineering, or computer science courses. However, students with special career objectives can petition the department through their advisor for prior written permission to select technical electives from upper-division course offerings in mathematics, the sciences, or other areas of engineering.

The mathematics/statistics elective and engineering science elective is selected from a department-approved list. 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 six humanities and social science electives (non-technical electives) and three technical electives must be selected. The humanities and social science electives must be chosen so as to meet University Liberal Studies Program 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 138 hours is as follows:

**Electrical Engineering**

**First Year**

Common first year as listed on page 198.

**Second year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E E 21 Intro. to E E Lec. ................. 3</td>
<td>E E 24 Electrical Circuits Lec. ........ 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E E 22 Intro. to E E Lab .................. 1</td>
<td>E E 25 Electrical Circuits Lab ............. 1</td>
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<tr>
<td>CP E 71 Intro. Dig. Log. Dsgn ........... 3</td>
<td>MATH 18 Elem. Diff. Equations ............ 4</td>
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<td></td>
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<tr>
<td>MATH 17 Multivar. Calculus ............... 4</td>
<td>Engr. Science Elect. ........................ 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-tech. Elective ......................... 3</td>
<td>ENGL 2 Comp. and Rhetoric ................ 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 12 General Physics ................... 4</td>
<td>E E 56 Digital Elect. ....................... 3</td>
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<tr>
<td><strong>Total</strong> 18</td>
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<td>E E 57 Digital Elect. Lab 1</td>
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<table>
<thead>
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<th>Third year</th>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E E 124 Signals &amp; Systems 1 Lec .... 3</td>
<td>E E 126 Signals and Systems 2 .......... 3</td>
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</tr>
<tr>
<td>E E 127 Signals &amp; Systems 1 Lab .... 1</td>
<td>E E 128 Systems Theory .................. 3</td>
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<td></td>
<td></td>
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<tr>
<td>E E 151 Semiconductor Electronics .. 3</td>
<td>E E 135 Engy. Convers. Lab ............... 1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MATH/STAT Elect. .......................... 3</td>
<td>E E 141 Elect. and Mag. Flds. 2 ........... 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP E 110 Microp. Sys. Lec. .............. 3</td>
<td>Non-tech. Elect.* ................................... 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP E 111 Microp. Lab ....................... 1</td>
<td><strong>Total</strong> 16</td>
<td></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>ECON 54 Microeconomics ................. 3</td>
<td>ECON 55 Macroeconomics ................... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E E 131 Intro. to Power Sys. Lec ...... 3</td>
<td>E E 181 Senior Design Project .............. 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E E 136 Power Sys. Lab .................... 1</td>
<td>Non-tech. Elect.* ................................ 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E E 158 Analog Elect. Lec. ............. 3</td>
<td>Tech. Elect. ......................................... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E E 159 Analog Elect. Lab ............... 1</td>
<td>Tech. Elect. ......................................... 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tech. Elect. ................................. 3</td>
<td><strong>Total</strong> 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Tech. Elect.* ........................... 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E E 180 Senior Design Sem. ............. 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong> 19</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Non-technical elective LSP courses must consist of 12 hours in Cluster A and six hours in Cluster B. The courses must be chosen in accordance with University Liberal Studies Program distribution guidelines.
Dual Degree Curriculum

Students can simultaneously pursue B.S. degrees in two majors within the department by completing a small number of additional classes. The total credit load is approximately 160-170 credit hours. Information on these options can be obtained by contacting the CSEE department.

Department of Industrial and Management Systems Engineering

Ralph W. Plummer, Ph.D., P.E., Chair.

Curriculum in Industrial and Management Systems Engineering

Degree: Bachelor of Science in Industrial Engineering

Industrial engineering began in the latter part of the nineteenth century through the efforts of such pioneers as Frederick Taylor and Frank and Lillian Gilbreth. These early industrial engineers were concerned with improving the effectiveness of industrial operations. They made remarkable savings possible through the use of motion and time studies and methods analysis. As industry became more complex, with large scale systems, industrial engineers expanded their efforts by applying operations research, human factors, decision sciences, and automated manufacturing techniques to the design of production systems. Industrial engineers were also developing statistical quality control plans, which are so important today in providing the consumer with a quality product at a competitive price. As production processes and facilities expanded, the industrial engineer was responsible for developing and managing productive, safe systems. In the late fifties and in the early sixties, the computer became a powerful new tool for use in solving management problems. As the computer became more versatile, the industrial engineer applied the computer to solve larger and more complex manufacturing and managerial problems through such modern management science tools as operations research, expert systems, simulation, etc.

Today’s students learn the fundamental engineering principles that have been developed in the past; however, the industrial and management systems engineering (IMSE) student increasingly uses the computer to solve industrial and social problems. At the same time, the industrial and management systems engineer has become even more involved with the human element of the organization. The industrial engineering area known as ergonomics is concerned with human productivity, health, and safety as they relate to the job and the working environment.

The graduating industrial engineer has a versatile degree that can be used in every endeavor of society. Since industrial and management systems engineers are involved in more effective management of organizations, IMSE engineers are not limited to any one industry or business. Industrial engineering graduates not only begin their careers in manufacturing companies, but many enter service businesses such as hospitals, banks, and virtually every agency of the federal government. Companies have found that their managers perform better when they possess a blend of technical engineering knowledge plus a background in management systems. The industrial engineer has an excellent blending of these two fields—technology and management. The top managers of many of the country’s largest organizations are industrial engineers.
The industrial and management systems engineering program at WVU devotes considerable attention to the individual needs of the student. The faculty works extensively with students in such areas as communication skills, personal growth and development, and the creation of summer and permanent job opportunities. The goal of the department is to develop student strengths in technical abilities, personal development, problem solving, and practical experience.

Graduates of the IMSE Department are prepared professionally and technically for careers in business and government. Graduates may also elect to continue their education by attending graduate school in engineering, business, or a professional school such as law or medicine.

The specific goals of the industrial engineering curriculum are as follows:
- Graduates will be prepared to continue learning over their lifetime.
- Graduates will understand their ethical and professional responsibilities to society.
- Graduates will be equipped with engineering knowledge to improve manufacturing and management systems.
- Graduates will be proficient in written and oral communications skills.
- Graduates will be proficient in the use of computers, computer software, and computer-based information systems to support decision making.
- Graduates will have the ability to work and learn independently or to lead a team of their peers.
- Graduates will have the skills to evaluate and understand the consequences and trade-offs of their work product as it may impact occupational safety and the environment.

To be eligible for graduation with a bachelor of science in industrial engineering, a student must attain a grade-point average of 2.0 or better for all industrial and management systems engineering courses attempted. If a course is repeated, only the last grade received is counted in computing the grade-point average, and the course credit hours are counted only once. This requirement assures that the student has demonstrated overall competence in the chosen major.

To complete the B.S. degree program in four years, a student must take approximately 17 credit hours per semester.

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

**Industrial and Management Systems Engineering**  
*First year*  
Common first year as listed on page 198.

**Second year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 17 Multivar. Calculus</td>
<td>4</td>
<td>MATH 18 Elem. Diff. Equat.</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 12 General Physics</td>
<td>4</td>
<td>MAE 43 Mech. of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MAE 41 Statics</td>
<td>3</td>
<td>IMSE 277 Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2 Comp. &amp; Rhetoric</td>
<td>3</td>
<td>IMSE 113 Engineering Statistics</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 20 Fundamentals of I E</td>
<td>1</td>
<td>Non-tech. Elect.</td>
<td></td>
</tr>
<tr>
<td>IMSE 140 Motion &amp; Time Study</td>
<td>3</td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Third year
First semester Hrs. Second semester Hrs.
ECON 54 Microeconomics ............... 3 ECON 55 Macroeconomics ............... 3
IMSE 260 Human Factors Engr. ........ 3 IMSE 250 Intro. Oper. Research ....... 3
IMSE 281 Comptr. Applied I E ......... 3 IMSE 216 Ind. Q. Cont. ................. 3
Non-tech. Elect. .......................... 3 Non-tech Elect. .......................... 3
Total 18 Total 18

Fourth year
First semester Hrs. Second semester Hrs.
IMSE 291 Design Productive Sys. ...... 3 IMSE 292 Design Prod. Systems ...... 3
IMSE Tech. Elect. ........................ 3 IMSE Tech. Elect. ........................ 3
E E 102 Basic Elect. Instruc. .......... 1 Select 2 of the following 4 courses: .... 6
IMSE 202 Manufact. Proc. ............... 2 MAE 42 Dynamics
IMSE 203 Man. Proc. Lab ............... 1 MAE 101 Thermodynamics
IMSE 284 Simula. by Digital Meth. ... 3 MAE 114 Fluid Mechanics
Total 16 Total 15

Note: PHYS 11 may be delayed until the sophomore year. In its place select a Cluster A course. The non-
technical electives must be chosen so as to meet the University LSP requirements and the ABET guidelines.
Before entering the senior design course (IMSE 291 and 292) the students must have completed their math
and science requirements in the first and second year plus completed seven of the ten required IMSE
courses through the third year.

Department of Mechanical and Aerospace Engineering
Donald W. Lyons, Ph.D., Chair.

Curriculum in Aerospace Engineering

Degree: Bachelor of Science 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.

The aerospace engineering program at WVU is designed to prepare the student
for a career in the aerospace industries and in government research and develop-
ment centers and laboratories, as well as in military mission-oriented agencies. The
undergraduate curriculum also allows the student to prepare for graduate studies in
aerospace engineering or in other engineering and non-engineering fields.

The objective of the undergraduate program in aerospace engineering is to
prepare the graduate for the varying demands of the workforce in the technological
arena and for the intellectual demands of graduate education. This is accomplished
by 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. The undergraduate student extensively studies the basic principles of fluid dynamics, solid mechanics and structures, stability and control, and thermal sciences and propulsion. The senior year includes two capstone design courses in aircraft and spacecraft, respectively.

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.

Students can simultaneously pursue B.S. degrees in both aerospace engineering and mechanical engineering by completing additional courses. Information on this 158 credit hour, four-and-one-half-year option can be obtained from the MAE department.

For those students who plan a career in medicine, dentistry, or related areas, but who desire an aerospace engineering degree before entering the appropriate professional school, certain course substitutions may be made. These substitutions include biology (eight hours) and organic chemistry (eight hours) to be substituted for nine hours of technical electives and three hours of heat transfer. All students must satisfy design course requirements as specified by the department. This selection will help the student satisfy admission requirements to the professional schools in the health sciences. The aerospace engineering program at WVU is administered by the faculty of the Department of Mechanical and Aerospace Engineering.

Minimum Grade-Point Average Requirement for Graduation (B.S.A.E.)

A requirement for graduation in aerospace engineering is a departmental grade-point average of at least 2.0 in all required mechanical and aerospace engineering departmental courses. If a required MAE course is repeated, only the hours credited and the grade received for the last completion of the course will be counted in computing the student’s departmental grade-point average. It is important for students to take courses in the order specified as much as possible; all pre- and co-requisites must be observed.

Aerospace Engineering

First year
Common first year as listed on page 198.

<table>
<thead>
<tr>
<th>Second year</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 17 Multivar. Calculus ..............</td>
<td>4</td>
<td>MATH 18 Elem. Diff. Equat. ..................</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 12 General Physics .................</td>
<td>4</td>
<td>MAE 42 Dynamics ................................</td>
<td>3</td>
</tr>
<tr>
<td>MAE 41 Statics .............................</td>
<td>3</td>
<td>MAE 114 Fluid Mechanics .....................</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2 Comp. and Rhetoric ..............</td>
<td>3</td>
<td>Non-tech. Elect. .................................</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

College of Engineering and Mineral Resources 217
### Curriculum in Mechanical Engineering

**Degree: Bachelor of Science 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, a 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.

The objective of the undergraduate program in mechanical engineering is to prepare the graduate for the varying demands of the workforce in the technological arena and for the intellectual demands of graduate education. This is accomplished by a judicious combination of fundamentals, including mathematics and sciences, and extensive practical experience which provides modern engineering tools.
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 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 158 credit hour, four-and-one-half-year option can be obtained from the MAE department.

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 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 pre- and co-requisites must be observed.

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 is as follows:

**Mechanical Engineering**

*First year*

Common first year as listed on page 198.

**Second year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 32 Intro. Mech. Engr.</td>
<td>3</td>
<td>MAE 42 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 41 Statics</td>
<td>3</td>
<td>MAE 43 Mech. of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MATH 17 Multivar. Calculus</td>
<td>4</td>
<td>MAE 101 Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 12 General Physics</td>
<td>4</td>
<td>MATH 18 Elem. Diff. Equat.</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 2 Comp. and Rhetoric</td>
<td>3</td>
<td>MAE 53 Dynam. and Strength Lab</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-tech Elec.</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td></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>MAE 113 Appld. Kinematics/Dynm</td>
<td>3</td>
<td>MAE 104 Analy. of Physical Sys.</td>
<td>3</td>
</tr>
<tr>
<td>MAE 114 Fluid Mechanics</td>
<td>3</td>
<td>MAE 158 Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>MAE 145 Thermal and Fluids Lab</td>
<td>1</td>
<td>MAE 181 Mech. Engr. Instru.</td>
<td>3</td>
</tr>
<tr>
<td>EE 103 Intro. Electronic Instru</td>
<td>3</td>
<td>IE 202 Manufacturing Process</td>
<td>2</td>
</tr>
<tr>
<td>EE 104 Instrumentation Lab</td>
<td>1</td>
<td>IE 203 Man. Process Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHE 105 Engr. Materials Sci.</td>
<td>3</td>
<td>Non-tech. Elect.</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td></td>
<td><strong>Total</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>MAE 183 Prin. of Engr. Design</td>
<td>3</td>
<td>Prof. elect.</td>
<td>3</td>
</tr>
<tr>
<td>MAE 122 Vibrations and Controls</td>
<td>3</td>
<td>E E 101 Intro to Elec Pwr Device Sys</td>
<td>3</td>
</tr>
<tr>
<td>Prof. elect.</td>
<td>3</td>
<td>E E 102 Basic Electrical Lab</td>
<td>1</td>
</tr>
<tr>
<td>Non-tech. Elect.</td>
<td>3</td>
<td>Non-tech. Elect.</td>
<td>3</td>
</tr>
<tr>
<td>Non-tech. Elect.</td>
<td>3</td>
<td>Non-tech. Elect.</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>

PHYS 11 may be delayed until the sophomore year and replaced with a course from WVU Liberal Studies Program Cluster A or Cluster B. The professional electives (six hr.) are selected by the student with the advice and approval of the advisor. The courses selected should form a clear and consistent pattern according to the career objectives of the student. The professional elective credits must be selected from a list of approved courses in the department. Non-technical elective LSP courses must consist of 12 hours of Cluster A and 12 hours of Cluster B, and at least three disciplines in each group.

**Department of Mining Engineering**

Syd S. Peng, Ph.D., Chair.

**Curriculum in Mining Engineering**

**Degree: Bachelor of Science 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 B.S. in Mining Engineering Program at WVU is designed to produce a modern mining engineer who is capable of designing and managing a modern mine. Specifically, a B.S. in mining engineering graduate will have:

1. An ability to design a system, component, or process to meet desired needs;
2. An ability to function on or lead multidisciplinary teams.
3. An ability to communicate effectively.
4. A recognition of the need for, and an ability to engage in, lifelong learning.

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-work situation.
Mining Engineering (B.S. Min.E.)

First year
Common first year as listed on page 198.

Second year
First year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 17 Multivar. Calculus</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 151 Struct. Geol. for Engrs.</td>
<td>3</td>
</tr>
<tr>
<td>MinE 105 Ug Mining Systems</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2 Comp. and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>MinE 101 Mine Surveying</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
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</table>

Second semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 18 Elem. Diff. Equat.</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 12 General Physics</td>
<td>4</td>
</tr>
<tr>
<td>MAE 41 Statics</td>
<td>3</td>
</tr>
<tr>
<td>MinE 106 Surf. Mining Systems</td>
<td>4</td>
</tr>
<tr>
<td>STAT 101 Elem. Stat. Inference</td>
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</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

Third year

First semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MinE 206 Mining Expl. and Eval.</td>
<td>3</td>
</tr>
<tr>
<td>M 281 App. Min. Comp. Meth</td>
<td>3</td>
</tr>
<tr>
<td>EE 101 Intro. Elec. Pwr. Dev.</td>
<td>3</td>
</tr>
<tr>
<td>MAE 42 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 114 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>LSP Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

Second semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MinE 217 Coal Preparation</td>
<td>3</td>
</tr>
<tr>
<td>MinE 271 Mine and Safety Mgmt.</td>
<td>3</td>
</tr>
<tr>
<td>MAE 43 Mech. of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MAE 101 Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 208 Sci. and Tech. Writing</td>
<td>3</td>
</tr>
<tr>
<td>LSP Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

Fourth year

First semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MinE 211 Rock Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>MinE 231 Mine Envirn. Engr.</td>
<td>3</td>
</tr>
<tr>
<td>Prof. Elective</td>
<td>3</td>
</tr>
<tr>
<td>LSP Elective</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
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</table>

Second semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MinE 296 Mine Design</td>
<td>4</td>
</tr>
<tr>
<td>AGRN 255 Recl. of Disturbed Soils</td>
<td>4</td>
</tr>
<tr>
<td>LSP Elective</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

Total: 138


Department of Petroleum and Natural Gas Engineering
Sam Ameri, M.S., P.E., Chair.

Curriculum in Petroleum and Natural Gas Engineering

Degree: Bachelor of Science 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 program’s objective is to provide a modern petroleum and natural gas engineering education, with proper balance between theory and practice. Graduates will have a thorough understanding of scientific, geological, and engineering principles, petroleum engineering fundamentals, and their application in fluid hydrocarbons recovery. The students will also be proficient in the use of computers, and in oral and written communication. Moreover, students will develop an appreciation for the ethical, social, safety, and economic considerations in engineering practice. Graduates will be prepared for professional practice in industry and/or government, or to enter post-graduate training in petroleum engineering.

The specific goals of the petroleum and natural gas engineering curriculum are as follows:

- Students will have the ability to apply their knowledge of mathematics, science, and engineering.
- Students will have a thorough understanding of scientific and engineering principles.
- Students will understand the fundamental concepts of petroleum engineering and use these fundamentals to solve petroleum and natural gas engineering problems.
- Students will be proficient in computer programming and in the use of computer software.
- Students will learn to work independently and also effectively with their peers.
- Students will be able to design and perform laboratory experiments, gather data, and test theories.
- Students will be able to apply engineering design principles to petroleum and natural gas engineering problems.
- Students will be proficient in their oral and written communication of their work and ideas.
- Students will develop an understanding of the ethical, social, safety, and economic considerations in engineering practice.
- Students will appreciate their obligations and responsibilities to their employer and society.
- Students will be prepared for life-long continuing education.

These goals 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 the bachelor’s degree.

Petroleum and Natural Gas Engineering
First Year
Common first year as listed on page 198.

Second year
<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 12</td>
<td>4</td>
<td>MAE 101</td>
<td>3</td>
</tr>
<tr>
<td>MATH 17</td>
<td>4</td>
<td>MATH 18</td>
<td>4</td>
</tr>
<tr>
<td>MAE 41</td>
<td>3</td>
<td>MAE 43</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 151</td>
<td>3</td>
<td>MAE 114</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2</td>
<td>3</td>
<td>STAT 201 or IMSE 113</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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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>PNGE 232</td>
<td>3</td>
<td>PNGE 210</td>
<td>4</td>
</tr>
<tr>
<td>M 281</td>
<td>3</td>
<td>PNGE 212</td>
<td>1</td>
</tr>
<tr>
<td>PNGE 233</td>
<td>3</td>
<td>PNGE 244</td>
<td>1</td>
</tr>
<tr>
<td>EE 101</td>
<td>3</td>
<td>ECON 55</td>
<td>3</td>
</tr>
<tr>
<td>ECON 54</td>
<td>3</td>
<td>GEOL 272</td>
<td>3</td>
</tr>
<tr>
<td>LSP elect.</td>
<td>3</td>
<td>LSP elect.</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Fourth year
<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNGE 211</td>
<td>3</td>
<td>PNGE 225</td>
<td>1</td>
</tr>
<tr>
<td>PNGE 234</td>
<td>3</td>
<td>PNGE 295</td>
<td>3</td>
</tr>
<tr>
<td>PNGE 235</td>
<td>3</td>
<td>PNGE 299</td>
<td>3</td>
</tr>
<tr>
<td>PNGE 241</td>
<td>3</td>
<td>Prof. elect.</td>
<td>3</td>
</tr>
<tr>
<td>PNGE 270</td>
<td>4</td>
<td>LSP elect.</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Total: 136**

**Notes:** Recommended professional electives: PNGE 224, 262, 271, plus others approved by the department.
LSP Electives: University LSP Curriculum.
The non-technical electives must be chosen so as to meet the University LSP requirements and the ABET guidelines.
College of Human Resources and Education
William L. Deaton, Ph.D., Dean.
Ernest R. Goeres, Ph.D., Associate Dean.
Anne H. Nardi, Ph.D., Associate Dean.

Degree Programs
The College of Human Resources and Education offers three programs in which students may major. The degree programs are:
- Bachelor of Science in Speech Pathology and Audiology
- Five Year Integrated Baccalaureate/M.A. Program in Elementary Education
- Five Year Integrated Baccalaureate/M.A. Program in Secondary Education

Information about graduate degrees and programs is available in the West Virginia University Graduate Catalog.

Nature of Program
The College of Human Resources and Education is divided into four academic departments: advanced educational studies, counseling, rehabilitation counseling and counseling psychology, educational theory and practice, and speech pathology and audiology. The college’s faculty and staff are located in Allen Hall on the Evansdale Campus.

The College offers an undergraduate program 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 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 public 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 academic level 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, education foundations, educational psychology, and technology education. The Rehabilitation Research and Training Center, the Center for Learning and Technology, the Job Accommodation Network, the Speech and Hearing Clinic, the Benedum Center for Education Reform at WVU, the Center for Student Advising and Records, and the Reading Clinic are also administered through 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 Board of Trustees and 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.
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 can not 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.

Teacher Education
R. Jerrald Shive, Chairperson, Department of Educational Theory and Practice.

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 undergraduate 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.

Programs for Elementary Education

All students preparing to teach early and middle childhood must complete requirements for the Multi-Subjects K-4* Program. They must also select at least one of the following specialization options.

Specializations for Grades 5-8
- French
- General science
- Language arts
- Mathematics
- Social studies
- Spanish

Specializations for K-12*
- Mentally Impaired

Specializations for Early Childhood
- Prekindergarten and kindergarten

*Change under review.
Programs for Secondary Education
Grades 5-12 and 9-12
Students preparing to teach secondary education may select approved combinations of specializations in the following subjects and grade levels.

Specializations in Grades 5-12
- English
- French
- General science
- Health education
- Mathematics
- Oral communications
- Social studies
- Spanish

Specializations in Grades 9-12
- Biology
- Chemistry
- German
- Journalism
- Physics
- Russian

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 course work. To be admitted to pre-education, a student must have an ACT score of 23 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 after 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 once each year in the spring semester. Admissions to teacher education are limited. Within 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 course work.
- Achieve a 2.75 grade-point average (GPA) computed on all approved University work attempted, a 2.5 GPA on work completed in the specialization, and a 3.0 grade-point average 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 National Teacher Examination Pre-Professional Skills Tests.
- Demonstrate acceptable levels of performance in communication and microcomputing.
- 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 you wish to teach, and (d) evaluations from voluntary work experience.
• Complete successfully EDUC 100 and all its prerequisites.
• Complete an approved volunteer or work experience with children or youth.
• Complete any additional requirements of specific program areas.

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 Potomac State will be reviewed by the admissions committee and admitted to the specialization of their choice in order of decreasing GPA 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. When equal candidates are being considered, West Virginia residents will be given priority in all cases. Minority students may be given special consideration for admission to the major. When all qualified pre-education students have been accommodated, transfer students from other programs will be considered for admission.

Remediation Options
Students who do not meet the skill-proficiency requirements listed under “General Requirements for Admission into Teacher Education,” may avail themselves of the numerous remediation options on campus, including the Reading and Study Skills Laboratory, the Microcomputer Laboratory, and the Learning Resources Center.

General Retention Requirements
Teacher education students must maintain a 2.75 grade-point average in all hours attempted, 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 prior to the ninth 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 degree in subject specialization (for prospective secondary teachers) or multidisciplinary studies (for prospective elementary 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 total hours with a GPA of at least 3.0 in the graduate hours.
• Submit an acceptable professional portfolio.

General Requirements for Professional Certification
The individual candidate applies for professional certification. To teach in the public schools of West Virginia, you 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:

College of Human Resources and Education 227
• 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.
• 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, 501 Allen Hall.

Calculation of Grade-Point Averages
The West Virginia State Department of Education’s system of calculating grade-point averages for certification purposes differs in some respects from the WVU system. For certification, all course work 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 Board of Trustees institutions.

Teacher Education Program
Beginning with students who enrolled at WVU in fall 1995, the redesigned teacher education program is in effect. All students enrolled in the new program will complete the following professional education sequence as part of the five year program.

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<tr>
<th>Year</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>One</td>
<td>EDUC 1 Education Colloquium*</td>
<td>Spring Volunteering requirement**</td>
</tr>
<tr>
<td>Two</td>
<td>EDUC 1* Volunteering Req.**</td>
<td>EDUC 100 Professional Inquiry</td>
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<tr>
<td>Three</td>
<td>EDUC 101 Learning I</td>
<td>EDUC 102 Learning II</td>
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<td></td>
<td>EDUC 111 Practicum I</td>
<td>EDUC 112 Practicum II</td>
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<td>Four</td>
<td>EDUC 200 Instruct. Design &amp; Eval.</td>
<td>EDUC 201 Managing &amp; Organizing Learning Environments</td>
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<td>EDUC 210 Practicum III</td>
<td>EDUC 211 Practicum IV</td>
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<tr>
<td>Five****</td>
<td>EDUC 212 Prof. internship</td>
<td>Prof. development semester***</td>
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<td>EDUC 300 Teacher as Researcher</td>
<td>EDUC 301 Context of Education</td>
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<td>EDUC 302 Prof. Id.: Teacher as Leader</td>
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<td></td>
<td></td>
<td>EDUC 311 Instructional practicum</td>
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</tbody>
</table>

*EDUC 1 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 their 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. Twelve credit hours are 200 level, the remainder are 300 level.
Other coursework in pedagogy, content and liberal studies are also prescribed. Students accepted into pre-education will be provided with specific program information as part of the content of EDUC 1 Colloquium which is taken in the fall semester of either the first or second year. Students may also contact the Department of Educational Theory and Practice (304) 293-3441 for information.

**Elementary Education**
Students preparing to be elementary teachers earn a baccalaureate degree in multidisciplinary studies and a masters 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 earn West Virginia licenses to teach multi-subjects in grades K-4 and in their specialization. Students select from the following specializations: French 5-8, Spanish 5-8, math 5-8, sciences 5-8, social studies 5-8, English/language arts 5-8, early childhood (prekindergarten-kindergarten), or special education K-4*. 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 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

*Change under review.

**Secondary English Education**
Students preparing to be secondary English teachers earn a baccalaureate degree in English and a masters 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 earn West Virginia licenses to teach English/language arts in grades 5-12. 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 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

**Secondary Mathematics Education**
Students preparing to be secondary mathematics teachers earn a baccalaureate degree in mathematics and a masters 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 earn West Virginia licenses to teach mathematics in grades 5-12. 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 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

**Secondary Social Studies Education**
Students preparing to be secondary social studies teachers earn a baccalaureate degree in interdepartmental studies with a major in social studies and a masters 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 earn West Virginia licenses to teach social studies in grades 5-12. 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 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

**Secondary Foreign Language Education**
Students preparing to be secondary foreign language teachers of Spanish, French, German, or Russian earn a baccalaureate degree in foreign languages with a major in the appropriate language(s) and a masters 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 earn West Virginia licenses to teach Spanish in grades 5-12, French in grades 5-12, German in grades 9-12, or Russian in grades 9-12. (German and Russian 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 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

Secondary Science Education
Students preparing to be secondary science teachers earn a baccalaureate degree in multidisciplinary studies and a masters 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 9-12, chemistry 9-12, physics, 9-12, general science 5-12. Graduates earn 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 501 Allen Hall. Please contact the HR&E Advising Center at (304) 293-2705 for more information about this program and its requirements.

Speech Pathology and Audiology
Conrad Lundeen, Ph. D., Chairperson.

Program Objectives
The Speech Pathology and Audiology Department 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 liberal studies, 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 jobs 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 freshmen and sophomore years. Pre-SPA students will be assigned an advisor in the Human Resources and Education Center for Student Advising and Records (501 Allen Hall).

To qualify for admission, incoming freshmen must present an overall high school GPA of 3.0, or higher 1050 on the SAT or higher 23 on the ACT.

Students who transfer into pre-SPA during the freshmen or sophomore year from either another major at WVU or from another university must present a grade-point average of 3.0 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 University Liberal Studies Program (LSP), and others as listed below:
   a. Cluster A: at least six academic hours completed.
   b. Cluster B: Linguistics 1 and Psychology 1.
   c. Cluster C: at least 11 academic hours completed. Must include:
      - Lab course = Biology 1 and 3 or biology 2 and 4 or physics 1;
      - Math course = College algebra (MATH 3) or calculus course;
      In addition to the lab course above, you must select at least 4 additional academic hours from the following science courses:

        4 hr. courses (select at least 1)
        BIOL 1 and 3, BIOL 1 and 4, BIOL 15; CHEM 11, CHEM 12, CHEM 15, CHEM 16; C S 5, C S 15; PHSC 11, PHSC 12; PHYS 1, PHYS 2, PHYS 11.
        or

        3 hr. courses (select at least 2)
        BIOL 166, BIOL 232; PSYC 232; HN and F 71; MDS 90.
   d. Completion of English 1 and 2.

2. Completion of SPA 50 with a minimum grade of B.

3. Overall GPA of 3.0.

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 either the SPA Office or HR&E Center for Student Advising and Records (501 Allen Hall). It is the student’s responsibility to obtain an application form and submit it to the SPA Office between the deadline dates of January 15 and February 15. No applications will be accepted after February 15th. After the application has been reviewed and verified, students will receive a letter notifying them of the department’s admission decision. Students will be ranked according to their overall GPA for all undergraduate coursework. The top 45 students will be admitted to the B.S. degree program at the beginning of their junior year. These students will be assigned an advisor in the SPA Department. 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 degree of Bachelor of Science (B.S.) in Speech Pathology and Audiology. The following are specific requirements:

1. Successful completion of the University Liberal Studies Program (LSP), including all pre-SPA required courses plus Statistics 101 or Economics 125 (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 53 hours of academic coursework in SPA.
4. Successful completion of minimum requirements in clinical practicum
5. A cumulative GPA in all speech pathology and audiology courses and overall which meets standards set by the department.

Technology Education
David L. McCrory, Chair.
706 Allen Hall

The Technology Education department is a graduate-level program, but it does offer selected liberal studies approved courses to interested students at the undergraduate level. The program includes the study of technology, the relation of technical systems to the civilization process, and the implications of changes in these systems on the quality of life and the education of citizens. Technology, in its simplest definition, is the study of human techniques for making and doing things, and is primarily concerned with the when, where, how, and why of such techniques, and interpreting them in a social context.

The goal of the program is an increased level of understanding about technological systems in order to provide the basis for controlling, directing, and redirecting these systems for the benefit of humankind. Faculty and students in the program are committed to a continuing investigation of the impact of technology on people and society—including education and the environment.
Perley Isaac Reed School of Journalism
William T. Slater, Ph.D., Dean.
R. Ivan Pinnell, Ph.D., Associate Dean.

Degree Program:
Bachelor of Science in Journalism

Specialized Areas:
Advertising
Broadcast News
Journalism Education
News-Editorial
Public Relations

The Perley Isaac Reed School of Journalism, established in 1939 and one of the oldest of its kind in the United States, offers appropriate education in the broad area of mass communications. Many of the more than 4,200 graduates of the School of Journalism use their training to cover news events throughout the world for print and electronic news media, to manage major accounts in advertising agencies and media departments, and to serve in public relations positions with corporations and other institutions. They are newspaper editors and reporters, radio and television broadcasters, university professors, attorneys, and business men and women.

Accreditation
The Accrediting Council on Education in Journalism and Mass Communications (ACEJMC) fully accredits the School of Journalism and its five sequences: advertising, broadcast news, graduate professional, 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 affiliates 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 assisting in an investigation under the University’s Equal Opportunity/Affirmative Action Plan. Inquiries regarding the University’s nondiscrimination policy may be directed to the Director of Affirmative Action/EO Programs, 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. The State’s minority population was reported as 4.1 percent (3.1 percent African American in the 1990 census), yet the minority population of the School of Journalism in 1997-98 was 8.2 percent.

SOJ colleagues wish to maintain minority enrollment as high as or higher than the percentage of minorities in West Virginia. To recruit minority students, the faculty and staff 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 all who tell admissions counselors about being interested in journalism, 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 dean, associate dean, and director of external relations attend University minority recruitment activities. Women comprise 41.6 percent of the School’s full-time faculty and 60 percent of the adjunct faculty.

The School established the Journalism Qualifying Examination, along with C’s or better in certain courses, as pre-entrance admission requirements in summer 1990; these achievement thresholds have helped to assess students’ verbal skills as well as writing career aptitude. For a list of recommended pre-test chapter readings before the fall, spring, and summer exam dates, you may consult pre-journalism faculty advisers. Colleagues are investigating verbal skills tutoring software programs for possible use during open Macintosh lab hours so students can prepare for the qualifying exam subjects—vocabulary, reading comprehension, spelling, language mechanics, and language expression. These programs may help the prospective majors to perform well in JRL 15, the School’s Writing (W) course.

To prevent disenfranchising minorities and West Virginians, the School gives special 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 Press Women, the West Virginia Broadcasters Association, the West Virginia Associated Press Broadcasters Association, Public Relations Society of America (West Virginia and Pittsburgh chapters), American Advertising Association of America, American Advertising Federation, Business and Professional Advertising Association, the Pittsburgh Ad Club, National Press Photographers Association, Society of Professional Journalists, and the West Virginia Public Relations Associates, an adjunct to the press association. These groups have provided educational and financial support to the School.

In turn, the School of Journalism offers regional advertising seminars to aid newspaper publishers, broadcasters, and retail merchants. Newswriting workshops assist state news staffs and weekly newspaper stringer/correspondents. Faculty have provided science writing symposia and seminars about Appalachia, women in the media, the future of transportation, writing improvement, and interpretive vs. advocacy reporting for news people; they also have worked with the Public Relations Associates of the Press Association in establishing seminars. The School has assisted high school journalism teachers by sponsoring summer workshops and by working with their publications staffs, especially during the annual West Virginia High School Journalism Competition each spring. In 1990 the School of Journalism, with Reader’s Digest, co-sponsored a writers’ workshop. Twelve editors of national publications and more than 140 writers participated.

Journalism Organizations

Several organizations affiliated with the School of Journalism provide honor and recognition as well as fellowship and education. They are:

- Alpha Delta Sigma, scholastic advertising honorary.
- American Advertising Federation, professional advertising fraternity.
- Kappa Tau Alpha, national scholastic honorary for students with exceptional academic records in journalism.
- Public Relations Student Society of America, national public relations professional organization.
- Broadcast News Club, a career exploration and professional development organization for Broadcast News students.
- Black Media Association, an organization affiliated with a national professional association whose purpose is to enhance media career opportunities for African American students.
The Society of Professional Journalists, professional society for news-ed and broadcast news majors.

Nature of Program

The study of journalism, once limited to vocational training of newspaper reporters, now includes many varieties of communication. Our program emphasizes professional ethics and responsibilities in the broad study of mass communication and society.

A journalism education involves more than learning to write and to edit news stories, to broadcast documentaries, or to develop creative advertisements and public relations campaigns; it involves the study of substantive current issues, mass media trends, as well as historical and cultural developments in worldwide civilization. Graduates should have a thorough understanding of the U.S. Constitution and the special roles of freedom of the press and freedom of speech in our political system. Such an education must be interdisciplinary, based upon the liberal arts, social sciences, natural sciences, and business.

The basic goal of the School of Journalism is to educate our graduates for media-related careers in West Virginia and neighboring states. Some of our alumni will seek and succeed in national and international careers.

Graduates of the School earn a B.S.J. and are expected to demonstrate the following:

• An understanding of the history, structure, and function of mass media.
• The basis for a life-long commitment to ethical behavior, responsible citizenship, and public service, especially in terms of the Constitutional role of the mass media and professionals who produce their content.
• Proficiency in written and oral communication.
• Ability to read and to listen critically (to analyze and to interpret).
• Proficiency in interviewing skills.
• The ability to apply those skills to specific media and media-related occupations.
• The ability to secure employment in a media or media–related field.
• The ability to advance to leadership positions in that field (management ability).
• Knowledge, understanding, and 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.

When you enroll in the School of Journalism, you will find a faculty of 12 full-time and several part-time professors with extensive mass communications experience. The faculty represents the diversity of the School itself with appropriate educational backgrounds and professional experience with newspapers, the wire services, radio and television, public relations firms, advertising agencies, major corporations, and governmental agencies.

Various specialization areas provide realistic outlets for students’ interests. Campus reporters and editors are introduced to local print (Daily Athenaeum, The Dominion Post) and electronic media (WVU Television Productions, WNPB-TV, West Virginia Public Radio, Metonews Radio Network and WWVU-FM). Photojournalists gain practical experience with the Daily Athenaeum, The Dominion Post and AP wire service. Students of print journalism learn electronic editing and pagination. Public relations and advertising majors execute projects of importance to local and state organizations. Internships and fellowships are available on campus, throughout West Virginia, and in many other locations.

The School of Journalism is in renovated Martin Hall, WVU’s oldest building (constructed in 1870). More than $1.8 million was spent on renovating, furnishing, and equipping the building in 1976-77. Three laboratories are equipped with Macintosh systems for teaching beginning reporting through desktop publishing. Other labs house modern radio and television equipment, light tables, photolarger, cameras, and space for independent study. In addition, the reading room stocks current newspapers, magazines, professional journals, and reference works.

Perley Isaac Reed School of Journalism 235
Typing Proficiency
You will be expected to submit all assignments in neat, type-written or word-processed form. Because you will have professors who prefer you know the touch system of typing before you enroll in Journalism 15, you must demonstrate or will need to develop your word-processing proficiency in this first writing class required for each sequence. Prior to being admitted to JRL 15, students need to have some basic operating knowledge of Macintosh computers and will need to know how to save copy onto the hard drive and onto a double- or high-density disk. Plan ahead so you will be able to type easily and to concentrate on ideas, structure, and final assignments before deadlines.

Admission to Pre-Journalism
The School of Journalism uses the same admission standards as the University for Pre-Journalism students.
You could qualify for direct admission to the Perley Isaac Reed School of Journalism if you are a freshman with at least a 2.5 cumulative non-weighted high school grade-point average and at least a 22 enhanced ACT English score or at least a 520 recentered SAT verbal score.

Proficiency in English
The faculty emphasize competence in writing. If you plan to major in journalism, you must achieve at least C grades in English 1 and 2, Library Science 1/MDS 3, and Journalism 1. In addition, you must earn a competitive score on the Journalism Qualifying Examination (JQE) to be eligible for Journalism 15. You may not enroll in most journalism courses until after you have completed these prerequisites.

Priorities for Admission to Journalism 15 and Sequence-Specific Courses
Students who meet the basic criteria for JRL 15 admission will be ranked by an index score derived from a combination of the student’s cumulative GPA and JQE score; each candidate may earn up to 50 points for a 4.0 and up to 50 points for a 100 JQE score. Only Pre-Journalism majors may enroll in JRL 15 on a first-come, first-served basis via STAR registration. If all sections are full, students seeking JRL 15 may contact a professor immediately or attempt enrollment in a subsequent term. West Virginia residents and minority students will be given special consideration regarding Journalism 15 admission.

JRL 1, ADV 113, BN 117, JRL 120, and PR 111 are open to all University students. Those who attempt to enroll in other journalism-related courses but who lack the appropriate prerequisites will be removed from such classes.

Scholarships
Approximately 40 School of Journalism majors are awarded financial scholarships ranging from $400 to $1,500 each term. Students must apply to the School’s Scholarship Committee during announced selection periods. Awards are generally based on academic performance, potential for success in media careers, and financial need.
You can seek SOJ scholarships earlier if you have a 3.0 or higher cumulative GPA.

Admission
To be admitted as a School of Journalism major, you must meet these requirements:
- Achievement of at least C grades in English 1 and 2 (See “Proficiency in English” above.).
- Demonstration of necessary skills by scoring competitively on the School’s Journalism Qualifying Examination or its equivalent to vie for competitive acceptance into the School.
• Completion of JRL 1 and 15 with at least C grades.
• Completion of LS 1/MDS 3 with at least a C grade.
• Successful completion of 36 or more hours (excluding F’s) with at least a 2.0 cumulative grade-point average (unless you are admitted earlier by direct admission).
• Completion of a contract, an application for admission to the School of Journalism, and an Academic Status Change form (typically during the JRL 15 term); the SOJ Academic Standards Committee must accept each candidate for one of his/her 1st-4th major preferences (Advertising, Broadcast News, News-Editorial, or Public Relations).
• Reapplication to the School and to a specific sequence curriculum during a subsequent academic term if a candidate cannot gain admission to the major of his/her choice on the first attempt.

After the associate dean compares your credentials to others’ seeking the same sequence, you will receive an acceptance or rejection letter and learn your newly assigned advisor’s name.

**Graduation Requirements**

When you satisfy all general University Liberal Studies Program (LSP) requirements and meet the School of Journalism requirements, you are recommended for the Bachelor of Science in Journalism degree. Your combined credits acquired as a Pre–Journalism student and as a regularly enrolled journalism major must total no fewer than 128. This number excludes non-translated courses from other colleges and any course (such as Music 100) repeated more than once unless it represents a different learning experience. The dean may approve any exception after studying a written proposal signed by a student, a specific departmental advisor, and a proposed intern supervisor if one is involved. Exceptions will not normally include internships that would be acceptable for JRL 241 credit. While WVU frequently accepts all junior college credits, the School of Journalism follows the Accrediting Council on Education in Journalism and Mass Communications recommendation to accept no more than 12 journalism credits from such institutions.

The School of Journalism will accept no more than 12 journalism/journalism-related courses from colleges and universities outside the University of West Virginia System.

In line with the national accreditation council’s and the School’s philosophy about the ratio of professional journalism courses to liberal arts courses, you will take approximately one-fourth of your hours in journalism. The minimum number of journalism hours is 30, and the maximum number ordinarily is 38. At least 40 hours must be obtained in upper-division courses (numbered between 100 and 400).

You may pursue another degree concurrently, but you must plan the programs with the deans of the two colleges or schools involved. To earn a second baccalaureate degree, you must complete 158 credit hours. If you have one bachelor’s degree, you also may seek a bachelor’s degree in journalism; again, you must plan the program with the dean.

If you are within 12 hours of graduation in the last term, you may elect to take one or more courses for graduate credit. However, you must consult with your advisor and the dean.

**Scholastic Requirements**

To be eligible for graduation, you must earn a minimum 2.0 cumulative grade-point average; concurrently, the average in your minor or second concentration field must be at least 2.0. Courses totaling 15 hours in the minor or second concentration field or 12 hours in each of two second concentration fields must equal the minimum 2.0 grade-point average. Students also must earn at least a C grade in all journalism, advertising, broadcast news, news-editorial, and public relations courses.

Advisees must seek an annual student progress report and a revised curriculum sheet from their advisors to be sure about progressing appropriately and must submit a pre-graduation (penultimate term) student progress report to their respective adviser; these are requirements in preparation for graduation.
Note: Prerequisite/corequisite requirements for Journalism courses may be waived by the consent of the instructor offering the course. Consent is granted when a student demonstrates equivalent experience or the knowledge provided in the prerequisite/corequisite courses.

Academic Minors and Second Concentration Fields
To graduate, you must complete either a minor or one or two second concentration fields.

Consult your advisor about acceptable academic minors, which will appear on your transcript and diploma. However, because ACEJMC does not allow communication studies in the liberal arts spectrum, a WVU journalism major cannot select COMM as a minor.

The WVU administration has approved specific, carefully outlined minors in arts and sciences, business international studies, women’s studies, and some creative arts fields. Students interested in any minors appearing on the official list should confer with their advisors to identify the exact courses and prerequisites required.

In a minor or second concentration field of study, you must earn C’s or better in stipulated classes (at least 15 hours in a subject other than journalism), and three of these hours typically will be in a course numbered under 100; some minors, though, include no lower-division hours. Classes at the 100-level or higher, even if they can be taken more than once, will count only once unless they represent different learning experiences.

If you pursue two second concentration fields simultaneously, the requirements for each field must total at least 12 hours, of which no more than three hours can be numbered under 100.

Full-Time Load/Probation
No one may enroll for more than 19 hours in a single term or 13 hours in two summer sessions without petitioning his/her assigned advisor. A student can take no more than 20 hours without the advisor’s and the associate dean’s approval.

If on probation, a student shall not take more than 15 hours of course work in an academic term; the Committee on Academic Standards may require that someone not take more than 12.

Withdrawal From Class Or University
All students enrolled in journalism courses may withdraw from a course with a W grade until Friday of the tenth week of classes (see the University Calendar for the date). After that, you may withdraw only with the approval of the School of Journalism’s Committee on Academic Standards and will receive a W or WU grade.

Journalism majors who wish to withdraw from the University after the tenth week of any term should report their intent to the Office of Student Life and are automatically suspended from the School of Journalism for a minimum of one term (not including a summer session) unless the late withdrawal results from illness. In such cases, one must present a written excuse at the time of withdrawal to avoid automatic suspension.

Internship/Practicum Credit
A number of internship (JRL 241) opportunities are available for summer credit; to a lesser extent, hours are available during the academic year. All students interested in this option must apply for it, must register in advance for the course, and must establish a contract with a sequence head/designated coordinator and the dean, who will report P-F grades from each supervisor. The contract, essentially an agreement that explains the terms under which credit will be given, describes the anticipated learning experience, including assignments, reports, type of supervision, and required evaluations by a job supervisor and by a member of the School’s faculty.

No more than ten percent of a student’s 30-38 journalism credits (typically one to three) can be earned via practica or an internship, in accordance with ACEJMC standards. Except in special circumstances, students should seek only paid internships. Students for whom a full-time 3-credit-hour internship cannot be arranged may have the option of taking a mini-internship or practicum (Journalism 242) for one or two hours’ credit.
The 1-credit-hour practicum requires approximately ten hours per week for a minimum of ten weeks (or 100 hours) of supervised practical experience with an organization whose activities are related to the student’s sequence major. Two credit hours for the practicum requires approximately 20 hours per week of practical experience for a minimum of ten weeks (or 200 hours’ work). Internships require 300 hours for 3 credits.

Identical qualifications and procedures are required for the internship and the practicum except that the student may take the practicum while enrolled in other SOJ and University courses.

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.

Program Objectives

Advertising Sequence
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. If you can complete the College of Business and Economics admission requirements, you may wish to consider a general business administration minor. Students in this major prepare for careers in advertising agencies, company advertising departments, direct marketing, retail advertising, promotion, and the media.

Broadcast News Sequence
Maryanne Reed, M.A., Coordinator.

Students seeking careers in the broadcasting news and information areas should pursue this curriculum.

The Broadcast News sequence is supported by a complete telecommunications facility, including television and audio studios, and a videotape editing facility. However, the focus and the thrust of instruction in this curriculum stresses 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 motion pictures 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.

Professional staff members of WVU’s Television Productions and of WNPB-TV, Morgantown’s public television station, periodically serve as adjunct instructors and assist in some broadcast news courses.

The student’s minor or second concentration field(s) must be approved by the advisor.
Journalism Education Curriculum
Pamela D. Yagle, M.S.J., Coordinator.

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 High School Journalism Competition, and individual consultation with newspaper and yearbook advisers by School of Journalism faculty.

One of the outgrowths of these cooperative efforts has been a certification program in journalism. The School of Journalism provides courses for that five-year master’s program in the WVU College of Human Resources and Education, which requires a primary teaching field besides journalism.

News-Editorial Sequence
Christine M. Martin, M.A., Coordinator.

The news-editorial curriculum teaches fact-gathering, news and feature writing, editing, advanced reporting, journalism history and law, public affairs reporting, magazine writing, plus editorial and critical writing. The sequence stems from the first journalism courses offered at WVU.

Most news-editorial graduates have found employment with newspapers, magazines, the Internet, and on-line publications and with 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 students are required to have 200 or more column inches of writing published in campus or off-campus news media. news-editorial students frequently earn a minor in political science, history, general English, creative writing, general business administration, sociology or anthropology, or a second concentration in psychology.

Public Relations Sequence
R. Ivan Pinnell, Ph.D., Coordinator.

Public relations offers challenging opportunities to align the interests of industrial, educational, 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 photography.

Public relations majors are encouraged to select minors that will provide a deeper understanding of personal and interpersonal relationships (political science, general business administration, sociology, or anthropology) or a second concentration field that will enhance the student’s projected area of practice (psychology or a science-related subject).

Curriculum Requirements

Suggested 4-year Advertising Schedule

<table>
<thead>
<tr>
<th>First year</th>
<th>First Term</th>
<th>Hrs.</th>
<th>Second Term</th>
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</tr>
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<td>HIST 53</td>
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### Third year

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<td>MINOR/2nd Concentration</td>
<td>3</td>
</tr>
<tr>
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<td>BUSA 120/130</td>
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<td>ENGL (Literature)</td>
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<td>PHIL 2/3/5/10</td>
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**Note:** Some courses are available only once a year; it is the student’s responsibility to arrange his/her schedule accordingly.

### Suggested 4-year Broadcast News Schedule

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#### Second year

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<th>Hrs.</th>
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<td>MINOR/2nd Concentration</td>
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<td>HIST 53</td>
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*Perley Isaac Reed School of Journalism* 241
Third year

<table>
<thead>
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<th>Hrs.</th>
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<td>MINOR/2nd Concentration</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 5/51</td>
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<td>ENGL (Literature)</td>
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<td>BUSA 120/130</td>
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Total Credits 17

Fourth year

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Total 9-18

Note: Some courses are available only once a year; it is the student’s responsibility to arrange his/her schedule accordingly.

Suggested 4-year News-Editorial Schedule

First year

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<td>HUM 1 or 191</td>
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<td>PSYC 1</td>
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Total 16 Total 17

Second year

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<tr>
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Total 18 Total 18

Third year

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<td>MINOR/2nd Concentration</td>
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<tr>
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<td>ENGL (Literature)</td>
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<td>POLS 160</td>
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Total 17 Total 18
### Fourth year

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<td>MINOR/2nd Concentration</td>
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<tr>
<td>PSYC 101/151 or</td>
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<td>Upper-Division SOCA</td>
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<td>General Elective</td>
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* NE 230 is available in only fall terms.
** NE 227 may be available in only the fall term.
*** NE 128 may be available in only spring term.

Note: Some courses are available only once a year; it is the student’s responsibility to arrange his/her schedule accordingly.

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### Suggested 4-year Public Relations Schedule

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<tr>
<td>HUM 1 or 191</td>
<td>3</td>
<td>PSYC 1</td>
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<tr>
<td>JRL 1</td>
<td>3</td>
<td></td>
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<tr>
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#### Second year

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<th>Hrs.</th>
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<td>HIST 52</td>
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<td>HIST 53</td>
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<td>JRL 18</td>
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<tr>
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<td><strong>Total</strong></td>
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#### Third year

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<td>NE 220/230* or JRL 221</td>
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#### Fourth year

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<td>General Elective</td>
<td>5-8</td>
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<td>COMM 15 or SPA 80</td>
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<td>BUSA 120/130</td>
<td>3</td>
</tr>
<tr>
<td>or THET 74</td>
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</tr>
<tr>
<td>PSYC 101/151 or</td>
<td></td>
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<td>Upper-Division SOCA</td>
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<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NE 230 is available in only fall terms.

Note: Some courses are available only once a year; it is the student’s responsibility to arrange his/her schedule accordingly.
School of Medicine
Robert M. D’Alessandri, M.D., Dean.

Medical Technology
Jean D. Holter, Ed.D., Professor and Program Director.

Degree Offered:
Bachelor of Science in Medical Technology

Nature of Program
The undergraduate program in medical technology is administered by the School of Medicine. Students are admitted into the bachelor of science program after completing two years of premedical technology in an accredited college or university. The WVU Medical Technology Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Graduates are eligible for certification by the Board of Registry of the American Society of Clinical Pathologists (ASCP) and by the National Credentialing Agency for Laboratory Personnel (NCA).

The undergraduate curriculum includes the pre-medical technology program, which is offered in the WVU College of Arts and Sciences and at Potomac State College in Keyser, WV, and the medical technology program in the School of Medicine.

Since the last two years are professional in nature, students must be enrolled in the WVU School of Medicine for this entire period. The work of the junior year (the first year in the medical technology program) includes courses to introduce the student to the medical sciences and to prepare the student for the work of the senior year. During the senior year (the second year in the medical technology program), the student receives both didactic instruction and practical experience in Ruby Memorial Hospital laboratories (WVU Hospitals, Inc.). Students may be required to complete part of their clinical rotations at an extramural site in West Virginia.

Ruby Memorial Hospital is located on the University Health Sciences Center Campus and is part of the Robert C. Byrd Health Sciences Center of West Virginia University. The hospital is a tertiary care teaching hospital and referral center. It is a 376 bed facility. The clinical laboratories are on the third floor and occupy approximately one-fourth of the floor. The laboratories are full-service including hematology, chemistry, special chemistry, radioimmunoassay, blood bank, microbiology, mycology, virology, and immunology.

Other Programs
A program is available for certified medical laboratory technicians who desire to complete 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 for the third and fourth years of the program. Students must meet the admission requirements and application deadlines for 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 must meet the admission criteria of WVU and are advised by the Undergraduate Academic Services Center.

Qualified applicants may enter the pre-medical technology program at the beginning of any semester, but the professional sequence outlined is based on entrance in the fall semester of year three. Admission to the pre-medical technology program does not assure admission to the professional program. We recommend that prospective students take mathematics, chemistry, physics, and biology in high school.

Do not take courses such as bacteriology, parasitology, and anatomy until you complete the sophomore year. We recommend a foreign language for students who plan to do graduate work.
Admission to the Professional Program

Please apply for admission into the junior year (first year in the undergraduate medical technology program) before the second semester of the sophomore year in college. Students at WVU or Potomac State College are not transferred automatically from the preprofessional course (first two years) to the professional course (third and fourth years). Students are selectively admitted to the program for their final two years of work.

Requirements for admission to the medical technology program includes course requirements, grade-point average, a personal interview, letters of recommendation, and scores on the Allied Health Professions Admission Test (AHPAT).

The course requirements (prerequisites) are:

- English: six hours of composition and rhetoric (ENGL1 and 2).
- Biology: eight hours of general biology (BIOL 1, 2, 3, and 4).
- Chemistry: twelve hours to include eight hours of inorganic (CHEM 15 and 16) and four hours of organic (CHEM 131)*.
- Physics: eight hours of general physics (PHYS 1 and 2).
- Mathematics: six hours to include minimal requirements of algebra and trigonometry (MATH 3 and 4).
- LSP: 21-24 hours of electives; (12 hours Cluster A and 12 hours Cluster B).

*Transfer students must complete an organic chemistry course(s) (8 hours) that includes aliphatic and aromatic compounds. The course must include a laboratory.

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. A personal interview with the Medical Technology Admission Committee is required. Two letters of recommendation from instructors in physics, chemistry, or biology are required. Scores on the Allied Health Professions Admissions Test (AHPAT) are required.

Admission of international students is in compliance with WVU regulations. At least one science course (chemistry, physics, or biology) must be completed at an institution of higher education in the United States.

Application Procedure

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. There is an application fee of $10.00. The priority date for returning the application form is January 15. The deadline date is February 1 if the student expects to enter the program the next fall semester.

Students at WVU or Potomac State College are not transferred automatically from the pre-professional course to the professional course. Students are selectively admitted to the program.

Pre-Medical Technology Curriculum Plan

First year

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 15 Inorganic</td>
<td>4</td>
<td>CHEM 16 Inorganic</td>
<td>4</td>
</tr>
<tr>
<td>Elective*</td>
<td>3</td>
<td>ENGL 1. Comp. and Rhet.</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3 Algebra</td>
<td>3</td>
<td>Elective*</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 1 and 3</td>
<td>4</td>
<td>BIOL 2 and 4</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 1** Orientation</td>
<td>2</td>
<td>MATH 4 Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>**</td>
<td>**</td>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

Students at WVU or Potomac State College are not transferred automatically from the pre-professional course to the professional course. Students are selectively admitted to the program.
Second year

First semester Hrs. Second semester Hrs.
Electives* ..................................... 9 CHEM 131 Organic ..................... 4
PHYS 1 ......................................... 4 Electives* .................................. 6-9
ENGL 2 Comp. and Rhet. ............ 3 PHYS 2 ......................................... 4
Total 16 Total 14-17

*Electives from Cluster A and Cluster B are to be selected to meet the Liberal Studies Program requirements.
**MTEC 1 is not a required course. It is highly recommended that all students take this course. MTEC 1 is offered each semester.

Medical Technology

Third year (Medical Technology 1)

First semester Hrs. Second semester Hrs.
MTEC 100 ..................................... 4 MBIO 224 ...................................... 1
MTEC 202 ..................................... 2 MBIO 223 ...................................... 5
BIOC 139 ...................................... 5 MTEC 101 ..................................... 4
PHYS 241 ..................................... 4 MTEC 210 ..................................... 1
Elective ......................................... 3 MTEC 291 ..................................... 2
Total 18 MTEC 229 ..................................... 1
MTEC 229 ..................................... 1
Total 14

Fourth Year

(Medical Technology II)

Students receive didactic and clinical instruction in the University Hospitals, Inc. laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. If the student has excessive absences during the senior year, competencies not completed must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

MTEC 200 Orientation No Credit
MTEC 201 Phlebotomy 1
MTEC 220 Immunohematology and Blood Banking 2
MTEC 221 Immunohematology and Blood Banking Laboratory 5
MTEC 230 Clinical Chemistry 2
MTEC 231 Clinical Chemistry Laboratory 5
MTEC 240 Clinical Hematology 2
MTEC 241 Clinical Hematology Laboratory 5
MTEC 250 Clinical Microbiology 2
MTEC 251 Clinical Microbiology Laboratory 5
MTEC 260 Instrumentation 2
MTEC 265 Laboratory Management 2
MTEC 270 Clinical Microscopy 1
MTEC 271 Clinical Microscopy Laboratory 1
MTEC 275 Medical Relevance of Laboratory Analysis 1
MTEC 280 Clinical Immunology 3
Total 39

Graduation Requirements

Junior Year

A student must maintain a grade-point average of 2.0 for each semester to advance to the senior year. Any student with one or more F’s in a semester, or more than one D at the end of the junior year will be suspended from the program. 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. Graduation requires the recommendation of the faculty of the School of Medicine.
Career Opportunities

Notices of employment opportunities are received by the program office and posted for student use.

The market for medical technology graduates varies from state to state and in areas in a particular state. Many graduates are employed in a hospital or clinical laboratory setting as a generalist while others specialize in a particular area such as chemistry, microbiology, blood banking, or hematology. Other graduates work in physicians’ offices, clinics, reference laboratories, public health agencies, research, industry, or education.

Department of Human Performance and Applied Exercise Science

Three divisions make up the Department of Human Performance and Applied Exercise Science. The divisions are:

Division of Exercise Physiology
Includes both an undergraduate and graduate program.

Division of Occupational Therapy
Includes an entry-level masters program.

Division of Physical Therapy
Includes an entry-level masters program.

Exercise Physiology
Rachel A. Yeater, Ph.D., Professor and Chair.

Degree Offered:
Bachelor of Science

Introduction

The WVU exercise physiology program was established in the Robert C. Byrd Health Sciences Center’s School of Medicine in July 1993. Prior to that time, the exercise physiology program was administered in the School of Physical Education. The program offers a four-year curriculum leading to a bachelor of science degree in exercise physiology. The bachelor of science in exercise physiology is a preparatory program for graduate or professional school. Graduates continue their education in areas such as exercise physiology, physical therapy, or medicine. The program is designed to provide students a background in basic science and exercise physiology, as well as courses in nutrition, athletic training, first aid and emergency care, and business.

Exercise Physiology—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 exercise programs based on the results of these evaluations, that are designed to increase the functional capacity of the participants. Exercise physiologists work with athletes, patients, or healthy participants in the areas of disease prevention in wellness programs, or rehabilitation in hospital settings. The bachelor of science program is a preparatory program for graduate school. Graduates of this program continue their studies in exercise physiology, physical therapy, medicine, or other health-related careers. Graduates of the master of science or doctoral program find employment in corporate wellness, hospital rehabilitation, or higher education. Additionally, they 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. Students must complete one year of pre-exercise physiology courses with at least a 2.75 grade-point average. All required courses must be completed with a grade of C or higher.

Pre-Exercise Physiology Courses

English: three hours of composition and rhetoric (ENGL 1).
Biology: eight hours of general biology (BIOL 1, 2, 3, and 4).
Mathematics: six hours of college algebra and trigonometry (MATH 3 and 4).*
First Aid and Emergency Care: 3 hours (CHPR 72).
Liberal Studies Cluster Courses: 12 hours from Cluster A and/or B.

*Math 14, 15 or 128 can be substituted for MATH 3 and 4

Program Requirements

Students must complete the University requirements for the liberal studies program (including 12 hours of cluster A and 12 hours of cluster B). Students must complete the following courses or course equivalents in theory and foundation to meet the exercise physiology program requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS 226 Special Topics: Sports and the Courts</td>
<td>3</td>
</tr>
<tr>
<td>CHPR 72 First Aid and Emergency Care</td>
<td>3</td>
</tr>
<tr>
<td>PET 75 Motor Learning and Development</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 164 Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 165 Exercise Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 168 Laboratory Techniques and Methods I</td>
<td>3</td>
</tr>
<tr>
<td>EXPH 194 Professional Field Experience</td>
<td>6</td>
</tr>
<tr>
<td>EXPH 196 Senior Thesis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3 College Algebra*</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4 Plane Trigonometry*</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1 Introductory Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 2 Introductory Physics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 15 Fundamentals of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 16 Fundamentals of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 133 &amp; 135 Organic Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 134 &amp; 136 Organic Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1 &amp; 3 General Biology and Lab**</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 2 &amp; 4 General Biology and Lab**</td>
<td>4</td>
</tr>
<tr>
<td>PSIO 141 Elementary Physiology</td>
<td>4</td>
</tr>
<tr>
<td>HN &amp; F 71 Introduction to Human Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>BUSA 120 Survey of Management</td>
<td>3</td>
</tr>
<tr>
<td>BUSA 130 Survey of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>STAT 101 Elementary Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>Suggested Electives: BIOL 19 The Living Cell (4 hrs.) and Biochemistry 139 (3 hrs.)</td>
<td></td>
</tr>
</tbody>
</table>

*Students may take MATH 14, MATH 15, or MATH 128 in place of MATH 3 and 4.
**Students may take BIOL 15 and 17 in place of BIOL 1-4.

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

#### Pre-Exercise Physiology Required Courses

<table>
<thead>
<tr>
<th></th>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGL 1</strong></td>
<td></td>
<td>3</td>
<td><strong>MATH 4</strong></td>
<td>3</td>
</tr>
<tr>
<td>Cluster A or B</td>
<td></td>
<td>6</td>
<td><strong>Biol 2 &amp; 4</strong></td>
<td>4</td>
</tr>
<tr>
<td>MATH 3*</td>
<td></td>
<td>3</td>
<td>Cluster A or B</td>
<td>6</td>
</tr>
<tr>
<td>BIOL 1 &amp; 3**</td>
<td></td>
<td>4</td>
<td>CHPR 72</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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</table>

#### Sophomore

<table>
<thead>
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<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHEM 15</strong></td>
<td></td>
<td>4</td>
<td><strong>CHEM 16</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>PHYS 1</strong></td>
<td></td>
<td>4</td>
<td><strong>PHYS 2</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>HN&amp;F 71</strong></td>
<td></td>
<td>3</td>
<td><strong>SS 226</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ATTR 121</strong></td>
<td></td>
<td>3</td>
<td><strong>ATTR 219</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ENGL 2</strong></td>
<td></td>
<td>3</td>
<td>Cluster A or B</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>17</td>
<td><strong>Total</strong></td>
<td>17</td>
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</tbody>
</table>

#### Junior

<table>
<thead>
<tr>
<th></th>
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<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHEM 133 &amp; 135</strong></td>
<td></td>
<td>4</td>
<td><strong>CHEM 134 &amp; 136</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>EXPH 164</strong></td>
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<td><strong>EXPH 165</strong></td>
<td>3</td>
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<tr>
<td><strong>Writing Course</strong></td>
<td></td>
<td>3</td>
<td><strong>PSIO 141</strong></td>
<td>4</td>
</tr>
<tr>
<td>Cluster A or B</td>
<td></td>
<td>6</td>
<td><strong>EXPH 168</strong></td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td>16</td>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

#### Senior

<table>
<thead>
<tr>
<th></th>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXPH 194 (Internship)</strong></td>
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<td>3</td>
<td><strong>EXPH 196 (Senior thesis)</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>BUS 120</strong></td>
<td></td>
<td>3</td>
<td><strong>EXPH 194 (Internship)</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>STAT 101</strong></td>
<td></td>
<td>3</td>
<td><strong>BUS 130</strong></td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>3</td>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>12</td>
<td><strong>Total</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

(Suggested electives: BIOL 19 *The Living Cell* (4 hrs.) and 139 *Biochemistry* (3 hrs.))

*MATH 14, 15, or 128 can be substituted for MATH 3 and 4.

**BIOL 15 and 17 can be substituted for BIOL 1-4.

### Division of Occupational Therapy

Randy P. McCombie, Ph.D., OTR/L, Interim Chair.

#### Degree Offered:

**Master of Occupational Therapy**

#### Introduction

In fall, 1993, the WV 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 at WVU 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 63 to 65 hours of prerequisite courses, which in most instances will take two years to fulfill.

#### The Profession of Occupational Therapy

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 developing the capacity to function in all activities (occupations) of daily life, including self care, work, and leisure, hence, the name *occupational therapy*. 

*School of Medicine 249*
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.

According to the U.S. Bureau of Labor Statistics, there will be a 55 percent increase in the number of available positions by the year 2005. Occupational therapists work in schools, hospitals, rehabilitation centers, home health agencies, skilled nursing homes, and private practice. Average starting salaries for new occupational therapists range between $36,000 and $39,000.

Accreditation Status

WVU’s Division of Occupational Therapy has been granted Developing Program 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 (304) 652-AOTA. Once accreditation of the program has been obtained, graduates of the program will be able to sit for the national certification examination for the occupational therapist administered by the American Occupational Therapy Certification Board (AOTCB). 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 AOTCB Certification Examination.

Admissions Process

This includes obtaining an application packet from the Admissions and Records Office (304) 293-3521, available December 1st and completing that packet by February 15th. A personal interview may be required.

College Prerequisite Courses Include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 1</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 141</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 281</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 1 or SOCA 5</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 1 and BIOL 3</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 2 and BIOL 4</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 15</td>
<td>4</td>
</tr>
<tr>
<td>Both MATH 3 and 4; or</td>
<td></td>
</tr>
<tr>
<td>Only MATH 14 - MATH 3</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 2</td>
<td>4</td>
</tr>
<tr>
<td>STAT 101</td>
<td>3</td>
</tr>
<tr>
<td>COMM 11</td>
<td>1</td>
</tr>
<tr>
<td>COMM 12</td>
<td>2</td>
</tr>
<tr>
<td>Appalachian, Rural, or West Virginia studies course in any discipline</td>
<td>3</td>
</tr>
<tr>
<td>Fulfillment of WVU’s foreign or minority cultures requirement</td>
<td>3</td>
</tr>
<tr>
<td>Completion of WVU’s LSP requirements - Cluster A courses</td>
<td>12</td>
</tr>
</tbody>
</table>

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 63 to 65 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, (a higher GPA may be necessary given the competitive nature of the program).
- 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 licensed occupational therapist (OTR/L) and/or a certified occupational therapy assistant (COTA).
- Two letters of recommendations are also required, one from an occupational therapist or COTA 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.
- Strong consideration will be given to residency and a commitment to stay in West Virginia to practice after graduation.

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.

Occupational Therapy Curriculum Plan

**Junior year**

**Summer session II**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTH 100</td>
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</tr>
<tr>
<td>OTH 280</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
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<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
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<td>EXPH 165</td>
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<td>OTH 101</td>
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<td>OTH 107</td>
<td>4</td>
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<td>OTH 103</td>
<td>2</td>
<td>OTH 221</td>
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<td>OTH 104</td>
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<td>OTH 297</td>
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</tr>
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<td>OTH 106</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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**Senior year**

<table>
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<td>OTH 186</td>
<td>2</td>
</tr>
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<td>OTH 202</td>
<td>2</td>
<td>OTH 216</td>
<td>2</td>
</tr>
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<td>OTH 201</td>
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<td>OTH 208</td>
<td>3</td>
<td>OTH 232</td>
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<tr>
<td>OTH 280</td>
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<td>OTH 280</td>
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### Graduate year

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<table>
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<th>Hrs.</th>
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<td>OTH 350</td>
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<td>OTH 303</td>
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<td>OTH 351</td>
<td>3</td>
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<tr>
<td>OTH 305</td>
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<td>1</td>
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<tr>
<td>OTH 320</td>
<td>3</td>
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<td>4</td>
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<td><strong>Total</strong></td>
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---

### WVU Entry Level Master's Program in Occupational Therapy

#### Summer Session II

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>OTH 100</td>
<td>Essentials of Clinical Anatomy</td>
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<td>OTH 280</td>
<td>Current Topics in Occupational Therapy</td>
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#### Fall Term—First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PSIO 241</td>
<td>Mechanisms of Body Function</td>
</tr>
<tr>
<td>OTH 101</td>
<td>Professional Foundations</td>
</tr>
<tr>
<td>OTH 102</td>
<td>Survey of Clinical Problem Solving</td>
</tr>
<tr>
<td>OTH 103</td>
<td>Functional Movement Across the Lifespan</td>
</tr>
<tr>
<td>OTH 104</td>
<td>Clinical Sciences</td>
</tr>
<tr>
<td>OTH 106</td>
<td>Kinesiologic Foundations for Intervention</td>
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</table>

#### Spring Term—First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPH 165</td>
<td>Human Nutrition and Exercise Physiology</td>
</tr>
<tr>
<td>OTH 107</td>
<td>Neurobiologic Foundations</td>
</tr>
<tr>
<td>OTH 108</td>
<td>Evaluation Procedures</td>
</tr>
<tr>
<td>OTH 221</td>
<td>Developmental Life Tasks</td>
</tr>
<tr>
<td>OTH 297</td>
<td>Research Methods in OT</td>
</tr>
<tr>
<td>OTH 280</td>
<td>Current Topics in Occupational Therapy</td>
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#### Fall Term—Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>OTH 185</td>
<td>Fieldwork I (1)</td>
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<tr>
<td>OTH 202</td>
<td>Clinical Decision Making</td>
</tr>
<tr>
<td>OTH 201</td>
<td>Clinical Sciences</td>
</tr>
<tr>
<td>OTH 206</td>
<td>Cardio-pulmonary Evaluation and Intervention</td>
</tr>
<tr>
<td>OTH 208</td>
<td>Tests and Measures in OT</td>
</tr>
<tr>
<td>OTH 230</td>
<td>OT in Mental Health</td>
</tr>
<tr>
<td>OTH 280</td>
<td>Current Topics in Occupational Therapy</td>
</tr>
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</table>

#### Spring Term—Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>OTH 186</td>
<td>Fieldwork I (2)</td>
</tr>
<tr>
<td>OTH 216</td>
<td>Professional Decision Making</td>
</tr>
<tr>
<td>OTH 217</td>
<td>Occupational Therapy in Geriatrics</td>
</tr>
<tr>
<td>OTH 219</td>
<td>Professional Values</td>
</tr>
<tr>
<td>OTH 232</td>
<td>OT Interventions—Mental Health</td>
</tr>
<tr>
<td>OTH 235</td>
<td>Therapeutic Activity</td>
</tr>
<tr>
<td>OTH 280</td>
<td>Current Topics in Occupational Therapy</td>
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</tbody>
</table>

#### Summer—Beginning Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>OTH 240</td>
<td>Level II Fieldwork</td>
</tr>
</tbody>
</table>
Fall Term—Third Year
OTH 300  Health Care Issues in OT
OTH 301  Management for OT Practice
OTH 303  OT in Pediatrics
OTH 305  Prosthetics and Orthotics
OTH 320  OT in the Work Environment
OTH 280  Current Topics in Occupational Therapy

Spring Term—Third Year
OTH 350  Education in OT Practice
OTH 351  OT in Prevention and Wellness
OTH 280  Current Topics in Occupational Therapy
OTH 397  Supervised Research in OT
OTH 340  Fieldwork II

Physical Therapy
MaryBeth Mandich, PT, Ph.D. Chairperson.

Degree Offered:
M.P.T. Master’s in Physical Therapy (Entry-level)

Note: The Division of Physical Therapy was given approval in May, 1996, by the West Virginia Board of Trustees to transition its previous bachelor’s degree program to an entry-level master’s degree program (MPT). The program was awarded interim accreditation of the entry-level master’s degree in May 1997 and the first master’s class was enrolled in the new curriculum in fall of 1997. The baccalaureate degree will no longer be offered as of December, 1998. The information contained in this catalog pertains to the new curriculum; however, the professional course sequence and pre-requisite courses are reviewed annually. For current information on the MPT degree program, please contact the academic advisor for the Division of Physical Therapy at (304) 293-3611 or visit our web site at http://www.hsc.wvu.edu/som/pther.

Nature of Program
The WVU physical therapy program was established in 1970 under the auspices of the School of Medicine to help meet the need for physical therapists in West Virginia. The program is accredited by the Commission on Accreditation in Physical Therapy Education, a specialized accrediting body recognized by the Council on Postsecondary Accreditation. One class of 30 full-time students is accepted each year for the final three years of an entry-level master’s degree program.

Students admitted into the program complete ten semesters (four are summer sessions) of combined classroom, laboratory and clinical education, and part-time and full-time supervised clinical practice in various clinics in West Virginia and other states. An entry-level master’s (MPT) degree is awarded to those completing the program, and entitles the graduate to apply for examination for state licensure. A license to practice physical therapy is required by all states.

Admission Requirements
Recommended high school preparation for physical therapy includes courses in biology, chemistry, algebra, trigonometry, physics, and social sciences. Computer literacy is recommended.

Because individualized instruction in laboratories and clinics is an essential component of the program, enrollment must be limited. All students who wish to enter the program must apply for admission and must have completed or be enrolled in the courses listed under “courses required for application”. These courses are available at most colleges and usually require two years to complete. Students with degrees in other fields are welcome to apply but must also complete these courses.
Courses Required for Application

Pre-Physical Therapy Courses

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hrs.</th>
<th>WVU Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology (with lab)</td>
<td>8</td>
<td>BIOL 1, 2 and 3, 4</td>
</tr>
<tr>
<td>Chemistry (with lab)</td>
<td>8</td>
<td>CHEM 15 and 16</td>
</tr>
<tr>
<td>Physics (with lab)</td>
<td>8</td>
<td>PHYS 1 and 2</td>
</tr>
<tr>
<td>Introductory Psychology</td>
<td>3</td>
<td>PSYC 1</td>
</tr>
<tr>
<td>Developmental Psychology (Life-span)</td>
<td>3</td>
<td>PSYC 141</td>
</tr>
<tr>
<td>Introductory Statistics</td>
<td>3</td>
<td>STAT 101</td>
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</table>

WVU Liberal Studies Requirements

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hrs.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>EnglishComposition</td>
<td>6</td>
<td>ENGL 1 and 2</td>
</tr>
<tr>
<td>Cluster A courses*</td>
<td>12</td>
<td>(Humanities and Fine Arts; courses in three disciplines, including two courses in one discipline)</td>
</tr>
<tr>
<td>Cluster B courses*</td>
<td>6</td>
<td>(Social and Behavioral Sciences; two courses in two different disciplines, neither of which is psychology)</td>
</tr>
</tbody>
</table>

*See Liberal Studies section of the catalog for specific courses acceptable in each Cluster. Three hours in either Cluster A or Cluster B courses must focus substantially on the study of a foreign or minority culture or on women and/or issues of gender.

The courses listed are minimum requirements for application. Other suggested electives are: speech communication, any course dealing with Appalachian or rural studies, and an introductory computer science course. Students are encouraged to pursue studies in additional courses of interest. Students who wish to substitute a course for one of those listed should contact the Division of Physical Therapy for permission and provide a written description of the proposed substitute.

Applicants must have both a minimum cumulative and a minimum pre-physical therapy science GPA of 3.0. All applicants must have taken the Allied Health Professions Admission Test prior to the application deadline, and submit two recommendations from physical therapists (not relatives) with whom they have worked in clinical settings. A minimum of 60 hours of clinical volunteer or work experience is recommended. It is suggested this experience be in at least two different settings.

Preference is given to West Virginia residents. A limited number of non-residents who have attended a West Virginia college or university, or who have other strong ties to the state, may also be considered.

Applicants who complete any of their pre-requisite courses at a college or university outside of West Virginia must submit a catalog or photocopy of the catalog description for all pre-requisite courses taken.

Graduation Requirements

Students admitted into the program must complete all required courses of each term with a grade of at least C or P in each, and must maintain a minimum GPA of 2.5 each term. In order to progress to the third (graduate) professional year, a cumulative GPA of 3.0 is required. Any student who does not meet these requirements may be placed on probation, suspended, or dismissed from the program. The Division of Physical Therapy reserves the right to suspend or dismiss any student who does not perform at an overall level considered satisfactory for patient care.

Beginning with the second semester of the junior year, the student will begin clinical education experiences which are designed at preparing the student to practice physical therapy. The clinical education program consists of part-time (one
day per week; one week per semester) experiences until the end of the second year of the program. During the summer between the second and third years of the program, a full-time twelve week clinical education rotation is done which satisfies the West Virginia Board of Trustees requirement for practice in a rural setting. In the spring of the third year (February-May), students have a second full-time clinical education experience consisting of twelve weeks total (maybe six in two different settings). This clinical education experience allows the student to explore practice in a variety of health care settings. Students must be prepared to pay for travel, meals, and lodging while participating in clinical rotations.

**Required Physical Therapy 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>PHYS 241</td>
<td>4</td>
<td>EX PHYS 165</td>
<td>3</td>
</tr>
<tr>
<td>PT 100</td>
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<td>PT 106</td>
<td>4</td>
</tr>
<tr>
<td>PT 101</td>
<td>3</td>
<td>PT 107</td>
<td>4</td>
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<td>PT 102</td>
<td>2</td>
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<td>3</td>
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<tr>
<td>PT 103</td>
<td>2</td>
<td>PT 109</td>
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<tr>
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<td><strong>Total</strong></td>
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**Summer years 1-2**  
| PT 199        | 4 |

**Second year**

<table>
<thead>
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<tbody>
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<td>2</td>
<td>PT 216</td>
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<td>PT 201</td>
<td>4</td>
<td>PT 217</td>
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<td>PT 250</td>
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<td><strong>Total</strong></td>
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</table>

**Summer years 2-3**  
| PT 384        | 6 |

**Third year**

<table>
<thead>
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<td>3</td>
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<td>PT 303</td>
<td>2</td>
<td>PT 391</td>
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<td>PT 305</td>
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<td>PT 385</td>
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<td>PT 306</td>
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<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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</table>

**Summer I, year 3**  
| PT 380        | 2 |
| PT 381        | 1 |
| PT 382        | 0-3 (var) |
| **Total**     | **3-6** |

School of Medicine 255
School of Nursing

School of Nursing Administration
E. Jane Martin, Ph.D., R.N., F.A.A.N., Dean.
Karen E. Miles, Ed.D., R.N., Associate Dean for Academic Affairs.
Michelle Janney, Ph.D., R.N., Associate Dean for HSC Clinical Services.
Jacqueline W. Riley, M.N., R.N., Assistant Dean for Student and Alumni Affairs.
Mona M. Counts, Ph.D., R.N., Chairperson, Department of Health Promotion/Risk Reduction.
C. Lynne Ostrow, Ed.D., R.N., Chairperson, Department of Health Restoration.
Patricia S. Simoni, Ed.D., R.N., Chairperson, Department of Health Systems.
Cynthia Armstrong Persily, Ph.D., R.N., Chairperson, Charleston Division.
Sandra Cotton, M.S.N., R.N., Director, Faculty Practice Plan.
Alita Sellers, Ed.D., R.N., Chairperson, Department of Nursing, WVU-P.
Frances Snodgrass, M.S.N., J.D., R.N., Chairperson, Department of Nursing, WVUIT.

Degrees Offered:
Bachelor of Science in Nursing, Master of Science in Nursing

The mission of West Virginia University School of Nursing is to serve as a center for nursing education, research, and practice. The goals of the School, which flow from the missions of the school, the Health Sciences Center, and the University, guide the development of the undergraduate and graduate programs in nursing.

The basic B.S.N. program can be completed in four years in Morgantown or Montgomery. Consortium programs with Glenville State College and Potomac State College allow students to complete the first two years at Glenville or Potomac State and the last two years in Morgantown or at WVU Institute of Technology in Montgomery, WV.

Class course requirements are flexible to accommodate registered nurses who are full-time workers and part-time students. Both the baccalaureate completion program for registered nurses and graduate programs are offered in multiple sites through the West Virginia Satellite Network (SATNET) and other advanced telecommunications systems.

Further information about all programs may be obtained by writing Assistant Dean for Student and Alumni Affairs, WVU School of Nursing, 6702 Health Sciences South, P.O. Box 9600, Morgantown, WV 26506-9600.

The Philosophy of School of Nursing

Nursing is an art and a science practiced by professionals in concert with individuals, families, and communities for the purpose of promoting health. Nursing is a learned discipline whose perspective is the person-environment health process. The person is inseparable from the environment and interacts dynamically with the environment as a unified whole, thus maintaining integrity. This interaction enables the pursuit of choices and goals. Health is a process through which individuals, families, and communities maximize potential for living a self-determined life.

Health is promoted through the caring presence of the nurse in situations where capabilities are discovered, strengths are maximized, and development is nurtured. The caring presence is a relationship in which the nurse interacts with persons in the creative application of the discipline’s art and science. Nurses collaborate with others to maximize resources for the benefit of the person.

The discipline of nursing is taught in an academic setting in which students must be educated to practice in a rapidly changing society. The knowledge base for nursing builds on content from the humanities and the sciences. Learning is a lifelong process which is enhanced in a climate of personal acceptance of the learner as an integrated being. Faculty and students share the responsibility for creating an atmosphere that fosters the development of intellectual curiosity, systematic inquiry, critical thinking, self direction, caring relationships, and a commitment to continued learning.
Nursing is accountable to society for ensuring that the public interest is protected and served. To promote the relevance of the discipline to societal needs, faculty contribute to the development and evaluation of the discipline by engaging in creative endeavors that reflect a synthesis of teaching, practice, and research.

Undergraduate education in nursing prepares individuals capable of beginning professional nursing practice and provides a foundation for graduate education in nursing. Graduate education in nursing at the masters level prepares persons to engage in advanced nursing practice and provides a foundation for doctoral study in nursing.

Accreditation
The baccalaureate program received initial accreditation with graduation of the first class in 1964. The master’s program was initially accredited in 1981. Both programs have continued to maintain accreditation with the appropriate regional and national accrediting agencies.

Undergraduate Program
The baccalaureate program (B.S.N.) accommodates both high school or college students who aspire to a career in nursing and registered nurses (R.N.) who are licensed graduates of associate degree and diploma nursing programs and want to continue their career development.

Students may complete the pre-nursing requirements at any accredited college or university. The first year of nursing courses (the sophomore year) may be completed in Morgantown or Montgomery or at Glenvale State College or Potomac State College. Students who begin their nursing courses at Glenvale or Potomac State College complete their junior and senior years on the Morgantown or WVUIT campus. As a part of the University System’s commitment to the West Virginia Rural Health Education Partnerships (WVRHEP) program and health care for all West Virginians, all health sciences students in state supported schools are required to complete a rural rotation of at least three months as a part of degree requirements. Nursing students will complete this rotation at a designated WVRHEP site during their senior year.

Registered nurses can complete requirements for a baccalaureate degree in nursing on the Morgantown, Montgomery, and Parkersburg campuses and through extension at selected other sites. At the extension sites, all required non-nursing courses are earned in institutions of higher learning in the respective locations. Credit may be earned by enrollment, College Entrance Examination Board Advanced Placement Program, and advanced standing examination available in the particular institution. Nursing courses are offered at a rate of four to 11 credit hours per semester and are scheduled to provide opportunity for completion of degree requirements in two to three years.

Undergraduate education in nursing prepares graduates to begin professional nursing practice and provides a foundation for graduate education in nursing. Upon completion of the baccalaureate curriculum, the nurse can practice in a variety of settings and with clients across the life span. The graduate uses process skills to maintain, restore, or improve health states of clients, and applies leadership theory to effect change. The baccalaureate graduate uses a conceptual base to evaluate and modify the nursing role in relation to client needs and expectations and is prepared to support efforts in expanding nursing knowledge.

Fees, Expenses, Housing, Transportation
Student enrolling at the Morgantown campus pay the fees shown in the WVU Health Sciences Center Catalog charts, plus special fees and deposits as 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 widely according to the course of study and individual tastes. Students are expected to provide their own transportation, equipment, and instruments for the clinical courses. Specific immunizations, including hepatitis B, are required.

School of Nursing
Information concerning financial assistance and application forms may be obtained by visiting or writing 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, G-18 Towers (phone (304) 293-3621), provides information concerning University-owned housing. The Student Life Office in Moore Hall (phone (304) 293-5611) provides information concerning privately owned, off-campus housing.

Some clinical experiences require the student to travel in a multi-county area. Students are responsible for providing their own transportation to all clinical experiences.

Admission to Basic Program

Admission to the basic program is highly competitive. Meeting the minimum requirements to apply does NOT guarantee admission. Ninety percent of the space in each entering class, regardless of site, is given to West Virginia residents. The opportunity for direct admission as freshmen is available to selected students with a high school grade-point average of 3.6 or higher and an ACT composite score of 26 or better or equivalent SAT score.

Applicants are eligible for review by the Admissions, Progression, and Graduation Committee after completion of one full semester of college course work. The academic record is the major factor in the decision on admission. To qualify for consideration, a West Virginia resident must have a grade-point average of 2.7 or above, on a scale of 0.0 to 4.0 on all college work attempted, and an ACT composite score of 20 or greater or an equivalent SAT score.

Application to the basic program for all sites must be made by February 15 of the year the candidate wishes to be admitted. Application forms are distributed after December 1 by the Health Sciences Center Office of Admissions and Records. Completed applications and the required application fee, payable to West Virginia University, may be presented in person or mailed directly to: ATTN: Nursing Secretary, WVU Office of Admissions and Records, 1170 Health Sciences Center North, P.O. BOX 9815, Morgantown, WV 26506-9815. February 15 is the deadline for receipt of all application materials, including transcripts.

Admission as a Transfer Student

An applicant with nursing credit from an accredited college or university is eligible for consideration for admission by presenting a record of courses comparable to those required in this curriculum and meeting other School of Nursing admission requirements. The applicant must provide a statement of good standing from the program in which currently enrolled. Acceptance and placement in the program is dependent on the individual’s academic record and the number of spaces available in the program. Application should be initiated three months prior to the beginning of the semester in which the applicant wishes to begin nursing courses. Transcripts and other required materials must be received no later than two months before the start of the entering semester. Candidates apply to ATTN: Nursing Secretary, HSC Office of Admissions and Records, 1170 WVU Health Sciences Center North, P.O. BOX 9815, Morgantown, WV 26506-9815, requesting consideration for advanced placement as a transfer student.

Admission for Registered Nurses

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 the number of spaces available in the program. 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. Candidates with a restricted license will be considered on an individual basis. Applicants whose grade-point average falls below 2.5 may petition to the dean for special consideration. Registered nurses who wish to take only selected satellite courses may apply for non-degree seeking status.
Application forms for the Morgantown campus may be obtained from ATTN: Nursing Secretary, Health Sciences Center Office of Admissions and Records, 1170 WVU Health Sciences Center North, PO BOX 9815, Morgantown, WV 26506-9815. Application forms for the WVUIT and WVU-P sites may be obtained from the Office of Admissions and Records or Department of Nursing at those sites.

**Academic Standards and Graduation Requirements**

To be in good academic standing, students must:

1. Maintain a cumulative grade-point average of 2.5 or better in all work attempted.
2. Pass all 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 may repeat that nursing course ONCE. A student may repeat ONLY ONE nursing course. Students must complete with a grade of C or better, any nursing course in which a grade of D, F, WU, or W has been received. Students who do not maintain a cumulative GPA of 2.5 or better will be placed on probation for one semester. Students on probation who do not raise their cumulative GPA to 2.5 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. Students who repeat a nursing course and earn a grade of D, F, WU, or W will be dismissed from the School. 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 136 hours and all required courses.

**Curriculum for the Basic Student**

**B.S.N. Suggested Plan of Progression** (Morgantown campus)

**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 11</td>
<td>4</td>
<td>CHEM 12</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 1</td>
<td>3</td>
<td>ENGL 1</td>
<td>3</td>
</tr>
<tr>
<td>SOCA</td>
<td>3</td>
<td>BIOL 2 and 4</td>
<td>4</td>
</tr>
<tr>
<td>HN &amp; F 71</td>
<td>3</td>
<td>PSYC 141</td>
<td>3</td>
</tr>
<tr>
<td>Cluster A or Math 3</td>
<td>3</td>
<td>NSG 10</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</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>NSG 21</td>
<td>3</td>
<td>NSG 41</td>
<td>2</td>
</tr>
<tr>
<td>NSG 23</td>
<td>1</td>
<td>NSG 43</td>
<td>2</td>
</tr>
<tr>
<td>NSG 25</td>
<td>3</td>
<td>NSG 45</td>
<td>4</td>
</tr>
<tr>
<td>ANAT 101</td>
<td>4</td>
<td>PHYS 141</td>
<td>4</td>
</tr>
<tr>
<td>MBIM 26</td>
<td>3</td>
<td>PHAR 160</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2</td>
<td>3</td>
<td>NSG 61</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

**Third year**

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 131</td>
<td>2</td>
<td>NSG 151</td>
<td>2</td>
</tr>
<tr>
<td>NSG 133</td>
<td>2</td>
<td>NSG 153</td>
<td>2</td>
</tr>
<tr>
<td>NSG 135</td>
<td>5</td>
<td>NSG 155</td>
<td>5</td>
</tr>
<tr>
<td>NSG 136</td>
<td>3</td>
<td>NSG 156</td>
<td>3</td>
</tr>
<tr>
<td>Cluster A/B</td>
<td>3</td>
<td>NSG 199</td>
<td>1</td>
</tr>
<tr>
<td>STAT 101</td>
<td>3</td>
<td>Cluster A/B</td>
<td>3-6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td><strong>Total</strong></td>
<td>16-19</td>
</tr>
</tbody>
</table>
### Fourth year

<table>
<thead>
<tr>
<th>First semester</th>
<th>Hrs.</th>
<th>Second semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 221</td>
<td>3</td>
<td>NSG 241</td>
<td>3</td>
</tr>
<tr>
<td>NSG 223</td>
<td>2</td>
<td>NSG 243</td>
<td>2</td>
</tr>
<tr>
<td>NSG 225</td>
<td>6</td>
<td>NSG 245</td>
<td>6</td>
</tr>
<tr>
<td>NSG 276</td>
<td>3</td>
<td>NSG 291 (NCLEX Review)</td>
<td>1</td>
</tr>
<tr>
<td>NSG 291 (NCLEX Review)</td>
<td>1</td>
<td>Cluster A</td>
<td>3</td>
</tr>
<tr>
<td>Cluster A</td>
<td>3</td>
<td><strong>Total</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

The sequence of courses may vary from campus to campus. See WVUIT or WVU-P catalog for site-specific information.

### Curriculum for the Registered Nurse Student

For the registered nurse student, the associate degree graduate will transfer in up to 50 hours of lower division undifferentiated nursing credit. Diploma school graduates may earn up to 50 hours of credit by successfully passing with a grade of C or better selected NLN achievement examinations. If a grade of C is not achieved, a specific individual remediation plan will be developed. Any remediation plan must be satisfactorily completed prior to enrollment in upper division nursing courses. A minimum of 30 hours of general education courses that meet the University Liberal Studies Program and School of Nursing requirements should be completed before enrollment in the first nursing courses. All registered nurse students must establish credit by enrollment, challenge or acceptable CLEP examinations in:

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1 and 2</td>
</tr>
<tr>
<td>Statistics</td>
</tr>
<tr>
<td>Cluster A</td>
</tr>
<tr>
<td>Cluster B</td>
</tr>
<tr>
<td>(Must include Psychology 1, Growth and Development, and a Sociology course)</td>
</tr>
<tr>
<td>Cluster C</td>
</tr>
</tbody>
</table>

(May select from chemistry, biology, nutrition, anatomy and physiology, microbiology, pharmacology, and computer science. At least one course must include a laboratory.)

Completion of additional general education courses beyond the 30 hours is recommended prior to beginning nursing courses if the R.N. student wishes to carry a part-time course load.

The purpose of the first nursing courses is to facilitate transition into professional nursing. Special emphasis is placed on socialization into role and expectations of this role. An unrestricted West Virginia R.N. license is required for enrollment in the first nursing courses.

All R.N. students are required to enroll in the following nursing courses: NSG 61 Health Assessment, NSG 140 Professional Role Transition, NSG 143 Seminar VII Professional Role Development, NSG 199W Writing in Nursing, NSG 276 Introduction to Research, and NSG 233 Seminar VIII. Seminar VIII is taken with or following NSG 221-245. RN Students may establish credit for the following senior courses by enrollment or challenge examination: NSG 221 System Responses to Physiological Dysfunction, NSG 225 Nursing Interventions 5, NSG 241 Community Response to Health Promotion, and NSG 245 Nursing Interventions 6. Certification in school health nursing is available to all students who meet additional course and experiential requirements.
RN-BSN Suggested Progression

Progression will vary depending on the amount of non-nursing courses that must be completed and whether the student wishes to be part-time or full time. Note that the required R.N.-B.S.N. seminars are currently offered ONLY in the semester indicated below. This progression plan is projected on the basis that all non-nursing requirements have been completed.

<table>
<thead>
<tr>
<th>First year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First semester</td>
<td>Hr.</td>
</tr>
<tr>
<td>NSG 140</td>
<td>3</td>
</tr>
<tr>
<td>NSG 61</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior year*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First semester</td>
<td>Hr.</td>
</tr>
<tr>
<td>NSG 221</td>
<td>3</td>
</tr>
<tr>
<td>NSG 225</td>
<td>6</td>
</tr>
<tr>
<td>NSG 276</td>
<td>3</td>
</tr>
<tr>
<td>NSG 233</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

*Note: Based on background and experience, the RN student may establish credit by examination for all senior year courses except NSG 276 and 233. A written examination is used for NSG 221 and 241. A portfolio is used to establish credit for NSG 225 and 245. Only those students who have prior experience in the content areas covered by these courses are eligible to use the credit by examination option.
School of Pharmacy
George R. Spratto, Ph.D., Dean.
Carl J. Malanga, Ph.D., Associate Dean for Academic Affairs.
Calvin C. Brister, Ph.D., Assistant Dean for Student Affairs.
Patrick S. Callery, Ph.D., Assistant Dean for Research and Graduate Programs.

**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 comprises a four-year professional study preceded by a minimum of two years of pre-pharmacy study 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 American Council on Pharmaceutical Education. The Council is composed of members from the American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education. The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy 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 course work 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 Hours</th>
<th>WVU Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>6</td>
<td>ENGL 1 and 2</td>
</tr>
<tr>
<td>Introduction to Calculus</td>
<td>3 (4)</td>
<td>MATH 15 or Math 128</td>
</tr>
<tr>
<td>Principles of Microeconomics</td>
<td>3</td>
<td>ECON 54</td>
</tr>
<tr>
<td>General Biology</td>
<td>8</td>
<td>BIOL 15 and 17</td>
</tr>
<tr>
<td>General Chemistry</td>
<td>8</td>
<td>CHEM 15 and 16</td>
</tr>
<tr>
<td>Organic Chemistry</td>
<td>8</td>
<td>CHEM 133/135 and 134/136</td>
</tr>
<tr>
<td>Physics</td>
<td>8</td>
<td>PHYS 1 and 2</td>
</tr>
<tr>
<td>Introduction to Statistics</td>
<td>3</td>
<td>STAT 101 or ECON 125</td>
</tr>
<tr>
<td>General Microbiology</td>
<td>3-4</td>
<td>MBIO 26 or ENVM 125</td>
</tr>
<tr>
<td>General Communications</td>
<td>3</td>
<td>COMM 11 and 12</td>
</tr>
<tr>
<td>Electives*</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>71-73</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Electives must satisfy the University Liberal Studies Program requirements. Cluster A—12 hr.; Cluster B—6 hr. in addition to Economics 54 and Communications 11 and 12; with a three-hour course focusing on foreign or minority culture, women, or issues of gender.
Admissions are competitive and are based on the academic grade-point average for specific School of Pharmacy requirements, the cumulative grade-point average achieved in all prior college courses, results of the Pharmacy College Admissions Test (PCAT), a personal interview, and recommendations describing academic performance. A required course in which a grade of D was received must be repeated with a grade of C or better before acceptance can be granted by the School of Pharmacy Committee on Admissions. While outstanding nonresident applicants are considered, priority in admission is given to qualified West Virginians.

Applicants should write to the Office of Admissions and Records, WVU Health Sciences Center, P.O. Box 9815 Morgantown, WV 26506-9815, for official application forms which are available after January 1 of each year and which should be returned to that office by March 1 preceding the fall term (first semester) in which the student seeks enrollment. Formal applications received after March 1 are considered only when vacancies exist. A $30.00 application fee must accompany the application. Each applicant who is recommended for acceptance must deposit $100.00 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 June 1.

Before enrollment in the School of Pharmacy, all students must initiate compliance with immunizations and diagnostic procedures required by the West Virginia Board of Trustees, WVU, the West Virginia University Health Sciences Center, and/or 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 in the fall before making 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 writing: Pharmacy College Admission Test, The Psychological Corporation, 555 Academic Court, San Antonio, TX 78204.

Interviews are held at the WVU Health Sciences Center and the Charleston Area Medical Center and will be arranged insofar as possible to suit the convenience of the applicant. Interviews are scheduled during February, March, and April. In general, only applicants who are deemed by the Committee on Admissions to be competitive for consideration for acceptance will be offered an interview.

Three academic 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 three pre-pharmacy science areas: biology, chemistry, and physics. The third recommendation may be provided by a course instructor of the student’s choice.

Admission to Advanced Standing

Students from other accredited schools of pharmacy may be admitted if space is available and they meet the course requirements of the WVU School of Pharmacy, have a 2.5 grade-point average, and are 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.
School of Physical Education

Dana D. Brooks, Ed.D., Dean.
Lynn Housner, Ph.D., Assistant Dean.
William L. Alsop, Ed.D., Coordinator, Sport Management.
Andrew C. Ostrow, Ph.D., Coordinator, Sport Behavior.
Vincent G. Stilger, H.S.D., Undergraduate Coordinator, Athletic Training.
Robert L. Wiegand, Ed.D., Coordinator, Teacher Education.

**Degree Offered: Bachelor of Science in Physical Education**

**Nature of Program**
Students in physical education and sport studies 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 and coaching certification are generally employed as elementary or secondary physical education teachers and athletic coaches. Graduates in sport studies are employed in professional and collegiate sport enterprises, fitness centers, recreation programs, sporting goods stores, or commercial sporting goods manufacturers.

**Programs**
Baccalaureate programs offered in the School of Physical Education include athletic training, athletic coaching education, physical education/teacher, sport management, and sport behavior (psychology/sociology). Certification is available in athletic coaching and health education.

**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 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 Reading Room, classrooms and seminar rooms, a large gymnasium, a dance studio, racquetball and squash courts, and faculty offices. Additional faculty and staff offices are in E. Moore Hall, Stansbury Hall, the Natatorium, and the Shell Building.

**Admission Requirements**
The School of Physical Education uses the admission requirements of WVU. In addition, you must have a high school average of 2.0. High school graduates are required to present credit for four units of English, one unit of biology, three units of social studies, two units of college preparatory mathematics, one of which must be algebra, and eight units of electives.

**Credit Load Per Semester**
The minimum work-load per semester is 12 hours and the maximum work-load 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**
- University LSP: All students must complete University LSP required courses.
- Teacher Certification Curriculum: Students in teacher certification programs must complete a group of educationally-related courses and other prescribed work.
• Major requirements: Students must complete the requirements as determined by the appropriate department.
• Total hours: Students must complete a minimum of 128 hours.
• Grade-point average: 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 for teacher certification are:

1. **Foundations**— PET 25, 30, 35, 75, 106, 176
2. **Professional**— PET 67, 126, 128, 133, 134, 177, 181, 183, 185, 187, 188, 189
3. **Activities**— PET 36, 37, 38, 39, 40, 41, 42, 44, 48, 51, 52, 53, 54, 55, 56, 58, 60, 124
4. **Second Teaching Field and Professional Education**—See requirements listed in the College of Human Resources and Education.
5. **Health Certification Community Health Promotion** CHPR 50, 70, 71, 72, 101, 102, 104, 220.
   - Nutrition: HN & F 71
   - Physiology: EXPH 165 or BIOL 166
   - Psychology: PSYC 141

   In addition, the student will complete professional education requirements as listed by the College of Human Resources and Education.

Recommendation for Teacher Certification

The prospective teacher who intends 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 K-12. Second teaching fields may be chosen from the various teaching specialization programs for elementary and secondary school teachers listed in the College of Human Resources and Education, program area in Curriculum and Instruction.

Certification in Athletic Coaching

The required courses for a WVU athletic coaching certificate are ATTR 121, ACE 156, ACE 157-167 (choose one or more), SS 71 or 72, and EXPH 164 and 165. This certification program is not part of the subject-matter specializations approved by the West Virginia Board of Education.

Athletic Coaching Education Emphasis

Required courses:
- Theory and Foundation—ATTR 121, EXPH 164 or PET 25, EXPH 165 or PET 30, CHPR 72, ACE 106, PET 75, ACE 156, ACE 157-167 (choose three), ACE 100, ACE 194, 195, SS 71, 72, 226 or 227 and six hours of selected sport skills.

Sport Studies

The sport studies program offers opportunities for students to pursue program majors in sport behavior and sport management. The programs in sport studies are not teacher certification programs.

The required courses for the sport studies programs are:
- Completion of University LSP.
- Second field—select a second field from one of the following areas. Course requirements for each area are listed.

*School of Physical Education  265
a. Sport behavior (psychology and sociology and anthropology)—PET 75, PSYC 1, 102, 141, 151, three hours electives—200 level courses. SOCA 1, 7, 135, 160, three hours electives—200-level courses.

b. Sport management—ACCT 51, ECON 54, COMM 109, C S 5, JRL 1, PR 111, BUSA 120, 130, and six hours of advisor approved electives.

Note: All students enrolled in sport management and sport behavior programs must earn a grade of C or better in theory and foundation and in second field courses.

*EXPH 164 is only required as a theory class for sport behavior majors.

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 1-191 are at a beginner's level unless otherwise specified. Repeating an activity is not allowed except at a more advanced level.

Athletic Training

The required courses for athletic training are:

• Exercise Physiology: EXPH 164,165.
• Community Health: CHPR 70, 72.
• Biology: BIOL 1-4,166
• Sport Studies: SS 67, 72.
• Chemistry: CHEM 15.
• Psychology: PSYC 1.
• Human Nutrition and Foods: HN & F 71.
• Physics: PHYS 1.
• Pharmacy: PHAR 249.
• Pathology: PATH 128.
• Statistics: STAT 101.

The athletic training major at WVU is sponsored by the School of Physical Education. The program is designed to prepare students to undertake the health care of the physically active. Students may combine athletic training with another major; however, an additional one to two years may be required to complete both areas of study.

Upon graduation from the athletic training major, students are eligible to take the National Athletic Trainers’ Association (NATA) Board of Certification examination. The successful completion of the certification exam provides job opportunities at high school, college, professional, clinical, or corporate levels.

Application Process: In the spring semester of their freshman year, students are eligible to apply for acceptance into the athletic training curriculum. Application deadline is April 1. Students must have completed, or be enrolled in, at the time of application ATTR 121, ATTR 122, BIOL 1 and 3, BIOL 2 and 4, and ENGL 1 and participate in the Prospective Student Athletic Trainer (PST) program to be eligible to apply to the program. Students must have a cumulative GPA of 2.75, have received a “C” grade or better in each of the pre-requisite classes, and have received a “B” grade or better in ATTR 121 and ATTR 122. Students in the PST program will attend a weekly in-service throughout the year, plus a minimum of 75 observation hours in the WVU athletic training rooms.
Part 6 Special Programs
Robert C. Byrd Health Sciences Center
Center on Aging Education Unit
David Brown, Ph.D., Associate Director of Education Unit.

Because the rapid growth of the elderly population is affecting all aspects of U.S. society, education in gerontology—the study of human aging—promises to enhance the professional qualifications and employability of students preparing for a variety of careers, including business management, health sciences, counseling/psychology, human services, therapeutic recreation, and urban and regional planning. Study of gerontology also prepares students to deal effectively with the aging process in their families, friends, and ultimately themselves. The Education Unit of the Center on Aging offers an 18-credit undergraduate certificate program for students who wish to obtain a foundation of knowledge in aging while pursuing a degree in another field.

Requirements for the certificate include MDS 50 *Introduction to Gerontology* (3 credits), MDS 250 *Issues in Gerontology* (3 credits), and a total of 12 credits in Gerontology field experience and electives selected from an approved pool of aging-related courses offered in a number of disciplines.

The Center on Aging is committed to increasing understanding of the aging process and supporting improvements in the quality of life for elderly persons, particularly the rural elderly of Appalachia. The Center promotes and coordinates interdisciplinary teaching, research, and service in aging at WVU. Many units of the University are involved in the teaching and research activities of the center. A library collection in the center augments the gerontology holdings of other campus libraries, and is open to the entire community Monday through Friday, 8:30 a.m. to 4:45 p.m.

The Education Unit also offers a graduate gerontology certificate, as well as a continuing education practitioner certificate for persons who are currently working with the elderly. Further information, assistance in academic program planning in multidisciplinary gerontology, and registration forms may be obtained from the unit. WVU Center on Aging Education Unit, Chestnut Ridge Professional Building, P.O. Box 9127, Morgantown, WV 26506-9127. Telephone: (304) 293-2081.

**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
- Marketing

The B.A. with a major in foreign languages is available in the following majors:
- French
- German
- Russian
- 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 high school mathematics, including two years of algebra or the equivalent; students must qualify for MATH 3 or 28 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.
    - Six hours of advanced foreign language (103/104 or 109/110).
    - 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

<table>
<thead>
<tr>
<th>Non-Business and Economics Courses</th>
<th>Hrs.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1 and 2 Composition and Rhetoric</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ENGL 105 Business English</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 28 Finite mathematics or MATH 14 Pre calculus** ..3-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberal Studies Program (LSP) Cluster A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign language 3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Foreign language 4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Other electives (2 disciplines, non-foreign language) ......</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>LSP Cluster B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 1 Introduction to Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOCA 1 Introduction to Sociology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECON 54 and 55 Principles (B/FL students only)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>LSP Cluster C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 128 or MATH 15 Introduction to calculus** ....3-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON 125 Statistics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Course</td>
<td>Hours</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>CS 5 <em>Introduction to computer applications</em></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Lab science course</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>50-52</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Required College of Business and Economic core courses**

(Identical for all majors, see page 154 in this catalog)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>College core less ECON 54, 55, and 125 above</td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

**Required Business and Economics major courses and**

unrestricted electives (varies by majors) ........................................... **30**

**Required Arts and Sciences Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine arts requirement (see arts &amp; sciences section)</td>
<td>3</td>
</tr>
<tr>
<td>International studies requirement (see arts &amp; sciences sect.)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

**Foreign Language Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linguistics 111 <em>Introduction to Structural Linguistics</em></td>
<td>3</td>
</tr>
<tr>
<td>Foreign language 103 Advanced</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language 104 Advanced</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language 109 Advanced</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language 110 Advanced</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language 111 or above Literature course</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language approved business/culture courses</td>
<td>9</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

**Internship (or substitute 16-18 hours of approved coursework)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT, FIN, MANG, MKTG <em>Internship</em></td>
<td>3</td>
</tr>
<tr>
<td>ACCT, FIN, MANG, MKTG 299 <em>Independent Study</em></td>
<td>3</td>
</tr>
<tr>
<td>A specific foreign language 191 or 194</td>
<td>6</td>
</tr>
<tr>
<td>A specific foreign language 292 Proseminar</td>
<td>6</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>16-18</strong></td>
</tr>
</tbody>
</table>

**Minimum total hours for degrees** ................................................ **158**

*Note: The specific upper division business courses are determined when the student is admitted to the College of Business and Economics at the beginning of his/her junior year.*

**Note: Although the College of Business and Economics requires MATH 28 and 128, Students are encouraged to substitute MATH 15 and 16 or MATH 14 and 15 for MATH 28 and 128 in preparation for graduate admission examinations and higher level business and economics courses.*

**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 16-18 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. Also, special business/foreign language internships will be available only to students accepted into the program.

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 10 and 11 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 1418.
• 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 Susan Gustin, Assistant Dean, College of Business and Economics, West Virginia University, Morgantown, WV 26506; (304) 293-4959 or Dr. Nicholas Evans, Associate Dean, Eberly College of Arts and Sciences, 121 Student Services Center, West Virginia University, Morgantown, WV 26506; (304) 293-7476.

Multidisciplinary Studies Courses

Multidisciplinary Studies (MDS) 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 MDS 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. MDS courses may be credited to University LSP, as indicated. Only one multidisciplinary studies course may be counted toward fulfilling Liberal Studies Program requirements in each cluster area.
Multidisciplinary Studies Degree Program
Major in Multidisciplinary Studies.
Nicholas G. Evans, Coordinator.

Degree: Bachelor of Arts

The Multidisciplinary Studies B.A. Degree Program comprises three related concentrations rather than one major. The program's flexibility and concern with contemporary issues, along with the provision for breadth with depth in appropriately chosen areas of study constitute its most salient features. This program does not limit students to courses of study in a particular college or school, but emphasizes multidisciplinary/cross-disciplinary studies with some special focuses. Each student majors in a “theme area” comprising three “concentrations.”

For example, one established “theme area” is called “Health, Wellness, and Society” and consists of groups of courses in sport studies, environmental biology, and Economics. Additional information about other theme areas and concentrations is available at the Undergraduate Academic Services Center (104 Student Services Center).

Curriculum
The MDS Baccalaureate Degree program requirements include the following:
- Completion of Liberal Studies Program (“Cluster”) requirements (45 hrs.).
- Completion of three concentrations in which none of the courses have been used to satisfy general education requirements (i.e., the Liberal Studies Program); the concentrations selected must constitute a pre-approved “theme area” or be approved by the MDS Oversight Committee.
- Completion of at least 60 hours of upper-division coursework.
- Completion of a capstone (or project) course.
- Achievement of a cumulative grade-point average of at least 2.00.
- Completion of at least 128 semester hours.

Admission
Admission to the program is possible after completion of at least 30 semester hours and a cumulative grade-point average of at least 2.00. Admission must occur before a student begins the last 45 hours prior to graduation from the program. All students in professional programs must (such as teacher education or occupational therapy) seek admission through the appropriate professional program. Admission and completion of the degree program are the result of an academic program plan articulated by the student with assistance from the academic advisor. The plan must be approved prior to identification and definition of the student’s theme area and concentrations. Admission standards are established by individual theme areas. In those cases where a student wishes to define a “theme area” (or group of concentrations), the student must submit a statement of how the proposed theme area coincides with the student’s plans for the future.

Oak Ridge Associated Universities
West Virginia University is a member of Oak Ridge Associated Universities (ORAU), a nonprofit, education and research management corporation of 49 colleges and universities. ORAU, established in 1946, conducts programs of research, education, information, and human resource development for a variety of government and private organizations. It is particularly interested in three areas: energy, health, and the environment.

Among ORAU’s activities are competitive programs to bring undergraduate and graduate students and faculty members to work on research problems at the research facilities of the Department of Energy (DOE) and other federal agencies. Participants
are selected by ORAU and the staffs of the facilities participating in the ORAU programs, which are Oak Ridge National Laboratory; the Oak Ridge Y-12 Plant; the Oak Ridge Gaseous Diffusion Plant; the Atmospheric Turbulence and Diffusion Division in Oak Ridge; the Savannah River Laboratory in Aiken, S.C.; the Pittsburgh Research Center of the U.S. Bureau of Mines; the National Center for Toxicological Research in Jefferson, AR; the Puerto Rico Nuclear Research Center; and the U.S. DOE Energy Technology Research Centers in Pittsburgh, Pa., and Morgantown. The ORAU Institute for Energy Analysis, the Professional Training Program, the Medical and Health Sciences Division, and its other programs are also open to qualified students and faculty members.

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 the student to research areas for consideration as possible thesis or dissertation topics.

Post-Graduate Research Program

Research appointments are available for recent masters 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 about the ORAU program, contact Dr. Richard Bajura, ORAU Council member, or Ms. Margaret Andreas, Program Assistant, WVU NRCCE, at (304) 293-2867; or contact Monnie E. Champion, ORAU Corporate Secretary, at 615-576-3306. You can view ORAU’s website at: http://www.orau.gov/.

ROTC

Air Force Aerospace Studies

Military Science

West Virginia University offers qualified applicants two- and four-year courses of instruction in Military Science (Army ROTC), and Air Force 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 training.

Liberal Studies Program

The dean of a college or school awarding a degree will determine if ROTC courses will be counted as free electives or will be counted toward fulfillment of Liberal Studies Program requirements. Up to three credit hours of ROTC may count toward fulfillment of the LSP requirement in any cluster area.

Uniform Wear and Deposits

Uniforms are not required for students enrolled in the Army ROTC basic course, but are required for the advanced course. All Air Force ROTC students are required to wear a uniform to ROTC classes and leadership laboratories.

Each Air Force ROTC student is required to pay a uniform deposit of $30.00, which will be forfeited as initial payment toward the reimbursement of the total cost of loss or damage to issued property in the student’s possession. The deposit is paid to the WVU Controller at the time of registration and is refunded upon the return of undamaged and freshly-cleaned uniforms. Both Army and Air Force ROTC cadets may purchase their Class A uniforms upon successful completion of the ROTC program.

U.S. Air Force ROTC

(WVU Division of Aerospace Studies)

Nature of Program

The 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 designed to qualify you for commissioning in the U.S. Air Force. West Virginia University has the only Air Force ROTC (AFROTC) detachment in West Virginia. General military courses (GMC) are open to all WVU students. Professional officer courses (POC) are open to students who complete the GMC (two year program) and are selected to attend and successfully complete a four-week field training encampment. Two-year AFROTC applicants may be accepted into a two-year condensed program and must attend and successfully complete a five-week field training encampment.

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 the 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 $150 monthly allowance. Scholarships are available for two, three, and four years, depending on funding. Air Force ROTC also offers a $2,000 annual incentive scholarship, regardless of the student’s major. To qualify, the student must be a full-time student enrolled in the professional officer course, and earn a 2.35 term GPA.
Benefits
Enrolling in Air Force Reserve Officer Training Corps (AFROTC) provides the opportunity to:

- 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 $150 per month (tax free).
- Receive free career counseling from full-time campus representatives.
- Go on field trips to air force installations in the United States.
- Try AFROTC during freshman and sophomore years without obligation (unless you receive an AFROTC scholarship).
- Develop leadership and managerial skills in the various corps projects.
- Compete for entry into the Professional Officer Course (POC) and earn an air force commission.
- Travel, on a space available basis, aboard government aircraft (POC and scholarship cadets only).

Distinguished AFROTC Graduate
An aerospace studies professor 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 campus 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.

Veterans Program
Veterans may receive college credit for the first two years of Air Force ROTC if competing for entry into the POC. If you are interested, contact the professor of aerospace studies early in your sophomore year.

Curriculum
The curriculum in Air Force aerospace studies is divided into three distinct areas: general military course, leadership laboratory, and professional officer course. In addition, each cadet must take and successfully complete a course in English composition, (satisfied by English 1 and 2), or its equivalent, before completing the general military course. Also, prior to graduation and commissioning, all scholarship cadets must complete a course in mathematical reasoning and take two semesters of a major Indo-European or Asian language prior to graduation (high school language classes may fulfill this requirement).

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 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 allowed for each semester course successfully completed. Four semesters of the GMC is one method of competing for admission to the POC. However, a two-year POC option is available if you do not complete the GMC.

To qualify for the general military course, you must:
• Be a full-time student.
• Be a United States citizen (to receive a scholarship).
• Be in good physical condition.
• Have good moral character.
• Be at least 14 years old (17 to receive a scholarship appointment).

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 advanced course 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 advanced course qualifies you for appointment as a second lieutenant in the U.S. Air Force upon receipt of your college degree.

Instruction averages three hours per week throughout the four semesters, plus leadership laboratory. Three hours of credit are allowed for each of the four semesters of work in the advanced program subsequent to acceptance by a school or college in the University.

To qualify for the professional officer course, you must meet all the qualifications for the general military course 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 interviewed and selected by a board of Air Force officers.
• Complete a four-week field training course if you’re in the four-year program or a five-week field training course if you’re in the two-year program.
• complete all graduation and commissioning requirements as follows:
  Pilot or navigator candidates:
• Before age 26 1/2.
  Scholarship recipients:
• Before age 27 as of June 30 of the year you plan to be commissioned. (Waived through age 29 if you have prior service.)
  Non-flying, non-scholarship students
• Before age 30.
U.S. Army ROTC
WVU Division of Military Science

Nature of Program
The military science program at WVU is designed to provide: a reserve corps of scholars, citizens, and soldiers; graduates qualified in leadership and management skills and prepared for public service; and men and women trained to assume responsible positions as commissioned officers in the active Army, Army Reserve, or National Guard, as well as business, government, and industry.

Whether a student elects to take only two years of the program while at the University, for which there is no service obligation, or remains for the full four-year program to become an officer, the student is better prepared to make a meaningful contribution in the preservation of American ideals and national security. There are no uniform or haircut requirements for noncontracted cadets in the Army ROTC basic course.

Scholarship Program
Competitive scholarships are available for two, three, and four years. The government will pay for tuition, fees, and an allowance for textbooks. Additionally, a scholarship student receives $150 per month, tax free, during the academic year as a subsistence allowance. Candidates for the two- and three-year scholarships do not have to be enrolled in military science, but must be qualified to enroll. Additional scholarships are available for nursing students and enlisted members of the U.S. Army Reserve or U.S. Army National Guard. Four-year scholarship competition is for high school students only. High school counselors have application forms, or they are available by writing to: Professor of Military Science, Stansbury Hall, West Virginia University, Morgantown, WV 26506.

United States Military Academy, West Point
Outstanding Army ROTC students may be recommended by the professor of Military Science for ROTC nomination to the United States Military Academy at West Point. The student must meet all academy entrance requirements before being eligible for nomination.

Basic Course (Freshmen and Sophomores Only)
The Basic Course of instruction is for freshman and sophomore students who desire to investigate the possibilities of future government service without committing themselves to a military service obligation. The basic course class may be added or dropped as any other courses in the University. Credits earned in ROTC count toward lower-level academic requirements. Additionally, the student gains a social awareness and develops personal values important in civilian life. Uniforms are not required in the basic course.

Advanced Course (Juniors, Seniors and Veterans)
Selected students may participate in advanced ROTC. It is required of all students who have an ROTC scholarship. Successful completion of the advanced course means earning a reserve commission as a second lieutenant in one of the eighteen branches of the Army which require over 300 occupational skills.
Advanced Summer Camp

Before commissioning, a student must attend an advanced summer camp of six weeks duration between the junior and senior years. Cadets receive travel allowances and pay equal to one-half the basic pay of a second lieutenant.

Leadership Laboratory

Freshman and Sophomore

Leadership training for freshman and sophomore students is challenging and adventurous. It provides opportunity for students to participate in action-oriented activities which develop self-confidence and self-discipline while encouraging the emerging leader. Rappelling, cross-country skiing, land navigation, and orientation visits to U.S. Army installations are some of the student’s choices for participation. An average of one hour per week is required.

Junior and Senior

Leadership instruction is applied by the student in a working laboratory environment. Emphasis is placed on small-unit tactics, drill and ceremonies, physical training, rifle familiarization, and preparation for advanced summer camp.

Two-Year Program (Sophomore and Transfer Students)

Selected applicants are enrolled in a two-year program that leads to an Army commission. The two-year student attends a six-week basic ROTC camp. Upon successful completion of this requirement, the student may enter the advanced ROTC program and complete the requirements for an officer commission during the two remaining years in school. Transfer students desiring to enter this program should contact the Professor of Military Science, Stansbury Hall, West Virginia University, Morgantown, WV 26506, before March 31, when planning to enter the University in the first semester. WVU sophomores considering participation should contact the Army ROTC office early in the second semester.

Military History

Contracted students must take History 110 Modern Military History. The class explores military history from the seventeenth century to the present and includes a study of major world wars and contemporary military alliances. (Offered first semester every other year.)

Physical Conditioning

Students may voluntarily attend for University credit the physical education offering, Military Physical Conditioning, which is conducted each semester by the Army ROTC staff. This course is mandatory for ROTC scholarship and contracted cadets.

Airborne Training

Selected cadets may attend airborne training at Fort Benning, Georgia. Airborne training is three weeks in length; successful completion of the course results in the award of the airborne wings of a military parachutist.

Air Assault Training

Selected students may attend air assault training. This training is ten days in length; successful completion of the course results in the award of the Air Assault Badge.
Veterans Program
Qualified veterans with six months or more of active military service may receive college credits for the first two years of Army ROTC if they are WVU students. They may immediately enter the advanced course if they have 45 hours of college credit with a 2.0 grade-point average or better.

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: 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 College of Agriculture, Forestry and Consumer Sciences emphasizes communications 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. Design projects 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 the 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 baccalaureate 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 masters 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 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 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 course work 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 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 and Parks

This program in the 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 in to 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 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 and LSP 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 course work.

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 (enrolled for at least 12 hours per semester), maintaining a grade-point average in accordance with the standards established by the University Honors Director and Council. In addition to fulfilling the University Honors Program requirements, honors students fulfill all requirements of the University and major area of concentration. Students enrolled in the University 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 may choose from two options to complete the program. In option 1, students complete three to six credit hours in summer guided readings or research projects. In addition, students complete a three-
credit senior seminar. These are part of the 24 credit hours of honors classes. In option 2, students complete 6 to 12 credits of Honors research, under the guidance of a faculty mentor, culminating in an undergraduate 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 performances can 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 honors director and the honors council count toward fulfillment of the honors program requirements. However, if a student takes courses judged by the council to be rigorous and challenging enough to qualify as honors courses, the student may petition, in advance, the director and council for permission to count the hours as honors hours. In each case, the student must submit a petition to the director and the council for such an exception. Each petition is judged on its own merits, and the director and the council must state in writing the decision reached. This statement is placed in the student’s record file and becomes part of the academic record.

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 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 or in the degree program. It does mean that the student will not be designated a University Honors Scholar upon graduation.

**WVU Extension Service**

The WVU Extension Service, part of an educational network of 105 land-grant universities, 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.

The core of a new administrative framework for Extension are three major program centers combining field operations and campus-based program divisions. Those centers are (1) Community, Economic, and Workforce Development, (2) Agricultural and Natural Resources, and (3) 4-H and Youth, Family, and Adult Development. Those themes reflect major areas identified by Extension faculty and clientele in statewide needs inventories. The program center model offers a “more natural” way for Extension faculty to be aligned as they work together to develop and deliver educational programs.

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 translates 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 video production, computer networks, distance education, publication design and production, radio and television production, curriculum design and development, and classroom teaching.

However, students may not be familiar with the diversity of experiences available to them through the WVU Extension Service. They may not equate the name “WVU Extension Service” with educational programs on and off campus. Those who do recognize the name are often familiar with only a segment of Extension’s multifaced programs.

Extension programs have 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 44,000 youths and 7,600 adults statewide.

• 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, 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 13,000 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. County 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.

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.

Part 7 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 Courses intended primarily for freshman and sophomores.

Courses 100-199 Courses intended primarily for juniors and seniors.

Courses 200-299 Courses for advanced undergraduate students and selected graduate students. No more than 40 percent of the credits counted for meeting requirements for a graduate degree can be at the 200 level.

Courses 300-399 Courses for graduate students, students in professional programs leading to a doctorate, and selected advanced undergraduates. Undergraduates in any class carrying a 300-level course number must have a 3.0 cumulative grade-point average and written approval on special forms from the instructor and the advisor. Seniors within 12 semester hours of graduation may, with prior approval of their advisors, enroll in 300-level graduate courses for graduate credit.

In summary, 200-level courses are intended primarily to serve undergraduate students; 300-level courses are intended primarily to serve introductory graduate degrees’ course needs.

Courses 391 Advanced Topics and 397 Master’s Degree Research or Thesis: Courses are approved for University-wide use by any academic unit. These courses may be graded S or U.

Courses 400-499 Courses for graduate students only. All doctoral degree dissertation hours are awarded at the 400-level, specifically under course number 497. Courses numbered 497 may be graded S or U.
Courses 492-495 Courses are approved by the assistant vice president for curricu-
lum and instruction. Approved requests are forwarded to the Office of Admissions and
Records for entry into the WVU Schedule of Courses. Graduate degree credit-hour
requirements must include at least 60 percent at the 300 and 400 level.

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

191. Special Topics. I, II, S. 1-3 Hr. PR: Consent. Investigation of topics not covered
in regularly scheduled courses.

experimental learning program, to be planned, supervised, and evaluated for credit
by faculty and field supervisors; involves temporary placement with public or private
enterprises for professional competence development. (May be repeated up to a
maximum of 18 hours.)

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


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

Accounting (ACCT)

51. 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.

52. Principles of Accounting. 3 Hr. PR: ACCT 51. Utilization of accounting information for purposes of managerial control and decision making; cost concepts, profit and financial budgeting, analysis of financial statements.

110. Introduction to Accounting Systems. I, II. 3 Hr. PR: ACCT 52 and admission to the College of B&E. Accounting software for record keeping, financial analysis, and accounting policy evaluation, with emphasis on the accounting cycle.

111. Intermediate Accounting. 3 Hr. PR: (ACCT 51 with a grade “B” or better) and (ACCT 52 with grade “B” or better) and ECON 54 and ECON 55 and ECON 125 and ENGL 1 and ENGL 2 and (MATH 3 or MATH 14 or MATH 28) and (MATH 128 or MATH 15). Development of accounting theory and practice, with emphasis on asset accounting.

112. Intermediate Accounting. 3 Hr. PR: ACCT 110 and (ACCT 111 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.

115. Cost Accounting. 3 Hr. PR: ACCT 52 and ECON 54 and ECON 55 and ECON 125 and ENGL 1 and ENGL 2 and (MATH 3 or MATH 14 or MATH 28) and (MATH 128 or MATH 15). Fundamentals of cost determination with emphasis on the significance of cost data and their interpretation; process, job-order, and standard costs.

116. Managerial Accounting. 3 Hr. (No credit available to students having credit for ACCT 115.) PR: ACCT 51 and ACCT 52 and ECON 54 and ECON 55 and ECON 125 and ENGL 1 and ENGL 2 and (MATH 3 or MATH 14 or MATH 28) and (MATH 128 or MATH 15.) 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.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

200 A-Z. Special Topics. 1-4 Hr. PR: ACCT 111 or consent. Special topics relevant to accounting. (Maximum of 9 semester hours in any or all courses numbered 200 offered by the College of Business and Economics may be applied toward bachelor’s and master’s degrees.)

210. Advanced Accounting. 3 Hr. PR: ACCT 112. Accounting for business combinations, consolidations, foreign currency translation, governmental and not-for-profit entities, and equity method investment accounting.

211. Accounting Systems. 3 Hr. PR: ACCT 110 and MANG 101. 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 therein.

213. Income Tax Accounting. 3 Hr. PR: ACCT 111 or ACCT 116. 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.


216. Advanced Managerial Accounting. 3 Hr.


218. Auditing Practice. 3 Hr.

224. Advanced Accounting Problems. 3 Hr.


286. **Internship in Accounting.** I, II, S. 1-3 Hr. PR: ACCT 112 and department approval. Supervised practical experience in student's major field; identification, analysis, and evaluation of a specific project. (Student, under departmental supervision, arranges internship with sponsoring organization.)

297. **Independent Study.** 1-3 Hr. PR: ACCT 112 and department approval. Students will develop and complete a program of specialized studies under the supervision of a cooperating instructor. This program may not include credit for internships or employment experience.

**Advertising (ADV)**

110. Typography Printing Process. 3 Hr.

113. **Principles of Advertising.** I, II. 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 prerequisite for other courses in the sequence.

115. **Advertising Copywriting.** I, II. 3 Hr. PR: ADV 113. 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 203.)

190. **Teaching Practicum.** 1-3 Hr.

191. **Special Topics.** 1-3 Hr.

194. **Professional Field Experience.** 1-8 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

201. **Retail Advertising.** I, II. 3 Hr. PR: ADV 115 and ADV 203. Principles and practices of retail advertising. Planning and budgeting; copy preparation and layout, evaluation and selection of media; outdoor advertising, specialty advertising.

203. **Advertising Media Analysis.** I, II. 3 Hr. PR: ADV 113. Coreq: ADV 115. 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.

210. **Graphic Design.** II. 3 Hr. PR: ADV 113. Design layouts for print media. Includes buying, supervising, and scheduling of art, typography, and print material. (2 hr. lec, 2 hr. lab).

239. **Seminar in Advertising Management Problems.** I, II. 2 Hr. PR: Senior standing and major or minor in advertising. Application of the study of advertising research, law, and theory in the preparation of a national advertising campaign. Aspects of the campaign to cover marketing, research, creative, media, sales promotion, and presentation.

251. **Direct Marketing.** I, II. 3 Hr. PR: ADV 115 and ADV 203. An examination of the concepts, strategies and applications involved in direct marketing. Measurability, accountability, lists, data and the integration of direct marketing programs into total marketing efforts are discussed.

259. **Campaigns.** I, II. 3 Hr. PR: ADV 115 and ADV 203 and JRL 221 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.)

**Agricultural and Environmental Education (AGEE)**

62. **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 high school vocational agriculture programs. (1 hr. lec., 2 hr. lab.)

120. **Shop Theory and Methods.** I, II. 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.)

160. **Materials for and Method of High School Teaching of Vocational Agriculture.** I. 3 Hr. PR: Consent. Organization and preparation for teaching vocational agriculture in and through the high school. (Also listed as C&I 160.)

162. **Group Organization and Leadership.** I. 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.
188. Prof Agricultural Internship. 1-8 Hr. PR: Consent.
190. Teaching Practicum. 1-3 Hr. PR: Consent.
191. Special Topics. 1-3 Hr. PR: Consent.
194. Professional Field Experience. 1-3 Hr. PR: Consent.
195. Seminar. 1-3 Hr. PR: Consent.

240. Agricultural Engines. I, II. 3 Hr. Study of power sources (gasoline, diesel, turbine, wankel, etc.) for agriculture and forestry. Operation, selection, maintenance techniques, and emissions impact on power and fuel efficiency. (2 hr. rec., 3 hr. lab.)

250. Engineering Technology for Urban Watershed and Irrigation. I. 3 Hr. Soil and water management; analysis of small watersheds and design of waterways, culverts, ponds, sediments basins, and turf irrigation systems.

255. Advanced Farm Machinery. I. 3 Hr. Systems approach to selection, use, and operation of machinery as 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.)


262. Agricultural and Natural Resource Communications. I, II. 3 Hr. Procedures and practices in developing, interpreting, and communicating agricultural and natural resource information; emphasis on visual materials and effective presentations.

263. Teaching Young, Adult Farmer, and Off-Farm Agricultural Occupations Classes. I. 2 Hr. PR: ED P 105, 106 or consent. Participation in conducting young farmer, adult farmer, and off-farm agricultural occupations classes; organization, course of study, method in teaching, and supervision of classes, young farmers' associations, adult farmers' organizations, and off-farm agricultural occupations organizations. (Also listed as C&I 263.)

270. 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.)

280. Agricultural Mechanics Problems. 1-4 Hr. PR: C or better in an AGRM course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.)

290. 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.

Agricultural and Resource Economics (ARE)
(Economics 51 or 54 is a required prerequisite for all courses in Agricultural Economics numbered 100 or above.)

10. 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.)

50. 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.

97. Energy Resource Economics. I, II. 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.

98. National Energy Policy. II. 3 Hr. Resource and energy policy problems on a national level, including mineral import quotas, prorationing, federal tax and land-law policy, leasing, mineral research and education, health, and social concerns.

101. Principles of Resource and Energy. II. 3 Hr. PR: Third-year standing. Analyzes problems important or peculiar to mineral industry economics; exhaustion, externalities, risks, production cycle, industry structure, pricing, role of minerals in development and trade, resource planning. Energy, metals, industrial minerals. 3 hr. lec.

104. Agribusiness Management. II. 3 Hr. Overview of the agribusiness decision-making process, and the functions of agribusiness management; analysis of financial statements and budgeting for evaluating profitability of alternative enterprises and practices.

110. Introductory Environmental and Resource Economics. II. 3 Hr. Economic analysis of environmental pollution, natural resource conservation and management, outdoor recreation, public land use, wildlife resources, water use, property rights, and benefit-cost issues.
190. **Agricultural and Natural Resources Law.** I. 3 Hr. PR: ECON 51 or 54; consent. Introduction to legal concepts, principles, practices, and issues as related to agricultural and forestry production, agribusiness and private recreation operations, non-consumptive land uses and environmental effects. Includes contracts, torts, real property, and regulation. Field trips required.

191. **Special Topics.** 1-3 Hr.

192. **Agricultural and Natural Resources Law.** I. 3 Hr. Introduction to legal concepts, principles and practices related to environmental, natural resource, and agricultural issues; in the context of the legal system within which statutes are enacted, administered and enforced.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** II. 1-3 Hr. PR: Junior or Senior standing. Advanced study of contemporary agricultural, environmental and natural resource economic issues; identification of potential employment opportunities.

201. **Applied Demand Analysis.** II. 3 Hr. Consumer demand economics applied to environmental, natural resource, and agricultural issues; analysis of factors that influence demand and determine prices; special applications to non-market, environmental, and natural resource amenities.

202. **Applied Production Economics.** I. 3 Hr. Production economics applied to agricultural, environmental, and resource issues; production, multiple-product and cost functions, and joint production; effects of environmental and natural resource management regulations on the production process.

206. **Agribusiness Planning.** I. 3 Hr. PR: ARE 104 or consent. Application of economic and management principles to agribusiness planning; consideration of risk and uncertainty in agribusiness planning; formulation of economic models for determining optimum allocation of resources for production processes.

210. **Environmental and Resource Economics.** I. 3 Hr. PR: ARE 201 and ARE 202; or ECON 211 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.

211. **Rural Economic Development.** I. 3 Hr. Economic trends, development policies, and analysis of rural economies in the United States. Rural diversity, development concepts, rural planning, public programs and policies, and community analysis methods.

213. **Economic Development.** I, II. 3 Hr. PR: ECON 54 and ECON 55. The problems, changes and principal policy issues faced by nonindustrialized countries.

220. **Agricultural Cooperatives.** 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.)

231. **Marketing Agricultural Products.** 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.

235. **Marketing Livestock Products.** 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.)

240. **Futures Markets and Commodity Prices.** I. 3 Hr. Analysis of price-making forces which operate in the market place; emphasis on major agricultural and mineral commodity and futures markets.

245. **Energy Economics.** 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.

250. **Agriculture, Environmental and Resource Policy.** II. 3 Hr. PR: ARE 201 and ARE 202; or ECON 211; 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.

261. **Agribusiness Finance.** 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.

**Agricultural Biochemistry (AGBI)**

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

210. **Introductory Biochemistry.** I, II. 3 Hr. PR: 8 hr. General chemistry, CHEM 131 or equivalent. Introduction to chemistry of cellular constituents (proteins, amino acids, carbohydrates, lipids, nucleic acids, enzymes and coenzymes) and their metabolism in animals and plants.
211. Introductory Biochemistry Laboratory. I. 1 Hr. Conc.: AGBI 210. Experiments to demonstrate certain principles and properties of animal and plant biochemicals.

212. Nutritional Biochemistry. II. 3 Hr. PR: AGBI 210 or consent. Nutritional biochemistry of domestic animals.

213. Nutritional Biochemistry Laboratory. II. 1 Hr. PR: AGBI 210 and AGBI 211 and Conc.: AGBI 212. Experiments to determine the nutritional constituents in animal and plant tissues.

Agricultural and Environmental Education (AGEE)

62. 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.

120. Shop Theory and Methods. I. 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.)

150. 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.)


162. Group Organization and Leadership. I. 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.

188. Professional Agricultural Internship. 1-12 Hr. PR: Consent.

194. Professional Field Experience. 1-18 Hr.

195 A-Z. Seminar. 1-3 Hr.

230. 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.)

240. Agricultural Engines. I, II. 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.)

250. 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.)

255. 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.)


262. Agricultural and Natural Resource Communications. I, II. 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.)

263. Adult Education in Agriculture and Natural Resources. 2 Hr. PR: Consent. Planning and preparation for teaching adult classes and advising agricultural organizations.

270. 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.)

280 A-Z. Agricultural Mechanics Problems. 1-4 Hr. PR: C or better in an Akee course. Special projects and problems in theoretical analysis, design or construction. (1-4 hr. conference.)

290. 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.
Agriculture (AGRL)
11. Professions in Agriculture. I. 1 Hr. An overview of subject matter related to agriculture in current society. Emphasis on agricultural organizations, environmental and food issues, careers, and programs within the College.

12. Professions in Agriculture. II. 1 Hr. Continuation of AGRL 11.

200. Agricultural Travel Course. S. 1-6 Hr. Tour and study of production methods in major livestock and crop regions of the United States and other countries. Influence of population, climate, soil, topography, markets, labor, and other factors on agricultural production.

Agriculture and Forestry (AG&F)
180. Assigned Topics. I, II, S. 1-4 Hr. Assigned studies of an interdisciplinary nature with a particular specialty area in agriculture and forestry. Students must be in good standing and have prior approval of a proposed outline from the division director’s office.

190. Professional Development. I, II, S. 1 Hr. per sem. PR: Cooperative education commitment. Evaluation of cooperative education experience in an independent work-study program.

295. Professional Field Experience. I, II, S. 1-12 Hr. Program, to be planned, supervised, and evaluated for credit PR: Division approval of planned program. Junior or senior standing recommended. 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 competency development. (Pass/ fail grading.)

Agronomy (AGRN)
15. Soil Judging. I. 1 Hr. PR: Consent. Field study of soils for classification and land use evaluation. (3 hr lab.) (May be repeated for max. 3 credits.)


103. Principles of Soil Science Laboratory. I, II. 1 Hr. PR or CONC: AGRN 102 or consent.

150. Turfgrass Management. 3 Hr. PR: AGRN 102 and AGRN 103 and PLSC 52 or consent. Establishment, maintenance and adaptation of grasses for lawns, golf courses, parks, athletic and playing fields, and road-sides. Associating differential plant responses with soil, climatic, and biotic factors. 3 hr. lec. (Offered in fall of odd years)

210. Soil Fertility. I. 3 Hr. PR: AGRN 102 and AGRN 103 and CHEM 16. 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.)

215. Soil Survey and Land Use. I. 3 Hr. PR: AGRN 15 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 fall of odd years.)

217. Soil Genesis and Classification. I. 4 Hr. PR: AGRN 15 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 fall of even years.)

220. Soil Physics. II. 3 Hr. PR: ENV 141. 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 ENV 220 and ENV 220.)

225. Environmental Soil Management. I. 3 Hr. PR: AGRN 102 and AGRN 103. 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 ENV 225.)

230. Soil Physics. II. 3 Hr. PR: AGRN 102 and AGRN 103. Physical properties of soils; water and air relationships and their influence on soil productivity. (Offered in spring of even years.)

251. Weed Control. I. 3 Hr. PR: PLSC 52 and AGRN 102 and AGRN 103 or consent. Fundamental principles of weed control. Recommended control measures for and identification of common weeds. 2 lec., 1 lab. (Offered in fall of odd years.) (Also listed as ENV 251.)

252. Grain and Special Crops. II. 3 Hr. PR: PLSC 52 and AGRN 102 and AGRN 103 or consent. Advances 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.)

254. Forage Crops. I. 3 Hr. PR: PLSC 52, AGRN 102 and AGRN 103, or consent. All phases of forage crop science, including ecology, taxonomy, management practices used for the production of forage and seed, and forage composition, quality, and utilization. (3 hr. lec., 1 hr. lab.)

290 Agronomy
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 255.)

Air Force and Aerospace Studies (AFAS)
GMC. First Year (AFROTC) (AFAS 1 & 2)
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.)

2. 2 Hr. Continuation of AFAS 1. GMC Second Year (AFAS 3 & 4).

3. 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 1960's 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.)

4. 2 Hr. Continuation of AFAS 3. POC—Third Year (AFROTC) (AFAS 105 & 106).

105. 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 6 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 officers’ 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.)

106. 3 Hr. PR: AFAS 105. Continuation of AFAS 105.

POC—Fourth Year (AFAS 107 & 108)
107. 3 Hr. PR: AFAS 105 and 106. 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/officership and 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.)

108. 3 Hr. PR: AFAS 105, 106, 107. Continuation of AFAS 107. AFAS 1, 2, 3, 4, 105, 106, 107 and 108 may be taken out of sequence, if unusual circumstances warrant and the student has received approval from the Professor of Aerospace Studies.

Animal Nutrition (ANNU)
101. 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.

102. Applied Nutrition 1. 3 Hr. PR: ANNU 101. 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.)

103. Applied Nutrition 2. 3 Hr. PR: ANNU 101. Applied feeding practices, nutrient requirements and ration formulation for poultry, swine, laboratory and companion animals. (2 hr. lec., 1 hr. lab.)

Animal Physiology and Breeding (ANPH)
100. Introduction to Animal Physiology. I. 3 Hr. PR: BIOL 1 and BIOL 2 or consent. The function and regulation of the principal systems of the animal body.

200. Growth and Lactation Physiology. II. 3 Hr. PR: ANPH 100, or consent. Animal life cycles; nature of growth and lactation; effects of biological, environmental, and social-psychological variants; physiological regulation and control.

204. Animal Physiology Laboratory. I. 2 Hr. PR: ANPH 100 or consent. Laboratory study of the physiological systems of animals and the influences of environment on these systems. (4 hr. lab.)

225. 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.

226. 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.)

280. 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.)

Agronomy 291
Animal Production (ANPR)
108. Animal Production Experience. I, II. 1-4 Hr. Experience in operating a dairy or livestock farm, including
layers or broilers, calving, lambing, or farrowing of hogs. Can be repeated up to a maximum of 4 credits. (3 hr.
lab./per hr. of credit.)

137. 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.)

of scientific techniques used in selecting those species. Tours of representative flocks, herds and stables
will be required. (Two 3 hr. labs.)

139. Advanced Evaluation of Animals and Products. I. 1-4 Hr. PR: FDSC 134 or ANPR 137 or ANPR 138 or
consent. Advanced selection, evaluation and grading of domestic livestock species and animal products. Tours
of representative flocks, herds and processing plants will be required. Can be repeated up to a maximum of 4
credits. (3 hr. lab./per hr. credit.)

140. Poultry Production. I. 3 Hr. PR: ANNU 101. 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.)

141. Beef Production. I. 3 Hr. PR: ANNU 101. Applying the principles of breeding, nutrition, physiology, and
economics for the production of beef cattle.

142. Beef Production Laboratory. I. 1 Hr. COREQ: ANPR 141. Experiences in beef cattle management, includ-
ing feeding, handling, health programs and farm visits. (3 hr. lab.)

143. Milk Production. 3 Hr. PR: ANNU 101. Feeding and management of dairy cattle. (2 hr. lec., 3 hr. lab.) (Offered in fall of odd years.)

144. Light Horse Science. II. 3 Hr. PR: ANNU 101. Application of breeding, nutrition, physiology, and pathology
to production and management of light horses.

145. Small Ruminants. 3 Hr. PR: ANNU 101. 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.)

Animal and Veterinary Science (A&VS)
5. Professional Orientation. I. 2 Hr. PR: Freshman standing or consent. Survey of academic programs in the
Division of Animal and Veterinary Sciences; related career and professional opportunities. Field trips required.
(Pass/fail grading only.)

190. Teaching Practicum. I, II, S. 1-3 Hr. Teaching practice as a tutor or assistant in Animal Science.

191 A-Z. Special Topics. I, II, S. 1-3 Hr.

194. Professional Field Experience. 1-8 Hr.

195. Seminar. II. 1 Hr. Senior seminar.

196. Senior Thesis. 1-3 Hr.


201. Values and Ethics. 3 Hr. PR: Senior standing or consent. Current ethical aspects in agriculture and forestry
and their impact on societal values.

application to production and management. (Note: Previously listed as ANPR 250.)
Arabic (ARBC)


3. Intermediate Modern Standard Arabic. I. 3 Hr. PR: ARBC 1, 2 or equiv. Cont. of ARBC 2.

4. Intermediate Modern Standard Arabic. II. 3 Hr. PR: ARBC 3 or consent. Cont. ARBC 3.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

Art (ART)

3. Materials and Procedures. I, II, S. 3 Hr. The course is designed for elementary education majors, to familiarize the student with two- and three-dimensional media, processes, and concepts.

11. Drawing 1. I, II, S. 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.

12. Drawing 2. I, II, S. 3 Hr. (Complementary to ART 11.) 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.

30. Appreciation of Visual Arts. I, II, S. 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.

100. Orientation. I. 1 Hr. The course is a freshman convocation dealing with the curriculum, program orientation and related professional issues.

101. Non-Major Ceramics. I, II, S. 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.

105. Survey of Art. I. 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. II. 3 Hr. The course examines the history of the visual arts in world cultures from the fourteenth century to the present.

112. Art In Education. 2 Hr.

113. Painting. I, II, S. 3 Hr. PR: (ART 11 and ART 12 and ART 121) or equiv. The course serves as an introduction to oil painting, with concentration on basic structure, techniques and imagery of historic and contemporary oil painting. Emphasis is on the development of skills in rendering works which convincingly express light, color and form integral to the medium.

114. Painting. I, II, S. 3 Hr. PR: (ART 11 and ART 12 and ART 121) or equiv. The course provides the essential structure, techniques and iconography of acrylic painting. Its modern development, augmenting the traditional languages of oil painting, are clarified and isolated.

121. 2D Visual Foundation. I, II. 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 ability and visual awareness emphasizing the basics of color perception, form, proportion and rhythm.

122. 3D Visual Foundation. I, II. 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.

123. Introduction to Graphic Design. I. 3 Hr. PR: ART 12 and ART 121. The course emphasizes the application of traditional and technological skills emphasizing color, composition, symbolic drawing, and typography fundamental to the field of graphic design.

124. Introduction to Graphic Design. II. 3 Hr. PR: ART 123. The course emphasizes advanced typography, sequential projects and complex compositions and includes preparation as well as review of upper level entrance portfolios.
126. **Introduction to Sculpture.** I, II, S. 3 Hr. PR: ART 12 and ART 122. 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.

127. **Sculpture.** I, II, S. 3 Hr. PR: ART 12 and ART 122. New construction techniques using stretched canvas over wood encaustics, molds, plasticene and figure modeling will aid the students in developing problem solving skills related to aesthetics and formal sculptural issues.

130. **Intaglio.** I, II, S. 3 Hr. PR: ART 12 and ART 121. 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 traditional and non-traditional approaches.

131. **Lithography.** I, II. 3 Hr. PR: ART 12 and ART 121. The course is an introduction to the fundamental processes of stone 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.

132. **Photography.** I, II. 3 Hr. PR: ART 12 and ART 121. 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.

140. **Ceramics.** I, II, S. 3 Hr. PR: ART 12 and ART 122. 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.

141. **Ceramics.** I, II. 3 Hr. PR: ART 12 and 122. (Complementary to ART 140.) The course covers basic ceramic techniques: throwing, trimming, ceramic design glazing, firing and studio practices. Lectures cover basic ceramic material, information and studio procedures.

164. **Introduction to Art Education.** II. 3 Hr. PR: ART 121 and ART 122 and ART 105 and ART 106 and 6-hours studio. Contemporary art education and resources that support its practices. Students also interact with experienced K-12 art specialists and their students at various grade levels.

165. **Elementary Art Education.** I. 4 Hr. PR: ART 12 and ART 122. 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.

166. **Secondary Art Education.** II. 4 Hr. PR: ART 12 and ART 122. The course explores curriculum development at the secondary level based on the discipline based content and character of art education. Methods and techniques of instruction are examined in coursework and practicum experiences in the schools based on the national standards for the visual arts.

190. **Teaching Practicum.** 1-3 Hr.

191 A-Z. **Special Topics.** 1-3 Hr.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

200 A-Z. **Independent Study Studio.** I, II. 1-15 Hr. Intensive self directed research involving special projects in studio production. Areas of study include, but are not limited to, painting, drawing, printmaking, sculpture, ceramics and design.

201. **Independent Study Art History.** I, II. 1-15 Hr. This class concentrates upon independent research, closely supervised, on a topic of students selection. This must be well-defined and contain historical, critical, and theoretical issues. Contractual course.

211. **Figure Drawing.** I, II. 3 Hr. PR: ART 12 and ART 121. This course concentrates on compositional structure from the human figure. Students will investigate the organic nature of the figure and its representation in space using a wide variety of media and processes. (May be repeated for credit.)

211. **Advanced Drawing.** I, II. 3 Hr. PR: ART 211. This class expands media possibilities, and examines the variables of image-making while establishing personal expression. The course is designed to developing analytical and problem solving skills as well as technical processes. (May be repeated for credit.)

213. **Painting.** I, II, S. 1-15 Hr. The course reaffirms and expands formal criteria established in 113 and 114 and directs individual research into personal, historical and contemporary painting issues in oil, acrylic and related media. (May be repeated for credit.)

223. **Graphic Design.** I, II. 1-12 Hr. 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.)
224. *Graphic Design.* I, II. 1-9 Hr. Senior graphic design studio includes a model studio with real clients and projects, most of which are produced and printed. Emphasis is on developing professional skills in design and design management. (May be repeated for credit.)

225. *Graphic Design/Senior Project.* I, II. 3 Hr. 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.)

226. *Sculpture.* I, II. 1-15 Hr. 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.)

227. *Installation Art.* I, II. 1-15 Hr. 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.)

230. *Printmaking.* I, II. 1-15 Hr. 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.)

232. *Alternative Photography.* I, II. 1-15 Hr. 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.)

240. *Ceramics.* I, II. 1-15 Hr. 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.)

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. The visual examples will be considered critically examined. Architecture, sculpture and painting will be included.

246. *Medieval Art.* I, II. 3 Hr. 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. *Northern Renaissance.* I, II. 3 Hr. 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. *Italian Renaissance.* I, II. 3 Hr. 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. *Baroque.* I, II. 3 Hr. The course examines art of the late 16th through early 18th centuries, both Northern and Southern European examples. Issues of historical context and theoretical interpretation are emphasized.

250. *Nineteenth Century.* I, II. 3 Hr. The course focuses upon European and American art from the late 18th C. through 1900. Issues of theory, historical context and literary foundation will be considered.

251. *Modern.* I, II. 3 Hr. 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.

252. *American.* I, II. 3 Hr. The 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.

253. *Contemporary.* I, II. 3 Hr. The 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.

254. *Art Theory.* I, II. 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.* I, II. 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.

265. *Pre-Student Teaching.* I, II. PR: ART 165 and ART 166. The course concentrates on curriculum development, research methods, and delivery strategies for K-12 art specialists preparing for their professional semester.

291 A-Z. *Special Topics: Art.* I, II. S. 3 Hr. The class presents occasional topics not otherwise treated within the regularly scheduled courses and may include photography, design, architecture, and criticism among others.
Senior Seminar. I, II, S. 3 Hr. The focus of this seminar is analysis of theoretical and professional studio issues as well as trends in contemporary art practice and criticism. Emphasis will be on comparative media, interdisciplinary forms of expression and significant cultural concerns outside of visual arts practice. Topics will be coordinated and involve the Visiting Artist Series.

Astronomy (ASTR)
106. Descriptive Astronomy. I. 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.

216. Astronomy for Teachers. S. 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.


Athletic Coaching Education (ACE)
68. Sport Officiating. I. 2 Hr. Study of officiating.

100. The Total Athlete. I, II, S. 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.


103. Coaching Special Olympics. I. 3 Hr. An in-depth look into the techniques and methods used in coaching special Olympics.

104. CPR/First Aid for Coaches. S. 3 Hr. Certification and practicum for CPR and First Aid for all coaches.

105. Nutrition for Coaches. S. 3 Hr. General nutrition and dietary requirements to aid coaches and their athletes.

106. Introduction to Physical Education. S. 3 Hr. A general overview into the teaching/methodologies, etc. in a physical education/coaching education environment.


108. Techniques of Coaching: Swimming. I. II. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.


110. Techniques of Coaching: Track. I, II, S 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

111. Techniques of Coaching: Wrestling. I, II, S. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

112. Techniques of Coaching: Soccer. I, II, S. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

113. Techniques of Coaching: Basketball. I, II, S. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

114. Techniques of Coaching: Women's Basketball. II. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

115. Techniques of Coaching: Baseball. S. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

116. Techniques of Coaching: Football. S. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

117. Techniques of Coaching: Volleyball. S. 2 Hr. Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

118. Theories of Coaching Football. S. 2 Hr. Designed to give students insights into the theories and practices involved in coaching football.
194. **Professional Field Experience.** I, II, S. 1-6 Hr. Designed to give the students a hands-on experience in working with a varsity athletic team.

195. **Seminar.** I. 3 Hr. PR: Senior Status. (Senior seminar.)

198 A-Z. **Special Topics.** I, II, S. VR 1-3

**Athletic Training (ATTR)**

20. **Taping, Bracing, and Padding.** I. 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.

121. **Sport Injury Control and Management.** I, II, S. 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.** II. 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.

181. **Athletic Training Practicum 1.** I. 2 Hr. PR: Sophomore 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.

182. **Athletic Training Practicum 2.** II. 2 Hr. PR: Sophomore 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.

218. **Gross Anatomy Lab.** II. 1 Hr. Analysis of gross anatomy and systems of the trunk and extremities; cadaver laboratory experience.

219. **Gross Anatomy.** II, S. 3 Hr. Designed to provide an overview of body systems and gross anatomy of the trunk and extremities.

220. **Advanced Athletic Training.** S. 3 Hr. PR: Consent. Designed to provide an in-depth analysis of life-threatening situations and internal injuries associated with athletics.

221. **Therapeutic Modalities.** I, II. 3 Hr. PR: Consent. Designed to investigate tissue repair, physiology of hot and cold treatment, therapeutic modalities and pharmacology relevant to athletic injury management.

222. **Orthopedic Assessment 1.** II. 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.

223. **Athletic Injury Rehabilitation.** I. 3 Hr. PR: Consent. Designed for the practical applications of athletic training techniques.

224. **Athletic Training Senior Seminar.** I. 3 Hr. PR: Consent. Practical application of athletic training techniques.

225. **Organization and Administration.** II. 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.

226. **Medical Aspects of Athletic Training.** I. 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.

227. **Biomechanics.** II. 3 Hr. PR: Consent. Designed to provide in-depth study of normal and abnormal biomechanics of the lower extremity and spine.

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232. **Orthopedic Assessment** 2. S. 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.

**Biology (BIOL)**


5. **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.

15. **Principles of Biology**. I. 4 Hr. PR: BIOL 1 and BIOL 2 and BIOL 3 and BIOL 4. 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.

17. **Introductory Physiology**. II. 4 Hr. PR: BIOL 15 or BIOL 1, 2, 3, and 4. Continuation of BIOL 15. The diversity of reproductive, developmental, functional, and integrative mechanisms in plants and animals.

19. **The Living Cell**. I. 4 Hr. PR: (CHEM 15 or 17); and BIOL 17. Continuation of BIOL 17. Structure function and diversity of cells with an emphasis on gene expression and cellular phenotype including cell chemistry, energetics, and regulation of cell activities.


105. **Undergraduate Research**. I, II. 1-4 Hr. PR: Written consent of chair and a 2.7 grade-point average in biology. Individual laboratory or field experiments supervised by a faculty member.

107. **Honors Investigation and Thesis**. I, II, S. 1-4 Hr. (May be repeated for credit; max. credit 12 hr.) PR: Second semester of junior year, recommendation of adviser, biology majors only. Permission required. Supervised readings, investigation, and study.

109 A-Z. **Topics and Problems in Biology**. I, II, S. 1-4 Hr. (May be repeated for a max. of 6 hr.) PR: Permission required. Topics and problems in contemporary biology. All topics and problems must be selected in consultation with the instructor.

166. **Human Physiology**. I, II. 3 Hr. PR: BIOL 1, 3 and 2, 4. (Intended for non-biology majors.) An introductory course in the function of the human.

169. **Plant Physiology**. II. 3 Hr. PR: (BIOL 1 or Biol 17) and CHEM 15 and 16. Physiochemical processes of plants.

194. **Professional Field Experience**. I, II, S. 1-18 Hr. PR: Permission required. Experience in the practical application of knowledge and skills appropriate to a degree in biology.

201. **History of Biology**. I. 3 Hr. PR: (BIOL 1 and BIOL 3 and BIOL 2 and BIOL 4) or BIOL 15. History of development of biological knowledge with philosophical and social backgrounds.

209 A-Z. **Topics and Problems in Biology**. I, II, S. 1-4 Hr. (May be repeated for maximum of 6 hours.) PR: Permission required. Topics and problems in contemporary biology. All topics and problems must be selected in consultation with the instructor.

210. **Biometry**. 3 Hr. PR: STAT 101. Application of quantitative methods and statistics to biological data with emphases on hands-on hypothesis construction, experimental design, data analysis and biological interpretation of statistical results.


212. **Advanced Cellular/Molecular Biology-Laboratory**. II. 1 Hr. Coreq: BIOL 211. Experimental approaches to the study of cellular systems.
213. Introduction to Virology. I. 3 Hr. PR: BIOL 19. Survey of viruses their modes of replication, their contribution to molecular biology, the significance of viral diseases in agriculture and medicine, and the contemporary use of viruses in biotechnology.

214. Molecular Basis of Cellular Growth. I. 3 Hr. PR: BIOL 19. Study of the integration of events as they regulate the growth and division of cells. Topics include hormones as cell effectors and the cancer cell as a model system.

216. Cell and Molecular Biology Methods. I. 3 Hr. PR: BIOL 19. Introduction to the theory and application of basic analytical tools used in molecular biology. Selected topics included are hydrodynamic methods, chromatography, electrophoresis, and general laboratory methods. (Offered in even years.)

219. Introduction to Recombinant DNA. I. 4 Hr. PR: BIOL 19. An introductory course covering the basic principles and techniques of recombinant DNA technology, includes molecular cloning, isolation of plasmid DNA, agarose/acrylamide gel electrophoresis, restriction enzyme mapping, nucleic acid hybridization, and DNA sequencing.

221. Molecular Genetics. II. 4 Hr. PR: BIOL 15 and BIOL 17 and BIOL 19. Theoretical and practical knowledge in genetics as a field of study and tool for investigating biological problems are presented. The laboratory is a logical sequence of experiments providing actual research experience in molecular genetics.

222. Cell Structure and Function. 4 Hr. PR: BIOL 21. Students gain hands-on experience in methodologies used to study cell structure and function. Light and fluorescence microscopy are used to address cell signaling, signal transduction, exocytosis, apoptosis, and regulation of gene expression in reproductive endocrinology.

223. Developmental Biology. II. 4 Hr. PR: BIOL 15 and BIOL 17 and BIOL 19. A molecular genetic analysis of the mechanisms by which multicellular organisms develop from single cells.

224. Developmental Biology. II. 4 Hr. PR: BIOL 15 and BIOL 17 and BIOL 19. A molecular genetic analysis of the mechanisms by which multicellular organisms develop from single cells.

231. Animal Behavior. I. 4 Hr. PR: BIOL 21 and ((BIOL 1 and BIOL 3 and BIOL 2 and BIOL 4) or BIOL 15). Introduction to animal behavior (ethology) emphasizing the ecology and evolution of individual and social behaviors. Laboratory includes independent investigation of behavioral phenomena. Offered in even-numbered years.

232. 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 226.)


234. Neuroethology. II. 3 Hr. PR: BIOL 17 and 19 and (BIOL 231 or BIOL 232). Explores the way behavior is controlled in a wide variety of animals so the similarities and differences in neural mechanisms can be better understood. Offered in odd-numbered years.

240. Methods in Ecology and Biogeochemistry. II. 3 Hr. PR: BIOL 21. 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.)

243. Plant Ecology. I. 4 Hr. PR: BIOL 21. Introduction to the four divisions of plant ecology, including physiological ecology, population ecology, community ecology and ecosystem ecology. (Offered in odd years.)

244. Global Ecology. I. (Odd-num. yrs.) 3 Hr. PR: BIOL 21. The Earth viewed as a changing biogeochemical system. Topics include the structure, composition and dynamics of the ecosphere, nutrient cycles, changing atmospheric composition, climate change, ozone depletion, land-use change, biological invasions, and changes in biodiversity.

246. Limnology. I. 4 Hr. PR: BIOL 21. Physical, chemical, and biological characteristics of inland waters with an introduction to the principles of biological productivity.

247. Aquaculture. 3 Hr. PR: (BIOL 1 and 3 and 2 and 4), or BIOL 15. An introduction to the farming and husbandry of freshwater and marine organisms. Overnight field trips are voluntary. (Offered in odd years.)

248. Comparative Evolutionary Biology of Plants. I. 4 Hr. PR: BIOL 1 and BIOL 3) and (BIOL 2 and BIOL 4) or (BIOL 15 and BIOL 17). Evolutionary history, morphology, life cycles, and ecology of extant and extinct groups, including: cyanobacteria, lichens, algae (green, red, and brown), bryophytes, ferns, fern allies, gymnosperms, and angiosperms. Laboratory emphasizes comparative analysis of living specimens. One of two field trips at student’s expense.

249. Plant Systematics. I. 4 Hr. PR: (BIOL 1 and BIOL 3) and (BIOL 2 and BIOL 4) or BIOL 17. Study of the taxonomy of flowering plants worldwide and related topics in angiosperm classification and evolution. Laboratories emphasize characteristics of selected families of monocotyledons and dicotyledons using living and herbarium material.

251. Principles of Evolution. I. 3 Hr. PR: BIOL 21. 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.
252. *Flora of West Virginia*. S. 3 Hr. PR: (BIOL 1 and BIOL 3) and (BIOL 2 and BIOL 4) or BIOL 15. Identification of local woody and herbaceous seed plants, with emphases 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.

253. *Anatomy and Development of Plants*. II. 4 Hr. PR: BIOL 17 or PLSC 52. A comparative study of vegetative and reproductive structures (cells, tissue, and organs) of bryophytes and vascular plants with emphasis on flowering plants. Laboratories focus on living plants and include observation of plant development from spores, seeds, and cuttings. One field trip.

254. *Plant Geography*. II. 3 Hr. PR: BIOL 21. World-wide distribution patterns of plants and factors related to these distributions—including dispersal. Limiting factors, climate, isolation, evolutionary history, plate tectonics, pleistocene glaciations, and human activities. Plant communities and soils of polar, temperate, and tropical biomes are discussed.

255. *Invertebrate Zoology*. II. 4 Hr. PR: BIOL 19 and 21. The evolution of animals without vertebral columns. The laboratory includes field trips including one that takes an entire weekend. (Dissection kit required.) Offered in odd-numbered years.

257. *Ichthyology*. II. 3 Hr. PR: BIOL 17. Internal and external structure of fishes, their systematic and ecological relationships, and their distribution in time and space. (Dissection kit required.)

260. *Plant Development*. I. 4 Hr. PR: BIOL 15 and 17, and 19 and 21 and (organic chemistry or biochemistry.) Experimental studies of plant growth and development.

261. *Comparative Anatomy*. I. 4 Hr. PR: BIOL 15 and 17 and 19 and 21 or consent. A functional and evolutionary study of vertebrate structure. (Dissection kit required.)


268. *Molecular Endocrinology*. I. 3 Hr. PR: BIOL 19. Hormonal action is discussed at the cellular and molecular levels. Topics include hormone production and regulation, receptor kinetics and activation, and receptor output.

269. *Molecular Endocrinology—Laboratory*. I. 1 Hr. Coreq: BIOL 268. Experimental techniques used to study hormones and receptors.

270. *General Animal Physiology*. I. 3 Hr. PR: BIOL 15 and 17 and 19 and 21. In-depth, current treatment of physiological principles which operate at various levels of biological organization in animals of diverse taxonomic relationships. Understanding is developed from background lectures and student analyses in discussion sessions of research literature.

271. *General Animal Physiology—Laboratory*. I. 1 Hr. Coreq: BIOL 270. After learning basic techniques, students are provided the opportunity to design, execute, and report upon an independent research project in physiology.


**Broadcast News (BN)**

117. *Introduction to Broadcasting*. I, II. 3 Hr. (Open to all University students.) Survey of the broadcasting industry from the perspective of broadcast journalism, including historical development, federal regulation, industry codes, professional responsibilities, broadcasting research, and contemporary developments including cablevision.

119. *Broadcast News Writing*. I, II. 3 Hr. Gathering, researching, and evaluating facts; writing news for radio and television; ethical responsibilities of broadcast news reporters.

185. *Broadcast Journalism 1*. I, II. 3 Hr. PR: BN 119. Gathering, writing, editing, and presenting radio news; taping; monitoring local and network newscasts; emphasis on news writing and production. Lec./Lab. (Lab fees assessed for this course.)

186. *Electronic Field Reporting*. I, II. 3 Hr. PR: BN 185. Field reports for television news using ENG videotape technology; topic selection, evaluation, research, and writing; visual and script development; ethical and legal considerations. (Lab fees assessed for this course.)

190. *Teaching Practicum*. 1-3 Hr.

191. *Special Topics*. 1-3 Hr.


195. *Seminar*. 1-3 Hr.
287. Broadcast Journalism 2. I, II. 3 Hr. PR: BN 185 and BN 186. Continuation of BN 186. Television news, including electronic news gathering (ENG) and production of newscasts. (Lab fees will be assessed for this course.)

Business Administration (BUSA)
No credit is available for BUSA courses toward business or economics degrees. Course completion does not allow admission into other business courses without completion of other pre-business prerequisites. These courses, other than BUSA 10, should not be taken by pre-B & E students or any College of Business and Economics major.

10. 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.

110. 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.

120. 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.

130. 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.

140. 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.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

Business Core (BCOR)
150. Legal Environment of Business. 3 Hr. Explores the relationship of law, government and ethics to business enterprise. Provides overview of legal and ethical issues relevant to business decision-making and planning and the government regulations of business.

160. Information Systems and Technology. 3 Hr. PR: CS 5. 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.

165. Professional Development 1. 1 Hr. PR or Conc: BCOR 160. 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.

170. Financial/Managerial Dec. Analy. 5 Hr. PR or Conc: BCOR 160. Financial, analytical, and decision-making models necessary for the successful conduct of a business, including financial management tools and techniques, quantitative analysis and models, and accounting methods for planning and control.

180. Marketing, Operations and Strategy. 5 Hr. PR or CONC: BCOR 150 and BCOR 160 and BCOR 165. Business processes, including establishing strategic direction and leadership, identifying products. Services for target markets, production facilities and processes, and the distribution, pricing and promotion of products/services.

185. Managing Individuals and Teams. 3 Hr. Topics include traditional management functions, employee motivation, leadership, team dynamics, individual and group decision-making, and individual differences. Additional topics include social responsibility and ethics, diversity, organizational structure and design, organizational control, and managing innovation and change.

Business Law (BLAW)
112. Business Law for Managers. 3 Hr. PR: BLAW 111. Survey of legal principles relevant to operation and management of business organization, including the substantive law of agency and employment, business organizations, credit and bankruptcy.
190. Teaching Practicum. 1-3 Hr.
191. Special Topics. 1-3 Hr.
194. Professional Field Experience. 1-18 Hr.
195. Seminar. 1-3 Hr.
196. Senior Thesis. 1-3 Hr.
197. Honors. 1-3 Hr.

200. Special Topics. 1-4 Hr. PR: BLAW 112. Special topics relevant to business law. (Maximum of 9 semester hours in any or all courses numbered 200 offered by the College of Business and Economics may be applied toward bachelor’s and master’s degrees.)

211. Personnel Relations and the Law. 3 Hr. PR: BLAW 111 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.

213. Law for the C.P.A. 3 Hr. PR: BLAW 111. (Credit cannot be received for both BLAW 112 and BLAW 213.) A survey of those areas of commercial and regulatory law with which accountants need familiarity in order to exercise good judgement, practice their profession skillfully and understand their professional responsibility.

**Business Management (MANG)**

101. Introduction to Business Information Systems. 3 Hr. PR: CS 5 or equiv. Overview of business information systems. Introduces hardware, software, procedures, systems and human resources. Explores their integration and application in business information systems.

102. Database Management Systems. I. 3 Hr. PR: MANG 101. Introduction to database theory, design, implementation, management, and models; development of database applications for management systems.

105. Contemporary Management. 3 Hr. PR: MANG 101, 105. Management as a process involving the functions of planning, organizing, controlling, and directing. Provides an integrated view of the management discipline with emphasis on organizational behavior issues.

111. Production and Quantitative Business Methods. 3 Hr. PR: MANG 101, 105. Study of production/management systems, including models and techniques for managing production and distribution of goods and services.

160. Management of Small Business. 3 Hr. PR: MANG 105. 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.

200. Special Topics. 1-4 Hr. PR: Consent. Special topics relevant to management. (A maximum of nine semester hours in any special topics 200 course offered by the College of Business and Economics may be applied toward bachelor’s and master’s degrees.)

201. Business Information Systems. 3 Hr. PR: MANG 101 and 105. Use of EDP for decision making with emphasis on application in the functions of finance, marketing, personnel, accounting, and operations management.

205. The Individual and the Organization. 3 Hr. PR: MANG 105. 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.

206. Organizational Theory and Analysis. 3 Hr. PR: MANG 105. Influences of structure on the behavior and dynamics of the business organization, including emphasis on becoming an effective manager.

211. Advanced Production Management. 3 Hr. PR: MANG 111. Integration of quantitative techniques and their application to production problems. Utilizes cases and projects.

212. Management Science. I. 3 Hr. PR: MANG 105. Study and application of quantitative methods to business problems in which deterministic conditions prevail.

216. Personnel Management. 3 Hr. PR: MANG 105. 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 appraising, compensation, safety and health and labor relations.

217. Personnel and Compensation. 3 Hr. PR: MANG 216. 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.

218. Focal Points in Management. 1-3 Hr. PR: MANG 105. In-depth study of specialized management subjects, e.g., personnel interviewing, job descriptions, consulting, or organizational development. (Each subject is self-contained, spans one-third of a semester, and is valued at 1 credit hour.)

220. Human Resource Management Research Methods. II. 3 Hr. PR: MANG 205 and 216, or consent. Research methods and measurement in human resource management; philosophy of science, ethics in research, research design, and analytical methods.
222. Management Science. II. 3 Hr. PR: MANG 212 or consent. Study and application of quantitative methods to business problems in which probabilistic conditions prevail.

225. Business Policy. 3 hr. PR: Senior standing and consent. Integration of key components of the business curriculum. The case method is utilized to study a wide variety of policy issues including international and ethical concerns.

230. Entrepreneurship. 3 hr. PR: Consent. 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.

260. Practicum in Small Business. 3 hr. PR: Consent. 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.

297. Internship in Management. I, II, S. 1-3 hr*. PR: Junior standing and consent. Supervised practical experience in student’s major field; identification, analysis, and evaluation of a specific project. (Student, under departmental supervision, arranges internship with sponsoring organization).

299. Independent Study. 1-3 hr*. PR: Consent. Students will develop and complete a program of specialized studies under the supervision of a cooperating instructor.

Chemical Engineering (CH E)

38. Numerical Methods for Ch E. 3 Hr. PR: ENGR 2 and MATH 16. Coreq.: CH E 41 and MATH 17. 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.)

40. Material and Energy Balances 1. 3 Hr. PR: MATH 15 and CHEM 16. Coreq.: ENGR 2. 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.)

41. Material and Energy Balances 2. 3 Hr. PR: CH E 40. Coreq.: CH E 38. Continuation of CH E 40. (2 hr. lec., 2 hr. calc. lab.)

105. Engineering Materials Science. 3 Hr. PR: Junior standing in Engineering and Mineral Resources. Includes the study of the internal structures of metals, ceramics, and organic materials, and the dependence of properties upon these structures; the behavior of materials under conditions involving mechanical stresses, thermal reactions, and corrosion; synthesis and preparation of materials.

110. Process Fluid Mechanics. 3 Hr. PR: MATH 17 and CH E 41. 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. lab.)

111. Process Heat Transfer. 3 Hr. PR: MATH 17 and CH E 41. 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. lab.)

112. Separation Processes. 4 Hr. PR: CH E 110 and CH E 111 and CH E 142. Equilibrium stage and multiple stage operations, differential countercurrent contracting, membrane separations, fluid-particle separations. Laboratory demonstrations and experiments. (3 hr. lec., 2 hr. lab.)

142. ChE Thermodynamics. 4 Hr. PR: CH E 41 and MATH 17. First and second laws of thermodynamics. Thermodynamic functions for real materials. Physical and chemical equilibrium concepts and applications. (3 hr. lec., 2 hr. calc. lab.)

145. ChE Transport Analysis. 3 Hr. PR: CH E 110 and CH E 111 and CH E 142 and MATH 18. Development of fundamental relationships for momentum, heat and mass transfer for flow systems to include chemical reactions, integrates transport, and transient phenomena. Development and use of microscopic and macroscopic balance equations.

172. Chemical Reaction Engineering. 3 Hr. Coreq.: CH E 112. Application of material balances, energy balances, chemical equilibrium relations, and chemical kinetic expressions to the design of chemical reactors. (3 hr. lec.)

175. Chemical Process Control. 3 Hr. PR: CH E 112 and CH E 172. Transient behavior of chemical process flow systems, linearization and stability. Process control system design including frequency response analysis. Instrumentation and hardware.

180. Unit Operations Laboratory 1. 1 Hr. PR: CH E 112 and CH E 172. Operation of chemical process engineering equipment; collection, analysis, and evaluation of data; laboratory report preparation. (4 hr. lab.)

181. Unit Operations Laboratory 2. 1 Hr. PR: CH E 180. Continuation of CH E 180. (4 hr. lab.)
182. Chemical Process Design 1. 4 Hr. PR: CH E 112 and CH E 172. 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.)


190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

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

197. Honors. I, II, S. 1-3 Hr. PR: Students in the Honors Program and consent by the Honors Director. Independent reading, study, or research.

212. Biochemical Separations. 3 Hr. PR: CH E 112 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.)

220. Particle Processing. 4 Hr. PR: CHEM 141 or CHEM 246 or CH E 142 or MAE 101 or MAE 141. 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., 1 hr. lab.)

221. Extractive Processing. 4 Hr. PR: CHEM 141 or CHEM 246 or CH E 142 or MAE 101 or MAE 141. Topics include the basic mechanisms of unit processes of leaching, solvent extraction, and electrowinning; roasting, smelting and refining. (3 hr. lec., 1 hr. lab.)

224. Coal Conversion Engineering. 3 Hr. PR: CHEM 134; Coreq: CH E 112, and CH E 172. Coal conversion processes from the unit-operations approach; thermodynamics, kinetics, and evaluation of system requirements and performance. (3 hr. lec.)

255. Electronic Materials Processing. 3 Hr. PR: Junior standing in Engineering and Mineral Resources. The design and application of thermal, plasma, and ion assisted processing methodologies; solid state, gas phase, surface, and plasma chemistry underpinnings; thin film nucleation and growth; the effect of processing methods and conditions on mechanical, electrical, and optical properties. (3 hr. lec.)

256. 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.)

257. 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.)

258. Polymer Science and Engineering. 3 Hr. PR: CHEM 134. Coreq: CH E 145. Polymer classification, polymer synthesis, molecular weights and experimental techniques, thermodynamics, rubber elasticity, mechanical behavior, crystalization, diffusion, rheology, extrusion and injection molding. 3 hr. lec.

260. Chemical Process Safety. 3 Hr. PR: CH E 41 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.)

265. Interfacial Phenomena. 3 Hr. PR: CH E 145 and CHEM 246 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.)

272. Biochemical Engineering. 3 Hr. PR: CH E 172 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.)

280 A-Z. Chemical Engineering Problems. 1-6 Hr. For Junior, Senior and Graduate students. For students desiring to take only a portion of a course, for individual projects, for subjects not covered in other courses.

Chemistry (CHEM)

Note: A charge may be made for breakage and supplies in laboratory courses and for failure to check out of the laboratory.

10. Introduction to Chemistry. I, II. 2 hr. PR: concurrent enrollment. 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.)

304 Chemistry
11. **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 15 or 17 and for CHEM 11.) (Chemistry 11 and 12 cannot be used as pre-requisite courses for organic chemistry; students anticipating the possibility or likelihood of taking organic chemistry must have credit for Chemistry 15 and 16 or for 17 and 18.)

12. **Survey of Chemistry.** II. 4 hr. PR: CHEM 11. Continuation of CHEM 11. 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 16 or 18 and for CHEM 12.) (Chemistry 11 and 12 cannot be used as pre-requisite courses for organic chemistry; students anticipating the possibility or likelihood of taking organic chemistry must have credit for Chemistry 15 and 16 or for 17 and 18.)

15. **Fundamentals of Chemistry.** I, II. 4 hr. PR: CHEM 10 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. (2 hr. lec., 1 hr. rec., 3 hr. lab.) (Students may not receive credit for CHEM 17 and for CHEM 15.

16. **Fundamentals of Chemistry.** I, II. 4 hr. PR: CHEM 15. Cont. of CHEM 15. (2 hr. lec., 1 hr. rec., 3 hr. lab.) (Students may not receive credit for CHEM 18 and for CHEM 12 or 16.)

17. **Principles of Chemistry.** I. 5 hr. PR: High school chemistry and satisfactory performance on departmental placement examination, or CHEM 10. A more advanced treatment of the principles and theories of chemistry than offered in CHEM 15 and 16. Primarily for students specializing in chemistry. (3 hr. lec., two 3-hr. lab.) (Students may not receive credit for CHEM 17 and for CHEM 11 or 15.)

18. **Principles of Chemistry.** II. 5 hr. PR: CHEM 17. Cont. of CHEM 17. (3 hr. lec., two 3-hr. lab.) (Students may not receive credit for CHEM 18 and for CHEM 12, 16, or 115.)

115. **Introductory Analytical Chemistry.** I. 4 hr. PR: CHEM 16. 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 115 and for CHEM 17 and 18.)

131. **Organic Chemistry: Brief Course.** II. 4 Hr. PR: CHEM 16. 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 131 and for CHEM 133 and 134.)

133. **Organic Chemistry.** I, II. 3 Hr. PR: CHEM 16 or 18; CHEM 135 or concurrent enrollment. Basic principles of organic chemistry. Modern structural concepts, the effect of structure on physical and chemical properties, reactions and their mechanisms and application to syntheses. (3 hr. lec.) (Students may not receive credit for CHEM 133, 134, and for CHEM 131.)

134. **Organic Chemistry.** I, II. 3 Hr. PR: CHEM 16 or 18; CHEM 135 or concurrent enrollment in CHEM 136. Cont. of CHEM 133. (3 hr. lec.)

135. **Organic Chemistry Laboratory.** I, II. 1 Hr. PR or Conc.: CHEM 133. Fundamental organic reactions and the preparation of organic compounds. (3 hr. lab.)

136. **Organic Chemistry Laboratory.** I, II. 1 Hr. PR: CHEM 133, 135 and 134, or concurrent enrollment in CHEM 134. Continuation of CHEM 135. (3 hr. lab.)

141. **Physical Chemistry: Brief Course.** II. 3 Hr. PR: A grade of C or better in CHEM 16 (CHEM 115 if CHEM major.) MATH 16, and PHYS 2 or 12. 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 246 and 248 and for CHEM 141.)

142. **Experimental Physical Chemistry.** I, II. 1 Hr. PR or Conc.: CHEM 141 or 246; CHEM 115, or CHEM 131, or CHEM 135. Laboratory work in physical chemistry designed to accompany CHEM 141. (One 3-hr. lab.)

142. **Undergraduate Research.** I, II. 1-3 Hr*. (May be repeated for credit.) PR: Written consent and a 3.0 grade-point average in chemistry courses. Individual investigations under supervision of an instructor. (3-9 hr. lab.)

144. **Honors Course.** I, II. 1-3 Hr*. (May be repeated for credit.) PR: Written consent and at least a 3.5 average in chemistry courses taken in the department. Research for students in the departmental honors program. Thesis required.

201. **Chemical Literature.** I. 1 Hr. PR: CHEM 134 and CHEM 141 or 246. Study of techniques for locating, utilizing, and compiling information needed by the research worker in chemistry. (1 hr. lec.)

202. **Selected Topics.** I, II. 1-3 Hr. PR: Written consent and 2.0 CHEM GPA. Individual instruction under supervision of a faculty member.

203. **Undergraduate Seminar.** II. 1 Hr. PR: CHEM 201. 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.)
210. **Instrumental Analysis.** II. 3 Hr. PR: CHEM 115 and physical chemistry. Lectures and demonstrations. Fundamentals of instrumental methods applied to chemical analysis: electrochemistry, spectroscopy, mass spectrometry, and chromatography. (2 hr. lec., 1 hr. demonstration.)

211. **Intermediate Analytical Chem.** I. 3 Hr. PR: CHEM 115 and Physical Chem. Concepts underlying modern analytical procedures and their application to the solution of contemporary problems; presented at the intermediate level. (3 hr. lec.)

212. **Environmental Chem.** II. 3 Hr. PR: CHEM 115, 134, and Physical Chem. Study of the nature, reactions, transport, and fates of chemical species in the environment. (2 hr. lec., 1 hr. demonstration.)

213. **Instrumental Analysis Lab.** I. 3 Hr. PR: CHEM 210. Practical application of modern instrumental methods to problems in chemical analysis. (3 hr. lab.)

222. **Intermediate Inorganic Chem.** I. 3 Hr. PR: Physical Chem. Structure, bonding, and reactivity of the compounds of main-group and transition metal elements. Molecular structure and symmetry, solid state chemistry, ligand field theory, and coordination chemistry. (3 hr. lec.)

223. **Inorganic Synthesis Lab.** II. 2 Hr. PR: CHEM 222. 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.)

235. **Mthds. of Structure Dtmn.** I. 4 Hr. PR: CHEM 134 and 136. Use of chemical methods for the structural elucidation of organic compounds. Techniques covered include: UV, IR, NMR, ESR, and Raman spectroscopies, as well as mass spectrometry. Useful to students in chemistry and related fields of research and applied science. (2 hr. lec., two 3 hr. lab.)

237. **Polymer Chemistry.** I. 3 Hr. PR: CHEM 134 and Physical Chem. Methods, mechanisms, and underlying theory of polymerization. Structure and stereochemistry of polymers in relation to chemical, physical, and mechanical properties. (3 hr. lec.)

239. **Organic Syntheses.** II. 3 Hr. PR: CHEM 134, 136. Modern synthetic methods of organic chemistry. (One 1 hr. lec., two 3 hr. lab.)

241. **Chem. Crystallography.** II. 3 Hr. PR or Conc.: Physical chemistry or consent. Applications of X-ray diffraction of crystals to study of crystal and molecular structure. Includes theories of diffraction and crystallographic methods of analysis. (3 hr. lec.)

244. **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.)

246. **Physical Chem.** I. 3 Hr. PR: CHEM 134, MATH 16, and PHYS 12. First course in physical chemistry. Topics include a study of thermodynamics and chemical equilibria. (3 hr. lec.) (Students may not receive credit for CHEM 246 and for CHEM 141.)

247. **Physical Chem. Lab.** II. 1 Hr. PR: CHEM 18 or 115 and CHEM 246. Experimentation illustrating the principles of physical chemistry and offering experience with chemical instrumentation. One 3-hr. lab.

248. **Physical Chem.** II. 3 Hr. PR: CHEM 246 and MATH 17. Continuation of CHEM 246. Chemical kinetics and the structure of matter. (3 hr. lec.) (Students may not receive credit for CHEM 248 and for CHEM 141.)

250. **Bonding and Molec. Structure.** I. 3 Hr. PR: CHEM 248. Introduction to the quantum theory of chemical bonding. Atomic structure, theoretical spectroscopy, predictions of molecular structures and bond properties. (3 hr. lec.)

314. **Mass Spec. Prncips. and Prctc.** II. 3 Hr. PR: CHEM 210, Fundamental principles underlying modern mass spectrometry. Gas phase chemistry related to the formation and fragmentation of ions. The design of instrumental systems for mass spectrometry. Applications of mass spectrometric techniques to multidisciplinary problems of current interest. (3 hr. lec.)

**Child Development and Family Studies (CDFS)**

10. **Families Across the Life-Span.** I, II. 3 Hr. Explores the physical, psychological, and cognitive developmental changes of individuals who are functioning in family systems that change across the life-span.

11. **Child Development Observation Lab.** 1 Hr.

12. **Introduction to Marriage and Family.** I, II. 3 Hr. Explores various dimensions of self-development and personal preference relevant to dating, mate selection, marriage, having children, parenting, divorce, and remarriage.

110. **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.
111. Infant Development. I. 3 Hr. PR: CDFS 10. Developmental characteristics and environmental effects on the child during the prenatal period and the first two years with implications for guidance and care.

112. Early Childhood Development. II, S. 3 Hr. Physical, social emotional, and cognitive development of children from conception to seven years with implications for guidance and care in practical settings.

194. Professional Field Experience. I, II, S. 1-4 Hr. PR: CDFS 10 or CDFS 112 or PSYC 141. A supervised field placement at the West Virginia University Child Development Laboratory where students will gain experience with preschoolers (ages 3-5 years).

212. Adolescent Development. II. 3 Hr. PR: Senior or Graduate standing. 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.)

213. Contemporary Issues in Family Relations. II. 3 Hr. PR: Senior or graduate standing or consent. Study of recent research findings in the major areas of family relationships. Topics include effects of family violence, substance abuse, poverty, and health.

215. 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.

216. Child Development Practicum. I, II. 3-4 Hr. 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.


Chinese (CHIN)
1. Elementary Chinese. I. 3 Hr.

2. Elementary Chinese. II. 3 Hr. Continuation of CHIN 1.

3. Intermediate Chinese. I. 3 Hr. PR: CHIN 1, 2 or equiv.

4. Intermediate Chinese. II. 3 Hr. PR: CHIN 3 or equiv.

190. Teaching Practicum. 1-3 Hr.


194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

Civil and Environmental Engineering (CE)
1. Surveying. 2 Hr.

5. Land Surveying. 4 Hr. PR: MATH 4. Theory and practice with compass, transit, level, and stadia. Computations of area, earthwork volumes, and horizontal and vertical curves; astronomical observations; boundary surveying; and map plotting. (2 hr. lec., 6 hr. lab.)

105. Surveying and Computer Aided Design. I, II. 4 Hr. PR: Sophomore standing. Theory and practice of surveying measurements and calculations for engineering works; coordinate geometry and computer-aided design applications for civil engineering facilities. (3 hr. lec., 3 hr. lab.)

110. Civil Engineering Materials. 4 Hr. PR: MAE 43 or consent. Physical, chemical, and molecular properties of materials commonly employed in civil engineering works. Influence of these properties on the performance and use of materials. Emphasis on laboratory evaluation of properties that control the performance of materials. (3 hr. lec., 3 hr. lab.)

121. Fluid Mechanics for Civil Engineers. I, II. 3 Hr. PR: MATH 18 and MAE 42. Fluid properties, statics, and kinematics; conservation laws for mass, momentum, and mechanical energy; piezometric head and grade lines; dimensional analysis and similarity; weir and orifice flow; introduction to flow in pipes and open channels. (3 hr. lec., 3 hr. lab.)

122. Hydrotechnical Engineering. I, II. 4 Hr. PR: C E 105, C E 121, and ENGR 2. Flow in pipes and pipe networks; pumps; design of water distribution systems; uniform and gradually varied flow; application to the design of sanitary sewer systems; physical and design laboratory exercises. (3 hr. lec., 3 hr. lab.)
132. *Introduction to Transportation Engineering*. 4 Hr. PR: C E 105. 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.)

147. *Environmental Engineering*. I. 3 Hr. PR: Junior standing. Introduction to environmental engineering as applied to water quality, water quality modeling and water and wastewater treatment. (3 hr. lec.)

161. *Structural Analysis* I, II. 4 Hr. PR: MAE 43 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.)

181. *Introductory Soil Mechanics*. 3 Hr. PR: C E 110. Introduction to geotechnical engineering, origin and formation of soils, fundamental soil properties, classification of soils, compressibility and consolidation, shear strength, lateral earth pressures. (2 hr. lec., 3 hr. lab.)

190. *Teaching Practicum*. 1-3 Hr.

191. *Special Topics*. 1-3 Hr.


195. *Seminar*. 1-3 Hr.

196. *Senior Thesis*. 1-3 Hr.

197. *Honors*. 1-3 Hr.

201. *Principles of Boundary Surveying*. 3 Hr. PR: C E 105 or consent. A study of the retacement requirements for 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.)

212. *Concrete and Aggregates*. 3 Hr. PR: C E 110 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.)

213. *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.)

220. *Computational Fluid Mechanics*. 3 Hr. PR: C E 121 and ENGR 2 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.)

225. *Engineering Hydrology*. II 3 Hr. PR: C E 121 or consent. Scientific basis of the hydrologic cycle and its engineering implications; rainfall-runoff process, hydrographs, flood routing, and statistical methods. (3 hr. lec.)

227. *Water Resources Engineering*. II. 3 Hr. PR: C E 225. 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.)

231. *Highway Engineering*. 3 Hr. PR: C E 132 and C E 181. 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 estimate. (2 hr. lec., 3 hr. lab.)

233. *Urban Transportation Planning and Design*. 3 Hr. PR: C E 132 or consent. Principles of planning and design of transportation systems for different parts of the urban social, economic, and environmental compatibilities are emphasized. Evaluation and impact assessment/assessment.

235. *Railway Engineering*. 3 Hr. PR: C E 105. Development and importance of the railroad industry. Location, construction, operation, and maintenance. (3 hr. lec.)

243. *Environmental Science and Technology*. I. 3 Hr. PR: Engineering major. Issues of global atmospheric changes, 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.)

245. *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.)

247. *Environmental Engineering Design*. I. 3 Hr. PR: C E 147. Process design of treatment/remediation systems; comparison of alternatives and preliminary cost evaluation. (2 hr. lec., 3 hr. lab.)
251. **Public Health Engineering.** 3 Hr. PR: Consent. Engineering aspects involved in control of the environment for protection of health and promotion of comfort of humans. Communicable disease control, milk and food sanitation, air pollution, refuse disposal, industrial hygiene, and radiological health hazards. (3 hr. lec.)

261. **Structural Analysis 2.** I, II. 3 Hr. PR: C E 161 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.)

270. **Reinforced Concrete Design.** 3 Hr. PR: C E 110 and C E 161. 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.)

271. **Steel Design.** 3 Hr. PR: C E 110 and C E 161. Design of steel bridge and building systems with emphasis on connections, beams, columns, plastic design, and cost estimates. 3 hr. lec.

274. **Timber Design.** 3 Hr. PR: C E 110 and C E 161. 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.)

275. **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.)

276. **Conceptual Design of Structures.** I. 3 Hr. PR: C E 161 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.)

281. **Foundation Engineering.** I, II. 3 Hr. PR: C E 181. 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.)

283. **Earthwork Design.** 3 Hr. PR: C E 181. 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.)

284. **Geotechnical Engineering Field Methods.** II. 3 Hr. PR: C E 181. Soil exploration and groundwater sampling; in-situ determination of properties using the 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.)

290 A-Z. **Civil Engineering Problems.** 1-6 Hr. PR: Junior or Senior standing. Special topics in various aspects of civil engineering analysis, design, and construction.

**Classics (CLAS)**

1. **Elementary Latin.** I. 3 Hr.


3. **Intermediate Latin.** I. 3 Hr. PR: CLAS 1 and 2, or two years of high school Latin.

4. **Cicero’s Orations.** II. 3 Hr. PR: CLAS 3, or two years of high school Latin.

101. **Greek and Roman Civilization and Culture.** I. 3 Hr.

102. **Greek and Roman Myths.** II. 3 Hr.

109. **Selections from Roman Prose.** I. 3 Hr. PR: CLAS 3 and 4 or consent.

110. **Selections from Roman Poetry.** II. 3 Hr. PR: CLAS 4 and 109 or consent.

113. **Roman Biographers.** I. 3 Hr. PR: CLAS 3 and 4 or consent.

165. **Roman Public and Private Life.** II. 3 Hr.

190. **Teaching Practicum.** 1-3 Hr.

191. **Special Topics.** 1-3 Hr.

194. **Professional Field Experience.** 1-18 Hr.

195. **Field Experience.** I, II, S. 1-18 Hr. PR: Consent.

196. **Senior Thesis.** 1-3 Hr.
197. Honors. 1-3 Hr.

201. Roman Novelists. I. (Alternate years.) 3 Hr. PR: CLAS 109, 110, or consent.

202. Roman Comedy. II. (Alternate years.) 3 Hr. PR: CLAS 109, 110 or consent.

235. Roman Epic. I. 3 Hr. PR: CLAS 109, 110, or equiv.

292. Pro-Seminar in Latin or Greek Literature. 1-6 Hr. PR: Consent. Special topics.

Communication Studies (COMM)

11. Principles of Human Communication. I, II, S. 1 Hr. Introduction to the human communication process with emphasis on the principles, variables, and social contexts of communication.

12. Human Communication in the Interpersonal Context. I, II. S. 2 Hr. Introduction to interpersonal communication with emphasis upon application of one-to-one communication in a variety of social contexts.

13. Human Communication in the Small Group. I, II, S. 2 Hr. Introduction to small-group communication with emphasis upon application in a variety of social contexts.


21. Human Communication in a Contemporary Society. I, II, S. 3 Hr. Introduction to principles of communication and decision making in significant issues in a free society. Emphasis on topics such as freedom of speech and press.

60. 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.

61. Communication Theory and Research 2. I, II. 3 Hr. PR: Pre-Communication Studies majors and a ‘C’ or better in COMM 60. Emphasis on social science research; the language research, types of research, sampling, design, measurement, observation, and ethics from a communication perspective.

80. Introduction to the Mass Media. I, II, S. 3 Hr. Critical examination of mass media with special emphasis on ways in which social, economic, and psychological factors influence the structure, functions, and efforts of the media.

105. Special Topics in Human Communication. I, II. 3 Hr. (Repeatable to 6 hr. total.) Topics include communication and conflict resolution, role of communication in negotiation and bargaining, contemporary communication criticism, issues in communication fields, etc.


107. Human Communication and Rational Decisions. 3 Hr. Argumentation, small group, persuasion, and systems theories application to the process and outcome of rational decision making in communication. Some emphasis on critical-rational response to manipulative communication.

108. Nonviolence in Communication Behavior. I, II. S. 3 Hr. Nonviolent resistance as communication behavior. Emphasis on major proponents of and upon learning ways to apply nonviolence in communication behavior.

109. Human Communication in Organizations and Institutions. I, II. S. 3 Hr. Communication processes and problems in business and nonbusiness organizations and institutions with attention to practical application.

110. Advanced Organizational Communication. 3 Hr. PR: COMM 109. Communication in superior/subordinate and peer relationships; emphasis on application of communication theory to complex organizations and organizational contexts.

111. Organizational Communication and Change. 3 Hr. Focuses on communication competencies needed for survival in organizations. Emphasis on communication of change, diffusion of innovations, communication flow, formal/informal communication roles, management communication styles, power, conflict, status, and effective supervisory/subordinate communication.

113. Business and Professional Communication. 3 Hr. PR: COMM 109, 110. 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.

130. Life-Span Communication. 3 Hr. Development of communication from birth through adulthood to later years; study of media, interpersonal relationships, and competence in communication.

131. Human Communication and Language Behavior. I, II. 3 Hr. Introduction to the production and use of language with emphasis on linguistic, psychological, sociological, and developmental perspectives on language in human communication.
133. Interpersonal Communication. I, II, S. 3 Hr. Survey of theoretical and research literature in interpersonal communication. Emphasis on interaction, interpersonal understanding, personal relationships, and self-understanding as outcomes in interpersonal communication.

134. Gender and Communication. 3 Hr. PR: COMM 12 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.

135. Intercultural Communication. 3 Hr. PR: COMM 12 or 14. Examines similarities and differences between cultures with regard to norms, values, and practices in verbal and nonverbal communication. Emphasis on communication in Latin American, Asian, African, and Middle Eastern cultures.

140. 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. Direct interaction with an elderly person is required.

160. Communication Research Methods. 3 Hr. PR: COMM 61. Research methods in human communication and related professional areas with emphasis on understanding and evaluating research procedures. Special focus on practical applications.

161. Directed Studies in Human Communication. I, II. 3 Hr. PR: COMM 61. (Repeatable to 6 hr. total.) Independent study and research in special areas of human communication.

180. Effects of Mediated Communication. I, II. 3 Hr. Messages and characteristics of mass media with emphasis on effects of mass communication on society.


190. Teaching Practicum. 1-3 Hr*. (Repeatable to 6 hr. total.) PR: Consent. Individually supervised experiences in assisting with teaching, tutoring, and/or classroom management projects.

191. Special Topics in Speech Communication. I, II, S. 1-3 Hr*. (Repeatable to 6 hr. total.)

194. Professional Field Experience. Variable credit 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.

195. Field Experiences in Human Communication. 1-3 Hr*. (Repeatable to 12 hr. total.) PR: Communication Studies major and consent.

206. Advanced Study in Nonverbal Communication. I, II. 3 Hr. PR: COMM 106. Functions of nonverbal communication including status, power, immediacy, relationship development, regulation, turn-taking, leakage and deception, intuition, person perception, and emotional expressions.

221. 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.

230. Survey of Rhetorical-Communication Theory. I, II. 3 Hr. A survey of theory in the rhetorical communication context with emphasis upon periods preceding the twentieth century.

Community Health Promotion (CHPR)

50. History and Philosophy of Health Education. 3 Hr. Provides the student with an historical perspective of health education’s development, its present status, and its current philosophical foundations.

70. Health of the Individual. 3 Hr. Examines personal health-related problems in terms of information, services, and action, as they relate to attainment and maintenance of individual health.

71. 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.

101. Elementary School Health Program. 2 Hr. PR: ED P 103 or 105 and junior or senior standing. The organization, educational aspects, and personnel relationships involved in school health services, healthful school living, and health education.

102. Secondary School Health Program. 2 Hr. PR: ED P 103 or 105 and junior or senior standing. The organization, educational aspects, and personnel relationships involved in school health services, healthful school living, and health education.

104. Organization and Administration of the School Health Program. 3 Hr. PR: HLSE 71. The underlying philosophy for the organization, structure, administrative policies and procedures, and legal aspects of the school health program.

Drug and Alcohol Abuse Prevention. 3 Hr. Experiences designed to prevent the development of abuse drug-taking relationships by focusing on psychological variables such as self-esteem, coping skills, and development of support networks.

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.

Computer Engineering (CP E)

1. Introduction to Digital Logic Design. 3 Hr. PR: ENGR 2 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.)

2. Digital Logic Laboratory. 1 Hr. PR; Coreq.: CP E 71. Experiments with digital electronic circuits including number systems, design and application of modern digital circuitry for both combinational and sequential logic circuits.

Microprocessor Systems. 3 Hr. PR: CP E 71. 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.

Microprocessor Laboratory. 1 Hr. PR or Coreq: CP E 110. Machine Language, assembly language and hardware and software interfacing. (This includes editing, linking, and debugging.) Memory, I/O and basic techniques of microprocessor interfacing.

Microcomputer Structures and Interfacing. 3 Hr. PR: CP E 110 and CP E 111. Coreq: CP E 113. 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.

Microprocessor Structures and Interfacing Laboratory. 1 Hr. PR: CP E 110 and CP E 111. Coreq: CP E 112. A microprocessor based single board computer is designed and built. A semester project is required using standard I/O techniques.

Senior Design Seminar. 2 Hr. PR: CP E 110 and CP E 111 and ENGL 2. Selected topics leading to the selection of a project for CPR 181; writing a proposal expressing the intellectual design effort; includes professional development, legal and ethical aspects of engineering. (1 hr. lec., 1 hr. conf.)

Senior Design Project. 3 Hr. PR: CP E 180 and CS 256. Design and construction of a computer engineering project. Emphasis on the professional approach of the analysis and solution of an engineering problem.

Teaching Practicum. 1-3 Hr.

A-Z. Special Topics. 1-3 Hr.

Professional Field Experience. 1-18 Hr.

Seminar. 1-3 Hr.

Senior Thesis. 1-3 Hr.

Honors. 1-3 Hr.

Introduction to Digital Computer Architecture. 3 Hr. PR: MATH 215 and CP E 110 and CP E 111. Control, data, and demand driven computer architecture; parallel processing, pipelining, and vector processing; structures and algorithms for array processors, systolic architectures, design of architectures.

Intro Microelectronics Circuit. II. 3 Hr. PR: EE 56. (VLSI-Very Large Scale Integrated) circuit design, including layout, simulation and performance optimization of basic digital logic functions and combinations of such basic functions into more complex digital system functions. MAGIC CAD tools are used for projects.


Intro to Information Systems. II. 3 Hr. PR: CP E 110. This course will provide the student with background in the principles and practice of digital communications, beginning with early digital voice systems and extending through current systems based on “information” communications, including voice, data and video.

Digital Systems Design. 3 Hr. PR: CP E 71. 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.)

Switching and Automata Theory. 3 Hr. PR: CP E 71 and CP E 110 and MATH 215. Reliable design and fault diagnosis; synchronous and asynchronous sequential machines; finite state machines with automata theory.
284. Real-Time Systems Development. I. 3 Hr. PR: CS 156 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.

291 A-Z. Special Topics in Computer Engineering. I, II, S. 1-3 Hr. PR: Junior or Senior or Graduate standing or consent. Special topics not covered in regularly scheduled courses. Investigation of topics not covered in regularly scheduled courses.

Computer Science (CS)

5. Introduction to Computer Applications. 4 Hr. This course is taught in a hands-on, lab setting. Microcomputer concepts, DOS and Windows, applications including spreadsheet, database management system, the internet, and the world wide web.

15. Introduction to Computer Science. 4 Hr. Programming and program design; simple data types, variables, and expressions; block structures; program modularization through procedures, functions, and packages; repetition and selection through control structures; structured data types, including arrays and records; representative applications. (3 hr. lec., 1 hr. lab.)

16. Introduction to Data Structures. 4 Hr. PR: CS 15. 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.)

26. Discrete Mathematics. 3 Hr. PR: CS 15 and MATH 15. Traditional mathematics such as functions, relations, set theory, and graph theory; applications to computer science; switching circuits, Boolean algebra, and Karnaugh maps. Equiv. to MATH 26.

56. Computer Organization and Assembler Programming. 4 Hr. PR: CS 16. Machine organization, number systems, assembler and machine language, macros, subroutines, and the use of several computational formats. (3 hr. lec., 1 hr. lab.)

76. File and Data Structures. 4 Hr. PR: CS 15. Complex internal data structures including hashing, balanced trees and multilayw trees. Extension of internal data structures to external storage; indexed structures, external sorting and merging, access methods. (3 hr. lec., 2 hr. lab.)

126. Analysis of Algorithms. 3 Hr. PR: CS 26 and STAT 201. Greedy, graph theoretic, divide and conquer, and dynamic algorithms; polynomial time algorithms and NP-completeness.

136. Principles of Programming Languages. 3 Hr. PR: CS 16. 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.

156. Computer System Concepts. 3 Hr. PR: CS 56 or CP E 110. System hardware and software organization, with emphasis on microprocessor systems; operating system concepts, including processes, memory management, and the user interface; elementary network concepts; introduction to UNIX.

176. Introduction to Software Engineering. 3 Hr. PR: CS 16. Techniques and methodologies of software engineering; specification, modeling, requirements analysis and definition, design, quality assurance, testing, reuse, development tools, and environments. 3 hr. lec.

190. Teaching Practicum. I, II, S. 1-3 Hr. (May be repeated for a maximum of 6 hours.) PR: CS 26 and CS 56 and CS 76. Practical classroom experience for undergraduate teaching assistants. Tasks assigned are those designed to provide experience with course design, implementation, evaluation and revision of classroom work.

191 A-Z. Special Topics. I, II, S. 1-3 Hr. PR: CS 26 and CS 56 and CS 76. Advanced study of special topics in computer science.

194. Professional Field Experience. 1-18 hr.

195. Seminar. I, II, S. 1-3 Hr. PR: CS 51. (Total credit applicable toward any Arts and Sciences degrees may not exceed the maximum of 18 hours.) Course for those who wish to work with faculty and field supervisors to design field experiences with planned learning objectives and credit goals.

196. Computer Science Seminar. 1 Hr.


216. Numerical Concepts. 3 Hr. PR: MATH 16. Computer arithmetic, number representation, and errors; locating roots of equations; interpolation; numerical integration and differentiation; numerical solution of initial value problems for ordinary differential equations; solving systems of linear equations; data smoothing.
228. *Discrete Mathematics* 2. II. 3 Hr. PR: CS 126 and MATH 16 or equiv. Applications of discrete mathematics to computer science. Methods of solving homogeneous and non-homogeneous recurrence relations using generating functions and characteristic equations; digraphs to analyze computer algorithms; graph theory and its ramifications to computer algorithms. (Equiv. to MATH 228.)

236. *Compiler Construction*. 3 Hr. PR: CS 136. 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.

246. *Automata Theory*. 3 Hr. PR: CS 126. Introduction to formal languages, grammars, and automata; regular expressions and finite automata, context-free languages and push down automata, context-sensitive languages and linear-bounded automata, and Turing machines and recursively enumerable languages.

256. *Operating Systems Structures*. 3 Hr. PR: CS 156. 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.)

258. *Advanced Operating Systems*. 3 Hr. PR: CS 256. Operating system topics not covered in CS 156 or CS 256: reliability and security, system management, and virtual machine structures; introduction to distributed and realtime systems; emphasis on design issues faced by actual systems.

266. *Computer Organization and Architecture*. 3 Hr. PR: CS 156. 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.

267. *Microprocessor Structures*. 3 Hr. PR: CS 156. Typical microprocessor system including OS architecture, assembly language programming, and interfacing capabilities.

268. *Data and Computer Communications*. 3 Hr. PR: CS 156. Introduction to fundamental concepts and principles of data and computer communications; digital data communication techniques, multiplexing, switching, LANs and WANs, and protocols and architecture.

272. *Senior Project*. I, II. 1-6 Hr. PR: CS 176. Design and implementation of a software development project under the supervision of a computer science faculty member. Emphasis will be on requirements, specification, analysis, testing and maintenance.


278. *Database Design and Theory*. 3 Hr. PR: CS 176. Relational data model using SOL and the relational algebra; Semantic Data Modeling using the ER model, relational database design theory.

286. *Introduction to Artificial Intelligence*. 3 Hr. PR: CS 176. 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.

288. *Introduction to Computer Graphics*. 3 Hr. PR: CS 76. Overview of I/O hardware, elements of graphics software, fundamental algorithms, two-dimensional viewing and transformations, design for interaction, and introduction to three-dimensional concepts.


296. *Senior Project*. I, II. 1-6 Hr. PR: CS 176. Design and implementation of a software development project under the supervision of a computer science faculty member. Emphasis will be on requirements, specification, analysis, testing and maintenance. (May be repeated a total of 1-6 hours.)

**Curriculum and Instruction (C&I)**

Note: Some C&I courses are being phased out and replaced by new Education (EDUC) courses as part of the revised teacher preparation program.


125. *The Teaching of Foreign Languages*. I, II. 3 Hr. Methods and materials in the secondary school. (Also listed as LANG 221.)


160. *Vocational Agriculture*. I, II. 3 Hr. Methods and materials of high school teaching. (Also listed as AGED 160.)

166. *Art Education in the Secondary School*. II. 3 Hr. (Also listed as ART 166.)
167. *Materials and Methods in Elementary School Music.* I, II. 3 Hr. (Also listed as MUSC 151.)

168. *Methods of Teaching Music Education.* I, II. 3 Hr. Methods and materials in secondary school music. (Also listed as MUSC 152.)

174. *Methods of Teaching Physical Education.* I, II. 3 Hr. Methods of teaching physical education. (Also listed as PET 133.)

175. *Methods of Teaching Home Economics.* I, II. 3 Hr. Methods and materials of high school teaching. (Also listed as HEED 175.)

190. *Teaching Practicum.* 1-3 Hr.

191. *Special Topics.* 1-3 Hr.

194. *Professional Field Experience.* 1-18 Hr.

195. *Seminar.* 1-3 Hr.


197. *Honors.* 1-3 Hr.


211. *Early Childhood Education 2.* I, II, S. 3 Hr. PR: C&I 210. 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 group 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.


214. *Creative Experiences in Early Childhood.* II. 3 Hr. PR: EDUC 100 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.

216. *Early Language and Communication Experiences.* I. 3 Hr. PR: EDUC 100 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.

218. *Management of Preschool Education.* II. (Alternate years.) 3 Hr. PR: EDUC 100 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.

224. *Approaches to Teaching Language.* II. 2 Hr. PR: LING 1 and ENGL 2. 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.

225. *Approaches to Teaching Language.* 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.

280. 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.


**Dance (DANC)**

7. *Intermediate Jazz Dance.* I, II. 1 Hr. PR: DANC 6 or consent. Further development of jazz technique and appreciation of jazz as an American art form.

9. *Ballet 2.* I, II. 1 Hr. PR: DANC 4 or equiv. Ballet vocabulary with emphasis on barre work and adagio and allegro technique.

11. *Folk Dance.* I, II. 1 Hr.
12. **Tap Dance 1.** I, II, S. 1 Hr. Introduction to tap dance technique, including study of basic tap vocabulary, fundamental rhythms, locomotor movements and tap styles.

13. **Tap Dance 2.** I, II, S. 1 Hr. PR: DANC 12. Expansion and development of the basic tap technique and vocabulary introduced in DANC 12. Introduction to Irish riffs, pull-backs, waltz, tap, basic traveling steps, and standard audition material.

20. **Advanced Modern Dance.** I, II. 1 Hr. PR: Consent.

30. **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.

35. **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.

36. **Introduction to Ballet.** I, II, S. 2 Hr. Simple ballet techniques, positions, basic barre work, and motor combinations will be developed.

37. **Ballroom Dance.** I, II. 1 Hr. Introduction to popular ballroom dancing. Styles will range from fox trot, waltz, and swing to basic Latin dances.

38. **Technique and Composition 1.** I. 2 Hr. PR: DANC 35. 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.

39. **African Dance.** I, II. 2 Hr. Exploration of the culture and technique of African dance.

70. **Elementary Ballet.** I, II. 2 Hr. PR: DANCE 35,36. Technique of classical theatrical dancing. Includes barre exercises, port de bras, adage combinations, and center practice in jumping and tours. A theoretical knowledge, as well as technical achievement, is stressed.

73. **Advanced Ballet.** I, II. 2 Hr. PR: DANCE 70. 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. 8 hr. credit.) Fundamentals will also be developed.

82. **Elementary Jazz.** I, II. 2 Hr. PR: DANC 35. 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.

83. **Intermediate Jazz.** II. 2 Hr. PR: DANC 82. Continuation of jazz dance techniques and concepts with an emphasis on jazz isolations, polyrhythms, and syncopated movement sequences; continued persistence in the development of the body as an instrument of expression.

85. **Advanced Jazz.** I. 2 Hr. PR: DANC 83. In-depth exploration of both traditional and contemporary jazz techniques and styles; continues progression towards a more advanced level of technical skill as developed and utilized through this specific dance technique.

87. **Technique and Composition 2.** I, II. 2 Hr. PR: DANC 38. 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.

88. **Intermediate Modern Technique.** II. 2 Hr. PR: DANC 35 or 38. 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.

90. **Advanced Modern Technique.** II. 2 Hr. PR: DANC 35, 38 or 88. Advanced tutorial techniques relating advanced theories and individual study in the design of technique, style, and compositional form.

102. **Choreography 1.** I, II. 2 Hr. PR: DANC 35. 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.

103. **Choreography 2.** I, II. 2 Hr. PR: Dance 102. An in-depth concentration and continuation of Choreography 1. Solo, duo, and group ensembles will enhance analysis and critical appraisal. Production of student works will be included.

171. **Creative Dance for Educators.** I, II. 2 Hr. PR: DANC 35. Specific learning experiences for the future of dance education and competencies to be achieved for children's dance. Grades K-12. Integration of movement experience with other academic subjects and various cultural heritage emphasized.

191 A-Z. **Special Topics.** I, II. 1-3 Hr. Studies in dance history, choreography, production/performance. Subject matter and number of sections vary from semester to semester. (May be repeated for max. 6 hr. credit.)

195. **Dance Internship.** I, II. 1-3 Hr. Professional internship arranged on occasion through the program coordinator.
196. Senior Thesis. 3 HR.

197. Honors. 3 HR.

198 A-Z. Dance Practicum. I, II, S. 1-3 hr. Dance performance and/or teaching practicum. (May be repeated for max. 10 hr. credit).

201. Rhythm in Dance. I. 3 hr. PR: DANC 103 and (DANC 73 or DANC 88). An exploration of dance technique in its relation to musical compositions and principles of choreography; developing an aesthetic and critical awareness of these principles as they are displayed in dance works.

202. Advanced Choreography. II. 3 hr. PR: DANC 103. 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.

203. 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.

204. History and Philosophy of Dance. II. 3 hr. Cultural survey of dance as an expression of the society it represents; philosophy of dance; relation of dance to other art forms; dance as an educational experience.

210. Theatre Dance 1. I, 2 hr. PR: DANC 70. Develops a basic knowledge of choreographed movement in the musical theatre dance idiom. Includes a study of musical dance forms for the actor, and Broadway dance vocabulary and styles. (Also listed as THET 210.)

211. Theatre Dance 2. II. 2 hr. PR: DANC 210 and THET 210. Comprehensive study of representative musical theatre dance styles, relative to period (1900 to present) and ethnic derivation. Includes study of isolationary movement and principles of classical dance applicable to the Broadway idiom. (Also listed as THET 211.)

Economics (ECON)

51. The Economic System. 3 Hr.


55. Principles of Economics. I, II. 3 HR. PR: ECON 54 Introductory macroeconomic analysis. Aggregate demand and supply, saving, investment, the level of employment and national income determination, monetary and fiscal policy.

110. Comparative Economic Systems. I or II. 3 HR. PR: ECON 54 and 55. Structure and processes of existing economic systems including capitalism, planned socialism, and market socialism. Problems encountered by economies in transition from planned socialism to capitalism.

125. Elementary Business and Economics Statistics. I, II, S. 3 HR. PR: Sophomore standing and (MATH 3 with grade "C" or better) or (MATH 14 with grade "C" or better) or MATH 15 or MATH 16 or MATH 28. Basic concepts of statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression and correlation with emphasis on business and economic examples. (Equiv. to STAT 101.)

130. Money and Banking. I, II. 3 HR. PR: ECON 54, 55. The U.S. monetary and banking system and its functional relationship to the economic system; monetary theory and policy.

190. Teaching Practicum. 1-3 Hr.

191 A-Z. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

200 A-Z. Special Topics. I, II, S. 1-4 Hr. PR: ECON 54 and ECON 55. Special topics relevant to economics. (Maximum of nine semester hours in any or all courses numbered 200, offered by the College of Business and Economics may be applied toward the bachelor’s and master’s degrees.)

211. Intermediate Micro Theory. I, II. 3 HR. PR: ECON 54. 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.

212. Intermediate Macro Theory. I, II. 3 HR. PR: ECON 54 and ECON 55. 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.
213. *Economic Development*. I or II. 3 Hr. PR: ECON 54 and ECON 55. The problems, changes, and principal policy issues faced by non-industrialized countries.

216. *History of Economic Thought*. I or II. 3 Hr. PR: ECON 54 and ECON 55. Economic ideas in perspective of historic development.

220. *Introduction to Mathematical Economics*. I or II. 3 Hr. PR: ECON 54 and ECON 55 and (MATH 128 or MATH 15 or MATH 16.) 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.

225. *Applied Business and Economic Statistics*. I, II. 3 Hr. PR: ECON 125 or STAT 101. Continuation of ECON 125. 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.


241. *Public Economics*. I or II. 3 Hr. PR: ECON 54 and ECON 55. 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.

245. *Government and Business*. I or II. 3 Hr. PR: ECON 54 and ECON 55. Examination of market structure, conduct, and performance. Analysis of market regulation including antitrust laws and regulation of monopolies.

246. *Transportation Economics*. 3 Hr. PR: ECON 54 and ECON 55. 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.

250. *International Economics*. I or II. 3 Hr. PR: ECON 54 and ECON 55. Development of trade among nations; theories of trade; policies, physical factors, trends, barriers to trade. Determination of exchange rates. Open economy macroeconomics.

255. *Regional Economics*. I. 3 Hr. PR: ECON 54 and ECON 55. Analysis of the regional economy's spatial dimension, emphasizing interregional capital and labor mobility, the role of cities, objectives and issues of regional policy, lagging regions and Appalachia, growth poles, and regional growth and income distribution.

257. *Urban Economics*. I or II. 3 Hr. PR: ECON 54 and ECON 55. 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.

260. *Labor Economics*. I or II. 3 Hr. PR: ECON 54 and ECON 55. 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.

270. *American Economic History*. I or II. 3 Hr. PR: ECON 54 and ECON 55. Central issues in the development of the American economy.

297. *Readings in Economics*. I, II, S. 1-6 Hr. PR: ECON 54 and ECON 55 and departmental approval. Students will develop and carry out a program of specialized readings under the supervision of a cooperating instructor.

**Educational Psychology (ED P)**

260. *Media and Microcomputers in Instruction*. I, II. 3 Hr. The effective operation and educational uses of educational media including microcomputers. Hands-on experience with equipment, and in designing materials for an instructional unit incorporating media and/or microcomputers.


**Education (EDUC)**

1. *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.

100. *Professional Inquiry in Education*. 3 Hr. PR: EDUC 1 and ENGL 1 and ENGL 2. 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.
101. Learning in Educational Settings 1. I. 2 Hr. PR: Admission to the major, grade of “C” or better in EDUC 100 and PSYC 1 and one course in human development. Examination and utilization (with initial emphasis upon examination) of learning models and paradigms from behavioral and cognitive perspectives; consideration of learner characteristics, attitudes, motivations, thinking processes, and subject matter content affecting student learning.

102. Learning in Educational Settings 2. II. 2 Hr. PR: Admission to the major, grade of “C” or better in both EDUC 101 and EDUC 111. Analysis and application of learning models and paradigms from behavioral and cognitive perspectives; consideration of learner characteristics, attitudes, motivations, thinking processes, and subject matter content affecting student learning.

111. Practicum 1. 1 Hr. PR: Admission to the major, grade of “C” or better in EDUC 100 and EDUC 101 Conc. Application of models and paradigms of learning in content area through tutoring of individuals and small groups in an assigned public school site.

112. Practicum 2. 1 Hr. PR: Admission to the major. Grade of “C” or better in EDUC 111 and EDUC 102 Conc. Application of paradigms of learning in content area through tutoring of individuals and small groups in an assigned public school site.

197. Honors. 1-3 Hr.

200. Instructional Design and Evaluation. 3 Hr. PR: Admission to the major and a grade of “C” or better in both EDUC 102 and EDUC 112. Examination and demonstration of teacher behaviors required to plan classroom instruction, assess student learning, and evaluate instruction; emphasis on instruction, assessment, and evaluation to accommodate a wide range of student needs.

201. Managing and Organizing Learning Environments. 3 Hr. PR: Admission to the major and a grade of “C” or better in EDUC 200 and EDUC 210 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.)

205. Issues in Middle School Education. I, II. 2 Hr. PR: EDUC 102. 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.

210. Practicum 3. 2 Hr. PR: Grade of “C” or better in EDUC 112 and EDUC 200 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.

211. Practicum 4. 2 Hr. PR: Grade of “C” or better in EDUC 210 and EDUC 201 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.

212. Professional Internships. 12 Hr. PR: Grade of “C” or better in EDUC 211. Achievement of required grade point average in prerequisite course work, satisfactory completion of State Board of Education examination requirements, recommendation of the faculty, acceptance in the assigned public school site, and positive evidence that the applicant meets requirements of physical condition, emotional stability, and communication competence necessary for the performance of duties as a teacher. Interns are expected to avoid other employment commitments. Full-time professional internship in public school teaching: satisfactory completion is required for recommendation for professional licensure and graduation with an education degree. (First offered fall, 1999.)

214. Promoting Creative Expression in Elementary Classrooms. II. 3 Hr. PR: EDUC 210. Includes an examination of the 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.

230. Mathematics Methods for Elementary Teachers. I. 3 Hr. PR: EDUC 112. 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.

240. Elementary-Early Childhood Science Methods. I. 3 Hr. PR: EDUC 112. 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.

250. Issues and Methods for Teaching Elementary Social Studies. II. 3 Hr. PR: EDUC 210. 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.

260. Foundations of Language and Literacy. II. 4 Hr. PR: EDUC 100 and EDUC 111. 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.

261. Promoting Literacy Connections. I. 4 Hr. PR: EDUC 260. 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.
Electrical Engineering (E E)

21. Introduction to Electrical Engineering. 3 Hr. PR: ENGR 2 and MATH 15. 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.

22. Introduction to Electrical Engineering Laboratory. 1 Hr. PR/Conc: EE 21. Design and experimental exercises in basic electrical circuits. Use of the digital computer to solve circuit problems. (3 hr. lab.)


25. Electrical Circuits Laboratory. 1 Hr. PR/Conc: E E 24. 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.)

56. Digital Electronics. 3 Hr. PR: E E 21 and CPE 71. 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.)

57. Digital Electronics Laboratory. 1 Hr. PR: Coreq: E E 56. 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.

101. Introduction to Electrical Power Devices and Systems. 3 Hr. PR: Junior or senior standing in engineering (not open to Electrical Engineering majors.) Fundamental principles of electric and magnetic properties. DC and AC circuits. Application to single- and three-phase systems, motor control, circuit protection, safety. (3 hr. lec.)

102. Basic Electrical Laboratory. 1 Hr. Coreq: E E 101. Laboratory experiments in measurement of electrical quantities and circuit parameters. (3 hr. lab)

103. Introduction to Electronic Instrumentation. 3 Hr. PR: Junior or senior standing in engineering. (Not open to Electrical Engineering majors.) Electrical fundamentals, analog and digital devices and circuits, communication and telemetry, measurement instruments and techniques. (3 hr. lec.)

104. Instrumentation Laboratory. 1 Hr. Coreq.: E E 103. Laboratory experiments demonstrating the characteristics of electron devices and the performance of digital and analog instrumentation and control systems. (3 hr. lab.)

124. Signals and Systems 1. 3 Hr. PR: MATH 18 and E E 24. Introduction to linear systems 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.)

126. Signals and Systems 2. 3 Hr. PR: E E 124. Statistical description of nondeterministic signals, correlation functions and spectral density. Filtering of random signals and noise. Concepts applied to communication and feedback systems. (3 hr. lec.)

127. Signals and Systems 1 Laboratory. 1 Hr. PR/CONC: E E 126. Laboratory experiments in measurement of electrical system and signal parameters. (3 hr. lab.)

128. Systems Theory. 3 Hr. PR: E E 124. Analysis of continuous and discrete time systems described by transfer functions of state variables. Block diagrams, stability, feedback control. Discrete state space models, difference equations, and transforms. (3 hr. lec.)

130. Electromechanical Energy Conversion. 3 Hr. PR: E E 24 and E E 25 and E E 140. Fundamentals of electromechanical energy conversion, transformers and rotating machinery. (3 hr. lec.)

131. Introduction to Power Systems. 3 Hr. PR: E E 124 and E E 127 and E E 130 and E E 135. Analysis of power system elements connected together as an integrated system for the transmission and distribution of electric power. Load flow, symmetrical components. (3 hr. lec.)

135. Energy Conversion Laboratory. 1 Hr. Coreq: E E 130. DC motor and generator performance and characteristics, single-phase transformer, AC machines, synchronous machine and induction motor performances and characteristics. (3 hr. lab.)

136. Power Systems Laboratory. 1 Hr. Coreq.: E E 131. The power system simulator is used for experiments dealing with generation, transmission, distribution, and protection. The aspect of interconnection with other systems is explored. (3 hr. lab.)

140. Electric and Magnetic Fields 1. 3 Hr. PR: MATH 18 and PHYS 12. Introduction to vector analysis, orthogonal coordinate systems, Maxwell’s equations, scalar and vector potentials, electric and magnetic static fields, boundary-value problems, Laplace’s and Poisson’s equation, electromagnetic static fields. (3 hr. lec.)
141. **Electric and Magnetic Fields** 2. 3 Hr. PR: E E 140. Plane waves in lossless and dissipative media, polarization, reflection and refraction of plane waves, lossless and dissipative transmission lines, waveguides, radiation and antennas. (3 hr. lec.)

143. **Electromagnetic Field Theory**, 3 Hr. PR: MATH 18 and PHYS 12. Introduction to vector analysis, orthogonal coordinate systems, Maxwell's equations, scalar and vector potential, electric and magnetic fields, plane waves, reflection and refraction of plane waves, transmission lines. (3 hr. rec.)

151. **Semiconductor Electronics**, 3 Hr. PR: E E 24 and E E 25 and PHYS 12 and MATH 18. Physical properties of semiconductor electronic devices including diodes, bipolar transistors, MOS/CMOS transistors. Optoelectronic devices such as LEDs and lasers. Design of digital circuits using silicone CMOS technology. (3 hr. lec.)

153. **Introduction to Diodes and Transistors**, 1 Hr. PR: E E 24 and 25 and PHYS 12 and MATH 18. The study of junction diodes and bi-polar and field-effect transistors, their terminal characteristics, and circuit behavior.


157. **Digital Electronics Laboratory**, 1 Hr. Coreq.: E E 156. Design, fabrication, and measurement of digital electronic circuits. Use of discrete devices, integrated logic, display devices, and timer circuits. Study of A/D and D/A circuits and interfaces. (3 hr. lab.)

158. **Analog Electronics**, 3 Hr. PR: E E 124 and E E 127 and E E 151 or E E 56. Electronic devices in analog circuits. Small-signal and graphical analysis of BJT and FET circuits; frequency response, feedback, and stability. Linear and nonlinear operational amplifier circuits. Power amplifiers and power control by electronic devices. (3 hr. lec.)

159. **Analog Electronics Laboratory**, 1 Hr. Coreq.: E E 158. 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.)

180. **Senior Design Seminar**, 2 Hr. PR: Penultimate semester. Design methodology, including specifications, reliability, design optimization, patent searching, cost estimating, project planning and scheduling, and design.

181. **Senior Design Project**, 3 Hr. PR: E E 130, 156, 158, 180 or consent. Detailed design and execution of an electrical engineering project. Emphasis is placed on the professional approach to the analysis and solution of an engineering problem. Other topics include professional development, legal and ethical aspects of engineering.

190. **Teaching Practicum**, 1-3 Hr.

191. **Special Topics**, 1-3 Hr.

194. **Professional Field Experience**, 1-18 Hr.

195. **Seminar**, 1-3 Hr.

196. **Senior Thesis**, 1-3 Hr.

197. **Honors**, 1-3 Hr.

208. **Power Electronics**, 3 Hr. PR: E E 130. 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.)

216. **Fundamentals of Control Systems**, 3 Hr. PR: E E 124, Introduction to classical and modern control; signal flow graphs; state-variable characterization; time-domain, root-locus, and frequency techniques; stability criteria. (3 hr. lec.)


230. **Electrical Power Distribution Systems**, 3 Hr. PR: E E 131 and E E 136 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.)

231. **Power Systems Analysis**, 3 Hr. PR: E E 131 and E E 136 or consent. 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.)

236. **Introduction to Power Electronics**, 3 Hr. PR: E E 130 and E E 158 and E E 159 (concurrently) 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.)
245. Microwave Circuits and Devices. 3 Hr. PR: E E 141. UHF transmission line theory, impedance matching techniques and charts, general circuit theory of one port and multiports for waveguiding systems, impedance and scattering matrices, wave guide circuit elements, microwave energy sources. Course will be supplemented by laboratory problems. (3 hr. lec.)

248. Fiber Optics Communications. 3 Hr. PR: E E 126 and E E 141 and E E 151. 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.)

251. Noise and Grounding of Electronic Systems. 1 Hr. PR: E E 158 and E E 159 or consent. Analysis of extrinsic and intrinsic noise in electronic circuits. Design techniques to reduce or eliminate noise. (1 hr. rec.)

252. Operational Amplifier Applications. 3 Hr. PR: E E 158 and E E 159. 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.)

254. Introduction to Microfabrication. I. 3 Hr. PR: E E 151 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.

255. Fundamentals of Photonics. I, II. 3 Hr. PR: E E 141 and E E 151 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.

257. Transistor Circuits. 3 Hr. PR: E E 158 and E E 159 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.)

264. Introduction to Communications Systems. 3 Hr. PR: E E 126. 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.)

266. Digital Signal Processing Fundamentals. 3 Hr. PR: E E 126 and E E 127 and E E 156 and E E 157. 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 ICs. (3 hr. lec.)

269. Intro to Digital Image Processing. I. 3 Hr. PR: E E 124 and E E 127. Introduction to the vision process and fundamental mathematical characterization of digitized images, 2-dimensional transform methods used in image processing, Histogram analysis and manipulation, image filtering techniques, image segmentation and morphology.

280. Electrical Problems I. 1-3 Hr.

281. Biomedical Electrical Measurements. 2 Hr. PR: E E 158 and E E 159 or consent. Biomedical instrumentation for human subjects. Origin and characteristics of biological electrical signals. Instrument design requirements and detailed analysis of cardiac support and intensive-care monitoring equipment. (2 hr. lec.)

287. Electric Vehicle Design. II. 2 Hr. PR: E E 21 or E E 103. 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.

291 A-Z. Special Topics in Electrical Engineering. 1-3 Hr. PR: Junior, Senior, or Graduate standing or consent. The investigation of advanced topics not covered in regularly scheduled courses. (1-3 hr lec.)

Engineering, Mining (MinE)

101. Mine Surveying. I. 3 Hr. Principles of surveying; field experience in underground and surface surveying with map work and calculations.

105. Underground Mining Systems. II. 3 Hr. PR: GEOL 1. MinE 105. Underground Mining Systems. II. 3 Hr. PR: GEOL 1. MinE 105. 1. Underground mining methods and equipment for bedded deposits and ore bodies; description and selection of mining methods, equipment requirements and selection, equipment design, and equipment design, and operational analysis.


190. Teaching Practicum. 1-3 Hr. MinE 190.

191 A-Z. Special Topics. I, II. 1-3 Hr. PR: Junior or senior standing, consent. (Undergraduate majors only.) Selected fields of study in mining engineering.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr. MinE 197. Honors. 1-3 Hr.


205. Coal Mining. I. 3 Hr. PR: Junior standing or consent. (Not open to mining engineering students.) Introduction to elements of coal mining.


207. Longwall Mining. II. 3 Hr. PR: MinE 105. Elements of MinE 207. Longwall Mining. II. 3 Hr. PR: MinE 105. Elements of longwall mining including panel layout and design longwall mining including panel layout and design considerations, strata mechanics, powered supports, coal considerations, strata mechanics, powered supports, coal cutting by shearer or plow, conveyor transportation, and cutting by shearer or plow, conveyor transportation, and face move. Face moves.

211. Rock Mechanics and Ground Control. I. 4 Hr. PR: EM 105 and MinE 106 and MAE 41 and MAE 43 and GEOL 151. Rock properties and behavior, in situ stress field, mine behavior, mine layout and geological layout and geological effects; design of entry, pillar, and bolt system, convergence and stress measurements, surface subsidence, roof control plan, slope stability, and surface subsidence, and laboratory sessions.


224. 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.

231. Mine Environmental Engineering. II. 3 Hr. PR: MinE 105 MinE 231. PR or Coreq: MAE 101. Engineering MAE 114; PR or CONC: MAE 101. Engineering principles, purposes, methods, and equipment applied to the underground principles, environmental control including ventilation, illumination, and dust and noise control.

242. Mine Health and Safety. II. 3 Hr. PR: MinE 105, 106. EM 242. 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.

243. Industrial Safety Engineering. I. 3 Hr. PR: Junior standing or consent. Problems of industrial safety and accident prevention, laws pertaining to industrial safety and health, compensation plans and laws, and industrial property protection.

271. Mine and Safety Management. I. 3 Hr. PR: MinE 105, 106, MinE 271. Economic, governmental, social, regulatory, cost, labor, environmental, and safety aspects of mining as related to the management of a mining enterprise.


286. Fire Control Engineering. II. 3-4 Hr. PR: Senior standing. Aspects involved in the control from fire, explosion, and other related hazards. Protective considerations in building design and construction. Fire explosive protection organization including fire detection and control. (3 lec. and/or 3 hr. lab.)

287. Applied Geophysics for Mining Engineers. I. 3 Hr. PR: (MinE 105 and MinE 106 and PHYS 12 and GEOL 151) or consent. Origin of the universe and the planets, heat and age of the earth. Application of the science of geophysics in the location and analysis of earthquakes and in prospecting for oil and minerals.

291. Mine Plant Design. II. 3 Hr. PR: Senior standing. Layout, analysis and detailing of the major mine installations, and support facilities. Locations include: the surface plant, shaft and slope stations, section centers. Systems dealt with are bulk handleing, power, ventilation, supplies, water, and personnel.

295. Mine Systems Design. I. 3 Hr. PR: (MinE 105 and MinE 106), consent. Each student selects and designs a mine subsystem under specified conditions, including extraction, transportation, ventilation, roof control, exploration, plant design, surface facilities, etc. (2 hr. lec., 1 hr. lab.)

296. Mine Design. II. 4 Hr. PR: Senior standing, final semester. Comprehensive design problem involving underground mining developments, surface plant or both, as selected by the student in consultation with instructor. Preparation of a complete report on the problem required, including drawing, specifications, and cost analysis.
English As a Second Language (ESL)
190. Teaching Practicum. 1-3 Hr.


194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

English Language and Literature (ENGL)


Courses in language studies: ENGL 111, 112, 113, 210, 211.


Special Offerings: ENGL 190, 191, 195, 197, 290, 392.

1. 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 freshman who score 18 or below on the ACT English (or 420 or below on the SAT verbal) may not register for English 1 until they demonstrate requisite skills on the English Department's Writing Placement Test. Because of anticipated revisions in SAT and ACT scores, these scores are subject to change. Students should contact the English department for more current information.)

2. Composition and Rhetoric. I, II, S. 3 Hr. PR: ENGL 1 or equiv. Writing college-level research papers based on argumentative models. Precision in footnotes, bibliographies, usage, punctuation, and stylistic assumed. Required of all bachelor's degree candidates unless the requirement is waived under regulations prevailing at the time of admission.


30. Themes and Topics in Literature. I, II, S. 3 Hr. Introduction to literature for non-majors. Themes vary, e.g., Faces of Evil, Nature and Literature, Youth and Maturity. All sections are appropriate for non-majors. (Not acceptable toward any departmental requirements for English majors.)


40. Introduction to Folklore. I, II, S. 3 Hr. Recognition, collection, and documentation of folklore materials.


81. Literature of Native America. I, II, S. 3 Hr. A historical survey of Native American prose, poetry, song, and story from the beginning to the present.


106. Journal Writing. I, II, S. 3 Hr. PR: ENGL 1 and ENGL 2. Practice in writing a sequence of structured exercises designed to enhance creativity and awareness. Students also study the theories on which these exercises are based and apply them to the autobiographical writings of others.

108. Advanced Composition. I, II, S. 3 Hr. PR: ENGL 1 and ENGL 2. Composition for students who wish to further develop their expository and argumentative writing skills.

113. *American English*. I, II. 3 Hr. An introduction to language variation in North America and the methodologies used to study it. Both language change and dialect variation are investigated.


115. *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.


125. *World Literature*. I, II. 3 Hr. Selected readings in the works of authors of world literature both ancient and modern.

130. *Biography and Autobiography*. I, II. 3 Hr. Biography and autobiography as a genre; representative works chosen for their literary value and their interest and relevance in contemporary life; figures in the arts, sciences, business, and public life.

131. *American Fiction*. I, II. 3 Hr. Reading of short stories and novels by American authors of the nineteenth and twentieth centuries.


133. *The Short Story*. I, II. 3 Hr. The short story’s structure, history, and contemporary forms.

134. *Modern Drama*. I, II. 3 Hr. World drama from Ibsen to the present.

135. *British and Irish Fiction*. 3 hr. Short stories and novels by representative British and Irish writers.

141. *American Folklore and Culture*. I, II, S. 3 Hr. PR: ENGL 40. Various aspects of folklore from the American Indian, early settlers, the American Negro, the immigrant, and occupational groups. Influence of folklore on American culture.

143. *Modern Continental Novel*. I, II. 3 Hr. Discussion and analysis of continental novels of the twentieth century.

145. *Appalachian Fiction*. I, II, S. 3 Hr. Reading of short stories, novels, and other narratives by Appalachian authors.

150. *Shakespeare*. I, II. 3 Hr. Several of Shakespeare’s most important plays.


172. *Contemporary Literature*. I, II. 3 Hr. An examination of the significant literature written since 1960 in England and America. Poetry, drama, and fiction. Selections will vary depending on the instructor.

175. *Science Fiction and Fantasy*. I, II, S. 3 Hr. A study of the history and nature of science fiction from H. G. Wells to the present, with special attention to those features of prose narration that science fiction shares.

178. *Popular American Culture*. I. 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.


183. *Study of Selected Authors*. I, II, S. 3 Hr. (May be repeated with a change in course content for a maximum of 9 credit hours.) Study of the works of one or more major authors.

186. *African-American Fiction*. I, II. 3 Hr. Reading of novels and short stories by African-American authors from 1890 to the present.

188. *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.

189. *Sexual Diversity in Lit. and Film*. I. 3 Hr. Representation of lesbians, gay men, and bisexuals in literature and film.
190. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant in composition, literature, or business English.


194. Professional Field Experience. I, II, S. 1-18 Hr. PR: Consent. Preamarried 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. (Pass Fail grading.)

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

197. Honors. I, II, S. 1-3 Hr. PR: Consent. Independent reading, study or research.

201. Creative Writing Workshop: Fiction. I, II. 3 Hr. PR: Grade of “B” or higher in ENGL 114. Advanced workshop in creative writing for students seriously engaged in writing fiction.

202. Creative Writing Workshop: Poetry. I, II. 3 Hr. PR: Grade of “B” or higher in ENGL 115. Advanced workshop in creative writing for students seriously engaged in the writing of a major group of poems.

203. Creative Writing Workshop: Non-Fiction. I, II. 3 Hr. PR: Grade of “B” or higher in ENGL 114 or ENGL 115 or ENGL 116. Advanced workshop in creative writing for students seriously engaged in the writing of nonfiction.

208. Scientific and Technical Writing. I, II. 3 Hr. PR: ENGL 1 and ENGL 2. Writing for the scientific and technical professions. Description of a process and a complex idea; feasibility report; analysis of a technological innovation; communications; articles for trade and research journals.

210. Structure of the English Language. I, II. 3 Hr. A detailed investigation into the structure of language in the mind.

211. 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.


223. Modern American Poetics. I, II. 3 Hr. A close study of those poets who have shaped the aesthetics of contemporary American poetry.

232. Literary Criticism. I, II. 3 Hr. Literary criticism from Aristotle to modern times.


236. Tragedy. I, II. 3 Hr. Masterpieces of tragedy from Greek times to modern, with consideration of changing concepts of tragedy and of ethical and ideological values reflected in works of major tragic authors.

240. 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.

241. Folk Literature of the Southern Appalachian Region. I, II. 3 Hr. Traditional literature of the southern Appalachian region, including songs, prose, tales, languages, customs, based on material collected in the region—especially in West Virginia.

245. Studies in Appalachian Literature. I, II. S. 3 Hr. Studies of authors, genres, themes, or topics in Appalachian literature.

250. Shakespeare’s Art. I, II, S. (Alternate years.) 3 Hr. Special studies in Shakespeare’s tragedies, comedies, and/or history plays, with some attention given to his non-dramatic poetry. With emphases varying from year to year, studies may include textual, historical, critical, and dramaturgical-theatrical approaches.

255. 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.

256. Milton. I, II. 3 Hr. All of Milton’s poems and a few selected prose works.

261. Sixteenth Century Prose and Poetry. I, II. 3 Hr. Studies from Caxton to Bacon, from Skelton to Shakespeare.

262. Seventeenth Century Prose and Poetry. I, II. 3 Hr. Studies from Donne to Dryden.

263. Literature of the Eighteenth Century. I, II. 3 Hr. Literature of the period 1660-1744 in relation to social, political, and religious movements of the time.

264. Literature of the Eighteenth Century. I, II. 3 Hr. Continuation of ENGL 263, covering the latter half of the century. May be taken independently of ENGL 263.

265. 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.
266. *American Romanticism*. I, II. 3 Hr. Writings of Ralph Waldo Emerson, Henry David Thoreau, and Nathaniel Hawthorne. A study of the relations of these men to the history of their own time; their contributions to American thought and art.


268. *British and Irish Poetry From the late 19th Century to the Present*. I, II. 3 Hr. Representative poets studied include Yeats, Eliot, Auden, Hughes, Heaney, Hill, and Boland.

271. *Topics in Creative Writing*. II. 3 Hr. (May be repeated for a maximum of 9 Hrs.) Advanced work in creative writing; course content changes with genre: fiction, poetry, non-fiction.

273. *Creative Writing Seminar*. I. 3 Hr. PR: Nine hours of creative writing and consent. Individual projects in creative writing pursued in a workshop setting.


283 A-Z. *Study of Selected Authors*. I, II. 3 Hr. (May be repeated with a change in course content for a maximum of 9 credit hours.) Study of the works of one or more major authors.

288. *Women writers in England and America*. I, II. 3 Hr. Syllabus may vary from year to year to include women writers in a particular country, historical period, or genre; or writing on a particular theme.

290. *Independent Study*. I, II. 1-3 Hr. (With departmental consent, may be repeated for a maximum of 9 credit hours.) PR: Departmental consent. Individual study of literary, linguistic, and writing problems.

293. *Practicum in Teaching Composition*. I. 1 Hr. Designed to give prospective English and language arts teachers supervised practical experiences in individual writing tutorials.

294. *Fiction for Adolescents*. II. 3 Hr. Designed for prospective teachers of English and language arts. Course focuses on recent fiction for adolescents as well as on traditional literature appropriate to the needs, interests, and abilities of youth. Evaluative criteria emphasized.

295. *Approaches to Teaching Composition*. I. 3 Hr. PR: ENGL 108. Coreq: ENGL 293. (May not be taken for both undergraduate and graduate credit.) Surveys attitudes toward and techniques of teaching writing in elementary and secondary schools. Provides experiment in class with methods of teaching writing.

**Entomology (ENTO)**

170. *Forest Pest Management*. II. 4 Hr. PR: FMAN 211 and (BIOL 1 and BIOL 3 and PLSC 52) or BIOL 15 and BIOL 17. Relationship of insects and disease organisms to the forest ecosystem; recognition of agents that affect forest health; management strategies for regulating their damage. (Cross-listed with PPTH 170.)

201. *Apiculture*. II. 3 Hr. PR: BIOL 1 and BIOL 3 and BIOL 2 and BIOL 4. 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 Spring of odd years.

202. *Apiculture Laboratory*. II. 1 Hr. PR or Conc: ENTO 201. 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.)

204. *Principles of Entomology*. I. 4 Hr. PR: BIOL 1 and BIOL 3 and BIOL 2 and BIOL 4 or equiv. Basic course dealing with the anatomy, morphology, physiology, reproduction, systematics, ecology, and management of insects.

210. *Insect Pests in the Agroecosystem*. I. 3 Hr. PR: ENTO 204 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. (2 lec., 1 lab.)

212. *Pest Management*. II. 3 Hr. PR: ENTO 204 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. (3 hr. lec.) (Also listed as ENVP 212.)

**Environmental Microbiology (ENVM)**

141. *General Microbiology*. I, II. 4 Hr. PR: CHEM 15. Introductory morphological, cultural, and physiological characteristics of microorganisms; application of microbiology to agriculture, home economics, and health.

201. *Environmental Microbiology*. II. 4 Hr. PR: ENVM 141 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 201.)

220. *Soil Microbiology*. I. 3 Hr. PR: ENVM 141. 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 220 and ENVP 220.)
Environmental Protection (ENV P)
55. "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.

155. "Environmental Sampling and Analysis. I. 3 Hr. PR: BIOL 1 and BIOL 2 and BIOL 3 and BIOL 4 and CHEM 15 and CHEM 16. 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.


201. "Environmental Microbiology. II. 4 Hr. PR: ENVM 141 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 201.)

212. "Pest Management. II. 3 Hr. PR: ENTO 204 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. 3 lec. (Also listed as ENTO 212.)

220. "Soil Microbiology. I. 3 Hr. PR: ENVM 141. 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 220 and AGRN 220.)

225. "Environmental Soil Management. I. 3 Hr. PR: AGRN 102 and AGRN 103. 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 225.)

251. "Weed Control. I. 3 Hr. PR: PLSC 52 or consent. Fundamental principles of weed control. Recommended control measures for and identification of common weeds. (2 hr. lec, 1 hr. lab.) (Offered in fall of odd years.) (Also listed as AGRN 251.)

255. "Reclamation of Disturbed Soils. 3 Hr. PR: Junior standing or above. Principles of soil science, geology, hydrology, and engineering will be applied to surface mine planning, overburden handling during mining, soil replacement and amendments, revegetation practices, acid mine drainage control and treatment, hazardous wastes, and land management of disturbed areas. (Field trip required.) (Also listed as AGRN 255.)

Exercise Physiology (EXPH)
164. "Kinesiology. I, II. S. 3 Hr. PR: Junior standing. Anatomical, mechanical, and musculoskeletal study of the human body as the instrument for efficient performance of motor activities. (Laboratory work included.)

165. "Exercise Physiology. 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.


194. "Professional Field Experience. I, II. 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

196 "Senior Thesis. I, II. S. 3 Hr. PR: Consent (3 hr. arranged).

Family and Consumer Sciences (F&CS)
1. "Intro Family Resources. 1 Hr.

191 A-Z. Special Topics. I, II. S. 1-4 Hr. per semester max. 9 Hr.

194 A-Z. "Professional Field Experience. I, II. S. 1-9 Hr. (Community Internship/Practicum). PR: Senior standing or consent. Examines the process of socialization for the professional role within the context of social change and current trends affecting families in the U.S. and overseas.

195. "Seminar. I, II. S. 1-4 Hr. per sem., max. 9 hr.

281. "Issues in Consumer Sciences. I, II. S. 3 Hr. PR: Senior standing or consent. Examines the process of socialization for the professional role within the context of social change and current trends affecting families in the U.S. and overseas.

Finance (FIN)
111. "Business Finance. 3 Hr. PR: ACCT 52, ECON 54 and 55 and ECON 25 and ENGL 1 and ENGL 2 and (MATH 3 or MATH 14 or MATH 28) and (MATH 28 or MATH 15). Activities of the finance manager in the planning, acquisition, and administration of funds used in a business enterprise.
112. Intermediate Finance. 3 Hr. PR: FIN 111 with a grade of "B" or better. Continuation of FIN 111; use of computers to help solve extended problems and/or short cases.

115. General Insurance. 3 Hr. PR: ACCT 51 and ACCT 52 and ECON 54 and ECON 55 and ECON 125 and ENGL 1 and ENGL 2 and (MATH 3 or MATH 14 or MATH 28) and (MATH 128 or MATH 15). Theory of risk and its application to insurance; principles underlying insurance-life, property, casualty, fire, and surety.

150. Investments. 3 Hr. Coreq: FIN 111. Investment analysis and management for the individual and the financial institution.

151. Financial Institutions. 3 Hr. Coreq: FIN 111. The role of financial institutions in our nation’s financial markets and the economy. Analysis of interest rate, financial markets and federal revenue policy.

161. Real Estate. 3 Hr.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-3 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

200 A-Z. Special Topics. 1-4 Hr. Coreq: FIN 112 or FIN 321. Special topics relevant to finance.

212. Working Capital Management. 3 Hr. PR: FIN 112. 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.

216. Risk Management. 3 Hr. PR: FIN 115, Coreq: FIN 112. 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.

217. Employee Benefit Plans. 3 Hr. PR: FIN 115. 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.

218. Life Insurance and Estate Planning. 3 Hr. PR: FIN 115. 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.

219. Property and Liability Insurance. 3 Hr. PR: FIN 115. 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.

220. Social Insurance. 3 Hr. PR: FIN 115. Our social and political efforts to provide economic security for the general public. An examination of the parallel developments of private insurance.

250. Security Analysis and Portfolio Management. 3 Hr. PR: FIN 150. The systematic selection, assessment, and ranking of corporate securities in a portfolio framework through a synthesis of fundamental analysis, technical analysis, and random walk.

251. Bank Management. 3 Hr. Coreq: FIN 112. (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.

252. Advanced Bank Management. 3 Hr. PR: FIN 251. 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.

261. Real Estate Appraising. 3 Hr. PR: FIN 161.

262. Real Estate Finance. 3 Hr.

263. Real Estate Investment and Land Development. 3 Hr.

290. Advanced Finance. 3 Hr. PR: FIN 112. Conc: MANG 225. Integrative course in finance to be taken during the final semester before graduation.

297. Internship in Finance. I, II, S. 1-3 Hr. PR: FIN 111 and department approval. Supervised practical experience in student’s major field; identification, analysis, and evaluation of a specific project. (Student, under departmental supervision, arranges internship with sponsoring organization.)
Independent Study. 1-3 Hr. PR: FIN 112 and department approval. Students will develop and complete a program of specialized studies under the supervision of a cooperating instructor.

Food Science (FDSC)

107. Milk and Public Health. 3 Hr. Food value of milk and its production and processing in relation to public health. (2 hr. lec., 3 hr. lab.) (Offered in fall of odd years.)

112. Dairy Technology. 3 Hr. Introductory. Composition and properties of milk and milk products, butterfat testing, manufacture of dairy products. (2 hr. lec., 3 hr. lab.) (Offered in spring of odd years.)

130. Milk Production and Frozen Desserts. 4 Hr. Assembling, processing, packaging, storing and merchandising dairy products. (3 hr. lec., 3 hr. lab.) (Offered in fall of even years.)


166. Meat Technology. I. 3 Hr. Emphasis on techniques of slaughtering, cutting, breaking, manufacturing, inspecting, and grading beef, veal, pork, lamb, and poultry meat and muscle food products; meat plant design, technology, sanitation, operation, and management.

167. Meat Science. 3 Hr. PR: FDSC 166 and BIOL 2 and BIOL 4 and CHEM 12 or equiv. Emphasis on basic physical, chemical, anatomical, and nutritional characteristics of muscle foods; methods of analysis and quality assurance in processing muscle foods. (Offered in spring of odd years.)

267. Advanced Meat Science. 3 Hr. PR: FDSC 167. Theoretical and experimental aspects of meat science, meat product/process systems, and the quantitative biology of muscle systems used for food. (Offered in spring of even years.)

Foreign Literature in Translation (FLIT)

13. Introduction to French Literature. II. (Alternate years.) 3 Hr. Major writers and representative movements in French literature from its beginning to the present.

14. Introduction to German Literature. I. (Alternate years.) 3 Hr. Survey of German literature with selected readings of prose, poetry, and drama from the Enlightenment to the present.

15. Introduction to Spanish Literature. I. (Alternate years.) 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.

16. Introduction to Latin American Literature. II. (Alternate years.) 3 Hr. Reading and discussion of representative works of twentieth-century Latin American writers.

17. Introduction to Russian Literature. I. (Alternate years.) 3 Hr. Major writers and representative movements in Russian literature from its beginning to the present.

18. Introduction to Italian Literature. II. (Alternate years.) 3 Hr. Italian literary masterpieces will be examined in historical perspective and in relation to the European mainstream.

25. 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.

111. Italian Literature in Translation 1. I. 3 Hr. Selected Italian works from the twelfth century to the end of the eighteenth century. Readings and discussion in English.

112. Italian Literature in Translation 2. II. 3 Hr. Selected Italian works from the nineteenth and the twentieth centuries. Readings and discussion in English.


132. Greek Literature in Translation 2. II. 3 Hr. Survey of Greek literature in translation.

141. Spanish Literature in Translation 1. I. 3 Hr. Selected Spanish works from the twelfth century to the end of the eighteenth century. Readings and discussion in English.

142. Spanish Literature in Translation 2. II. 3 Hr. Selected Spanish works from the nineteenth and the twentieth centuries. Readings and discussion in English.


152. Spanish American Literature in Translation 2. II. 3 Hr. Selected Spanish American works from the nineteenth and the twentieth centuries. Readings and discussion in English.

330  Foreign Literature in Translation
161. 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.

162. French Literature in Translation 2. II. 3 Hr. Selected French works from the beginning of the nineteenth century to the present. Readings and discussion in English.

166. Francophone Literature in Translation. II. 3 Hr. Works by French-speaking authors from Africa and the Caribbean. French majors with read selections in the original.

171. Brazilian Literature in Translation. II. S. 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.

181. German Literature in Translation 1. I. 3 Hr. Selected German works from 800 A.D. to the period of Naturalism. Readings and discussion in English.

182. German Literature in Translation 2. II. 3 hr. Selected German works from the period of Naturalism to the present. Readings and discussion in English.

188. 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 majors will read selections in the original.

189. 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.

190. Teaching Practicum. 1-3 Hr.

191 A-Z. Special Topics. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

208. Weimar Cinema. 3 hr. A study of representative German films from the years 1919-1932. (May be crosslisted with GER 208.)

209. Fascism and Film. 3 hr. A study of representative German films from the years 1919-1945. (May be crosslisted with GER 209.)

210. The New German Cinema. 3 hr. A study of representative German films from 1962 to the present. (May be crosslisted with GER 210.)

211. Chinese Literature in Translation. I. 3 Hr. Survey of selected works of Chinese literature from ancient times through the eighteenth century.

221. Japanese Literature in Translation. II. 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.

241. 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.

263. French Women Writers. 3 Hr. Selected works of French women writers. (3 hr. lec.)

292. Pro-Seminar. I, II, S. 1-6 Hr. PR: 6 hr. Upper-division literature courses or consent. Special topics.

**Forest Hydrology (FHYD)**

244. Watershed Management. II. 3 Hr. PR: FMAN 12 and FMAN 211. (Primarily for forest management majors.) Influences of silvicultural practices and forest management activities on the hydrology of forested catchments.

**Forest Management (FMAN)**


122. Forest Mensuration. II. 4 Hr. PR: MATH 15 and STAT 101. Estimating volume and growth of trees and forest stands with emphasis on the mathematical and statistical techniques involved. Laboratories include practical field experience.

132. Farm Woods Management. II. 3 Hr. Students majoring in forest resource management and wood industry may not take this course for credit. Characteristics of forest trees; management of farm woods for timber, wildlife, watershed protection, and recreation; measuring and marketing farm timber; plantation establishment.

200. Forest Resources Management Field Practice. S. 6 Hr. PR: CE 5 and FMAN 122. (Course will be taught during five consecutive 6-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.

211. Silvicultural Systems. I. 4 Hr. PR: FOR 5, and FMAN 12, and FMAN 122, or FOR 5 and WMAN 213. The theory and practice of controlling forest stand establishment, composition, structure, and growth. Systems include: reproduction methods, release operations, and intermediate treatments.

213. Regional Silviculture. I. 2 Hr. PR: Forestry major or consent, FMAN 12; PR or Conc.: FMAN 211. Major forest types of the United State: their composition, management, problems, and silvicultural treatment.

216. Forest Genetics and Tree Improvement. II. 3 Hr. Forest genetic principles and their application to forest tree improvement, including crossing methods, selection systems and other techniques.

222. Advanced Forest Mensuration. II. 3 Hr. PR: Forestry major or consent; FMAN 122. Measurement of growth and yield; statistical methods applied to forest measurement problems.

230. Principles of Forestry Economics. II. 4 Hr. PR: ECON 54 or ARE 50 and ECON 55. Production, distribution and use of forest goods and services. Emphasis on analytical methods and problem solving techniques in the economic aspects of forestry.


234. Forest Resources Management Planning. II. 3 Hr. PR: FMAN 122 and FMAN 200 and FMAN 211 and PR or CONC: (ENTO 170 or PPTH 170) and FMAN 230. 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 applied in decision-making.

Forestry (FOR)

1. 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.

5. Dendrology. I. 3 Hr. Classification and silvical characteristics of North American forest trees.

10. Forest Meteorology. II. 3 Hr. PR: MATH 3 or MATH 4 or consent. Introduction to meteorology and climatology with emphasis on forest/atmosphere interactions.

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.

170 A-Z. Problems in Forestry, Wood Science, Wildlife, or Recreation. I, II, S. 1-4 Hr. PR: Forestry senior or consent.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

220. Forest Policy and Administration. I and II. 3 Hr. PR: Upperclass forestry major or consent. Forest policy in the United States; important federal and state laws; administration of public and private forests; problems in multiple-use forestry.

225. 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.


French (FRCH)

1. Elementary French. I, II. 3 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context. (Course presumes no prior knowledge of the language.)
2. Elementary French. I, II. 3 Hr. PR: Frch 1 or a score of F2 on the placement test. Continuation of FRCH 1.

3. Intermediate French. I, II. 3 Hr. PR: FRCH 2 or score of F3 on placement test.

4. Intermediate French. I, II. 3 Hr. PR: FRCH 3 or score of F4 on placement test. Capstone course for the FRCH 1 through 4 sequence and foundation for advanced French study. Emphasis on written and oral communication within an authentic cultural context.

10. Intensive Elementary French. I. 6 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Equivalent of FRCH 1 and 2 combined into one course.

11. Intensive Intermediate French. II. 6 Hr. PR: FRCH 2 or 10, or score of F3 on placement test. The equivalent of FRCH 3 and 4 combined into one course. Capstone course for the FRCH 1 through 4 sequence and foundation for advanced French study. Emphasis on written and oral communication within an authentic cultural context.


104. Introduction to Contemporary Culture. II. PR: FRCH 4. Development of oral and written communicative skills in the context of contemporary values, institutions, and contributions of the French and Francophone world.


111. Survey of Literature 1. I. 3 Hr. PR: Six hr. of upper-division French. A cultural and historical survey from its beginnings to the end of the eighteenth century.

112. Survey of Literature 2. II. 3 Hr. Six hr. of upper-division French. A cultural and historical survey from the beginning of the nineteenth century to the present.

115. The Classical School. I. 3 Hr. PR: 12 hr. of French or equiv.

118. Literature of the Nineteenth Century. I. 3 Hr. PR: 12 hr. of French or equiv.

190. Teaching Practicum. 1-3 Hr.


194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.


203. Oral Expression. 3 Hr. PR: Six hr. of upper-division French. Intensive practice of oral skills with emphasis on discussion, debate, recitation, reading aloud, etc.

217. French Civilization. II. 3 Hr. PR: 12 hr. of French.

221. The Romantic Movement. I. 3 Hr. PR: 18 hr. of French or consent.

222. French Realism. II. 3 Hr. PR: 18 hr. of French or consent.

229. Literature of the Sixteenth Century. I. 3 Hr. PR: 18 Hr. of French or consent.

231. Phonetics and Pronunciation. II. 3 Hr. PR: 12 Hr. of French or equiv.

232. Literature of the Eighteenth Century. 3 Hr. PR: 18 hrs. of French or consent. Survey of major literary works of eighteenth century France.

292 A-Z. Pro Seminar. I, II, S. 1-6 Hr. PR: 18 hours of French or consent. Special topics.
Freshman Engineering Program (ENGR)
1. Freshman Engineering Design. 3 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, presentation techniques and internet applications.

2. Freshman Engineering Design and Analysis. 3 Hr. PR: ENGR 1 or consent. Use of computer as a tool for analysis, design, and simulation of engineering applications through software packages such as MATLAB and high level programming languages such as C.

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 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)

290. Crop Breeding. II. 3 Hr. PR: GEN 171 or GEN 321. Methods and basic scientific principles involved in improvement of leading crops through hybridization, selection, and other techniques. (Offered in spring of even years.)

Geography (GEOG)
2. World Regions. II. 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.

7. Physical Geography. I, II, S. 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.


10. Environmental Geoscience. I, II, S. 3 Hr. Physical aspects of the earth with emphasis on natural resources, environmental degradation and hazards. Registration in GEOG. 11 meets requirements for a 4 hr. credit in laboratory science. (Also listed as GEOL 10; students may not receive credit for GEOG 10 and GEOL 1).

11. Environmental Geoscience Laboratory. I, II. 1 Hr. PR or Conq: GEOG. 10. (Also listed as GEOL 11; students may not receive credit for GEOG 11 and GEOL 2).

99. Orientation to Geography. II. 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.)

105. Natural Resources. II. 3 Hr. Introduces the concept of natural resources and surveys land, soil rangeland, forests, water, atmosphere, minerals, energy, and amenity resources. Emphasis is on the United States within the context of the global environment.

107. Climate and Environment. II. 3 Hr. Examination of atmospheric processes and the impact of human activity on climate.

109. Economic Geography. I. 3 Hr. PR: GEOG 8. Examination of the world economy particularly the spatial patterns of agriculture, manufacturing, and services.

110. Urban Geography. II. 3 Hr. 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.
115. Population Geography. 3 Hr. 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 also will be covered, with an emphasis on developing countries.

127. Map and Image Interpretation. 2 Hr. PR: GEOL 1 and 2. Analysis of physical and cultural landscapes using maps and remote sensing images.

140. United States and Canada. I. 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.

141. Geography of Europe. 3 Hr. PR: GEOG 8. Study of contemporary human and physical of Europe. Insight to political, economic and social dimensions of transition in this region.

143. Geography of Africa. I or II. 3 Hr. Systematic and regional characteristics and geographic problems of political, social, and economic development.

161. 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.)

200. Geography Data Analysis. I. 3 Hr. Quantitative techniques for collection, classification, and spatial analysis of geographical data with emphasis on map analysis and application of spatial statistics.

211. Rural and Regional Development. 3 Hr. PR: GEOG 2 or 8. An investigation into rural and regional development in developed and underdeveloped regions. The relationship between development theory and policy is explored.

212. Geography of Gender. 3 Hr. PR: GEOG 8. 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.

215. Environmental Systems Geography. II. 3 Hr. PR: GEOG 7, equivalent, or consent. A geographic analysis of the earth system emphasizing the interdependence and feedback mechanisms of the hydrologic cycle, ecosystems and climate.


220. Seminar in Geography. I, II. 1-9 Hr*. per sem.; max. 15 hr. PR: Consent. Includes separate seminars in urban, economic, physical, behavioral, social, Appalachian, transportation, census, planning, resource, international studies, geographic model building, rural problems, cartography, aging and environment, and energy.

221. Geomorphology. II. 3 Hr. PR: GEOL 1 and 2. An examination of earth-surface processes and landforms, with emphasis on environmental geomorphology, streams, floods, glaciers, and landslide. (Required trip at student’s expense; also listed as GEOL 221.)

225. Urban and Regional Planning. 3 Hr. PR: GEOG 110 or POLS 121 or consent. Explores concepts, techniques, and processes of physical and socioeconomic planning and their application to urban and regional problems.

230. Land Use Policy. (Alternate years.) 3 Hr. PR: GEOG 225. Basic concepts of land use policy at the national, regional, county, and local level are examined. Environmental and land use policies are analyzed.

250. Introduction to GIS. I. 4 Hr. Geographic information systems (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.)

255. Geographic Information Systems. II. 3 Hr. PR: GEOG 250. Advanced concepts in GIS including remote sensing, spatial analysis, and cartographic production. (3 hr. lab.)
251. Geographic Information Systems Technical Issues. (Alternate years.) 3 Hr. PR: GEOG 151. Technical aspects of GIS functions, algorithms, theory of geographical data structures and error handling. Labs require tools, data and macros to construct small GIS. (2 hr. lec., 1 hr. lab.)

252. GIS Applications. II. 3 Hr. PR: GEOG 250. 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 254.)


255. Introduction to Remote Sensing. I. 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 255.)

262. Digital Cartography. 3 Hr. PR: GEOG 161 or consent. Computer-assisted mapping emphasizing the appropriate uses of software in thematic and topographic map design, annotation, symbolization, color, design, display, and reproduction.

266. 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.)

285. 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.

290. 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.

295. Internship. I, II, S. 1-12 Hr*. PR: Junior standing and consent. A working internship with an agency or company designed to give the student experience in the practical application of geographic training to specific problems.


Geology (GEOL)

1. Planet Earth. I, II, S. 3 Hr. Composition and structure of the earth and the physical processes that change earth’s surface. GEOL 2 not required with GEOL 1. (Accompanied by registration in GEOL 2, class meets requirements for 4 hr. credit in a laboratory science in geology.)

2. Planet Earth Laboratory. I, II, S. 1 Hr. Coreq.: GEOL 1. Laboratory study of the earth using rocks, minerals and maps. (2 hr lab.)

3. Earth Through Time. I, II, S. 3 Hr. PR: GEOL 1 or GEOL/GEOG 10. Evolution of the earth and its inhabitants. (Accompanied by registration in GEOL 4, class meets requirements for 4 hr. credit in a laboratory science in geology.)

4. Earth Through Time Laboratory. I, II, S. 1 Hr. Coreq.: GEOL 3. Laboratory study of sedimentary rocks, fossils, and geologic maps and their use in interpreting earth history. (2 hr lab.)

5. Fossils and Evolution. I. 3 Hr. PR: GEOL 1 or BIOL 1. 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 3 and GEOL 6.)

6. Physical Oceanography. II. 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.

10. Environmental Geoscience. I, II. 3 Hr. Physical aspects of the earth with emphasis on natural resources, environmental degradation and hazards. Registration in GEOL 11 meets requirements for a 4 hr. credit in laboratory science. (Also listed as GEOG 10; students may not receive credit for both GEOG 10 and GEOG 1.)

11. Environmental Geoscience Laboratory. I, II. 1 Hr. PR or Conc: GEOL 10. (Also listed as GEOG 11; students may not receive credit for both GEOG 11 and GEOL 11.) Registration in GEOL 11 meets requirements for a 4 hr. credit in laboratory science.

100. Geology for Environ Scientists. I. 4 Hr. PR: (GEOL/GEOL 10,11) or GEOL 1, 2) and GEOL 3, 4. Fundamentals of mineralogy, petrology, sedimentation, stratigraphy, and structural geology needed by environmental scientists to understand earth materials. (Required field trips at partial student expense). (3 hr. lec/1 hr. lab.)

127. Geologic Interpretation. I. 2 Hr. PR: GEOL 1, 2 or GEOL/GEOL 10, 11. Interpretation of geology and Earth history from topographic maps, geologic maps and remote sensing. (1 hr lec, 2 hr. lab.) (Can only be used as a Geology B.S. elective when taken before GEOL 253.)
151. Structural Geol. for Engineers. I. 3 Hr. PR: GEOL 1, 2, and PHYS 11. Introduction to rock deformation processes and the development and interpretation of geologic structures. (Several required one-day field trips.)

161. Geomathematics. II. 3 Hr. PR: MATH 128, GEOL 1. Mathematical methods and their fundamental applications in geology, geochemistry, geophysics, and environmental science; review of integral calculus, relevant differential equations, and linear algebra; introduction to computers as geological problem-solving tools.

184. Mineralogy. I. 3 Hr. PR: GEOL 1, 2, Coreq: CHEM 11 or 15 or consent. Elements of crystallography and the systematic study of minerals, identification of minerals by hand specimens according to physical properties. (Required weekend field trip covered by the lab fee.)

185. Introductory Petrology. II. 3 Hr. PR: GEOL 184. Igneous, sedimentary, and metamorphic rock, including mineralogy, processes of formation, tectonic setting, and description and identification of rocks in hand specimens. (Required weekend field trip at student’s expense.)

201. Physical Geology for Teachers. I. II. 3 Hr. PR: High school teaching certificate and consent. Composition and structure of earth and the geologic processes which shape its surface.

215. Environmental Geology. II. 3 Hr. Coreq: GEOL 221. 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.

221. Geomorphology. II. 3 Hr. PR: GEOL 1, 2 or GEOL/GEGO 10, 11. An examination of earth-surface processes and landforms, with emphasis on environmental geomorphology, and fluvial, glacial, and colluvial systems. (Required field trip at student’s expense; also listed as GEOG 221.)

231. Paleontology. I. 3 Hr. PR: GEOL 3, 4, STAT 101; or consent. Uses of paleontologic data in geology: biostratigraphy, paleoecology, evolution, extinction, and biogeography; lab emphasis on identification and utilization of marine invertebrate fossils. (Required weekend field trip at student’s expense.)

251. Advanced Topics in Structural Geology. II. 4 Hr. PR: GEOL 152 and 261 or consent; MATH 15; undergraduates need consent. (Two two-day field trips required. Basic field equipment and field trips are at student’s expense.) Studies into the development of structures emphasizing both theoretical and experimental approaches. Two two-day field trips required. (Offered in Spring of odd years.)

252. Environ and Expl Geophysics 1. I. 3 Hr. PR: PHYS 2, and either MATH 16 or GEOL 161. 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.

253. Structural Geology. I. 3 Hr. PR: GEOL 3, 4, 184, 185, PHYS 1. Introduction to rock deformation processes and the interpretation of geologic structure, with applications to the structure and tectonic evolution of the Appalachian Mountains. (Several required one-day field trips.)

254. GIS Applications. 3 Hr. PR: GEOG 151, 200. Operational and management issues in planning management analysis, locational decision making, and design implementation of GIS. Lab project emphasizes student’s specialization (2 hr lec, 2 hr lab; alternate years; also listed as GEOG 252.)

255. Introduction to Remote Sensing. I. 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 255)

260. Carbonate Sediments of Florida. S. 2 Hr. PR: GEOL 1, 2, 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.)

261. Stratigraphy and Sedimentation. II. 3 Hr. PR: GEOL 3, 4, 221, 185, or consent. (Two-day field trip required. Basic field equipment and field trips at student’s expense.) Study of sediments and sedimentary rocks. Field techniques stressed as data gathered and interpreted from rocks of Pennsylvanian age in the Morgantown vicinity.

263. Introduction to Ground-water Hydrology. I. 3 Hr. PR: GEOL 1 or consent. Principles of ground-water hydrology, emphasizing the occurrence, movement, development, and environmental problems of ground-water; geological setting, flow nets, and contamination sources of ground-water.

266. Appalachian Geology Field Camp. S. 6 Hr. PR: GEOL 253, 185, 261, and consent. (Living expense in addition to tuition must be paid at time of registration.) Practical experience in detailed geological field procedures and mapping.


270. Mineral Resources. II. 3 Hr. PR: GEOL 1, 184. Description, mode of occurrence, and principles governing the formation of ore deposits.
272. Petroleum Geology. II. 3 Hr. PR: GEOL 151 or 253. Origin, geologic distribution, methods of exploration and exploitation, uses and future reserves of petroleum and natural gas in the world.

273. Petroleum Geology Laboratory. II. 1 Hr. PR or Conc: GEOL 151 or 253. Well sample description, correlation, and interpretation. Construction and interpretation of subsurface maps used in exploration for hydrocarbons.


294. Environmental Geochemistry. II. 4 Hr. PR: CHEM 16. Basic review of physical and aqueous chemistry, discussion of basic geochemical processes; calcium carbonate chemistry, diagenetic processes, weathering, the silicate and iron system.

German (GER)

1. Elementary German. I, II. 3 Hr. PR: Score of G1 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 authentic cultural context. (Course presumes no prior knowledge of the language.)

2. Elementary German. I, II. 3 Hr. PR: GER 1. Continuation of GER 1. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context.


10. Intensive Elementary German. I. 6 Hr. The equivalent of GER 1 and 2 combined into one course.

11. Intensive Intermediate German. II. 6 Hr. PR: GER 1 and 2 or 10 or consent. The equivalent of GER 3 and 4 combined into one course.

101. Commercial German. 3 Hr. PR: GER 4 or consent. Practical speaking, writing, and reading experience in German as it relates to business, commerce, and industry.

102. Commercial German. 3 Hr. PR: GER 101 or consent. Continuation of GER 101. Preparation for Diplom Wirtschaftsdeutsch.


104. Advanced German Conversation. I. 3 Hr. PR: GER 103. Content-based conversation course with grammar review.

109. Advanced German Composition. I. 3 Hr. PR: GER 104. Content-based composition course with grammar review.

110. Advanced German Composition. II. 3 Hr. PR: GER 109. Content-based composition course with grammar review.

111. Survey of German Literature. I. 3 Hr. PR: GER 4. Readings of representative selections from major periods through Romanticism.

112. Survey of German Literature 2. 3 Hr. PR: GER 4. Readings of representative selections from major periods since Romanticism.

121. Scientific German. I. 3 Hr. PR: GER 1, 2. Primarily for students in science courses.

122. Scientific German. II. 3 Hr. PR: GER 121. Continuation of GER 121.

131. German Cultural History. 3 Hr. PR: GER 4. A study of cultural, political, social and economic developments in the German-speaking countries.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. I, II. 1-3 Hr. PR: Consent.


196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

208. Weimar Cinema. 3 Hr. A study of representative German films from the years 1919-1932. (May be crosslisted with FLIT 208.)

338 German
209. Fascism and Film. 3 Hr. A study of representative German films from the years 1919-1945. (May be crosslisted with FLIT 209.)

210. The New German Cinema. 3 Hr. A study of representative German films from 1962 to the present. (May be crosslisted with FLIT 210.)

211. German Culture Since 1945. 3 Hr. PR: Consent. An exploration of postwar German culture with a focus on the contemporary situation since unification.

245. Classicism and Romanticism. I. 3 Hr. PR: 18 hr. of German or consent. Critical study of German literature from 1750 to 1830.

246. The Liberal Age. II. 3 Hr. PR: 18 hr. of German or consent. Critical study of German literature from 1830 to 1870.

247. The Age of Crisis. I. 3 Hr. PR: 18 hr. of German or consent. A critical study of German literature from 1870 to 1945.

292. Pro-Seminar. 1-6 Hr. PR: Consent. Special topics.

Gerontology (GERO)

291A. Special Topics. Gerontology Field Experience, I, II. 3 Hr. PR: MDS 50 and consent.

291B. Special Topics. I, II, 3 hr. PR: Consent. Special problems for undergraduate and graduate students working on gerontology certificate programs.

History (HIST)

1. Western Civilization: Antiquity to 1600. 3 Hr. (HIST 1 does not have to precede HIST 2.) A survey of the major developments in Western civilization beginning with the ancient Mediterranean world and concluding with Reformation Europe.

2. Western Civilization: 1600 to Present. 3 Hr. (HIST 2 may precede HIST 1.) 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.

4. 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.

5. 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.

6. 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.

8. 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.

11. Science, Religion, and Myth. 3 Hr. Surveys human understandings of nature from prehistoric astronomies and Babylonian myths through ancient and medieval thought to the new sciences of Copernicus, Galileo, and Newton.

12. 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.

52. Growth of the American Nation to 1865. 3 Hr. (HIST 52 does not have to precede HIST 53.) Examines the basic political, economic, and social forces in formation and development of United States before 1865. Emphasis on national development from independence through Civil War.

53. Making of Modern America. 1865 to the Present. 3 Hr. (HIST 53 may precede HIST 52.) Continues the examination of basic political, economic, and social forces in the development of the United States since the Civil War.

79. 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.

80. 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.

101. History of Ancient Times: Stone Age to the Fall of Rome. 3 Hr. Ancient civilizations of the Near East and the Mediterranean.
102. *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.

103. *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.

105. *Early Modern Europe 1300-1750*. 3 Hr. The Renaissance to the Enlightenment, concentrating on political, religious and social developments with attention to religious change, gender roles, the struggle for effective government, and the scientific revolution.

107. *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.

109. *Twentieth Century Europe*. 3 Hr. Traces the major political, economic, and social developments of Europe from World War I to the present.

110. *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.

111 A-Z. *Special Topics in History*. 1-3 Hr. (May be repeated for a maximum of 9 credit hours as long as content for each semester of HIST 111 is different.) Selected topics in history.

112. *Celtic Europe*. I, II. 3 Hr. PR: None. Celtic peoples from 800 BC to 500 AD, analysis of the history, politics, religion, economics, and culture of the peoples who provided the foundation for Europe. (Alternate years beginning spring 1993.)

113. *Roman and Anglo-Saxon England*. I. 3 Hr. PR: None. England from Roman times through the Anglo-Saxon invasions to the Norman conquest; emphasis upon social, political, and economic development and upon interaction of Celts, Romans, Angles, and Saxons.

114. *England, 1066 to Present*. II. 3 Hr. PR: None. England from 1066 to modern day, with primary emphasis upon feudal and national monarchy, economic development, social and religious changes, and the creation of the most powerful nation state of the 19th century. (Alternate years beginning spring 1993.)

117. *History of Russia: From Kiev to Nicholas*. I. 3 Hr. Interdisciplinary approach integrating political, social, economic, diplomatic, and cultural studies to provide more than an introduction to the history of Russia. In-depth study of the various aspects of Russian life in an attempt to provide an understanding of the forces which produced the Russian autocracy.

118. *History of Russia: From the Emancipation to the Present*. 3 Hr. Using the same approach as in HIST 117, an attempt is made to follow the changes which turned an underdeveloped country into one of the major world powers.

121. *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.

123. *History of Ireland to 1485*. I. 3 Hr. PR: None. Evolution of Ireland from pre-historic and Celtic times through the Viking invasions to the appearance of the Anglo-Normans and English overlordship. (Alternate years beginning fall 1994.)

124. *History of Ireland, 1485-Present*. II. 3 Hr. PR: None. Ireland from the Tudor monarchy and its re-conquest of Ireland through the plantation; 17th and 18th century oppression and the independence movements of the 19th century; the formation of the Republic. (Alternate years.)

125. *History of Scotland to 1746*. I. 3 Hr. PR: None. A detailed analysis of Scotland from the reign of Kenneth MacAlpine through the Anglo-Norman invasions, the wars of independence, the union, loss of independence in 1707, and final defeat at Culloden. (Alternate years.)

131. *The Viking World*. I. 3 Hr. PR: None. Viking-Norse people of AD 600-1300, emphasis upon economic expansion, cultural impact of trade, nature of their politics, religion, and literature, and their influence upon western Europe.

132. *The Baltic World*. II. 3 Hr. PR: None. The Danish, Swedish, Finnish, Norwegian, and Icelandic peoples from the Viking era to the present; emphasis on the region’s unique characteristics and its political, religious, social, and cultural contributions to Europe.

141. *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.

142. *Latin America: Reform and Revolution*. 3 Hr. History of modern Latin America, concentrating on the durability of nineteenth-century social, economic, and political institutions, and the twentieth-century reformist and revolutionary attempts to change those institutions.
153. **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.

155. **History of American Colonial Society.** 1607-1763. 3 Hr. The planting and maturation of the English colonies of North America. Relationships between Europeans and Indians, constitutional development, religious ferment, and the colonial economy are studied.

156. **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 1775-1780 controversy over the charter of new state and federal governments.

157. **Antebellum America.** 1781-1861. 3 Hr. (Completion of HIST 52 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.

159. **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.

161. **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.

164. **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.

175. **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.

177. **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.

181. **The Agrarian Transformation.** II (Alternate years.) 3 Hr. Surveys the modernization of world agriculture from 17th Century Europe to the Green Revolution, and its economic, social, and political consequences.

184. **History of Environmental Sciences.** II. (Alternate years.) 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.

190. **Teaching Practicum.** 1-3 Hr.

191 A-Z. **Special Topics.** 1-3 Hr.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

200. **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.

201. **Social and Economic History of the Middle Ages, 300-1000.** 3 Hr. (HIST 103 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.

204. **Ancient and Medieval Science.** 3 Hr. Investigations of the natural world in classical antiquity and medieval Europe.

205. **The Renaissance.** 3 Hr. The underlying political, economic, and social structure of fourteenth and fifteenth century Italy with concentration on significant intellectual and cultural trends, including humanism and art, gender roles, state formation and exploration.

206. **The Reformation.** 3 Hr. Religious change in sixteenth century Europe focusing on distinguishing theological characteristics of major reformers, the response of the people to these religious change and the impact on European politics and society.

207. **The Rise of Modern Science.** 3 Hr. The emergence of the scientific world view from the Renaissance through the Enlightenment.
208. 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.

209. 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.

210. Modern Spain. 3 Hr. Survey of the Moslem, Hapsburg, and Bourbon periods followed by an examination of
modern political and social forces, the Civil War, and the rule of Franco.

211. 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.

212. 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 preser-
vation. Lectures, guest speakers, field trips, individual projects.

213. France from the Renaissance to Napoleon. 3 hr. French history from the end of the Hundred Years War to
Napoleon's defeat at Waterloo. Focus on the construction of the modern French state, the Enlightenment, the
French Revolution, and Napoleon.

214. 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.

215. European Diplomatic History, 1815 to 1919. 3 Hr. Develops an understanding of the forces, men, and
events which determined diplomatic relations between the major powers.

216. European Diplomatic History, 1919 to Present. 3 Hr. Scope similar to HIST 215.

217. 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.)

218. Eastern Europe Since 1945. (every third semester.) 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.

219. Revolutionary Russia, 1905-1939. 3 Hr. Detailed study of the revolutionary era of Russian/Soviet history
with emphasis on the origins of Russian radicalism, the upheavals of 1905 and 1917, and Stalin's "revolution
from above."

220. The U.S.S.R., 1939 to Present. 3 Hr. Detailed study of the recent social and political history of the Soviet
Union. The Soviet experience in World War II, Stalin's last years, and the conflict between reformism and
conservatism since Stalin's death.

221. 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.

222. 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.

223. 15th and 16th Century England, II. (Alt. yrs.) 3 Hr. England from Richard II to Elizabeth I, covering develop-
ments in politics, religion and society, ranging from the War of the Roses and the plague to Protestantism
and Shakespeare.

225. History of Modern China. 3 Hr. Introduction to modern China (since 1839) with attention to China's Confu-
cian heritage; the Chinese effort to modernize in the face of Western diplomatic and economic pressure; spe-
cific attention to China's Nationalist and Communist revolutionary traditions.

226. 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 diplo-
matic implications of this change.

227. 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 polity, revolutionary change, and the European
scramble for East Africa form the major focus.

228. 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.

229. 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.
230. History of Africa: European Dominance 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.

231. Seventeenth Century Britain, 1603-1715. 3 Hr. The more significant political, social, economic, religious, and intellectual developments of Britian during a century of revolution and of the men and women who interacted with those movements.

232. 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.

233. West Africa to 1885. I. (Alternate years.) 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.

234. 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.

241. 17th Century Colonial America. I. (Alternate years.) 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.

242. 18th Century America. II. (Alternate years.) 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.

245. 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.

246. History of European Women to 1700. 3 Hr. History of European women to 1700, emphasizing philosophic, economic, and societal sources of women’s oppression, women’s self-perceptions and their role in work, religion, and the family and the development of feminism.

251. African-American History to 1900. 3 Hr. African background, the slave trade and evolution of slavery in the New World. The attack on slavery and its destruction.

252. 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.

253. 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.

255. 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.

257. The United States From McKinley to the New Deal, 1896 to 1933. 3 Hr. American national history from William McKinley to Franklin D. Roosevelt. Particular attention is given to great changes in American life after 1896; national political, economic, social, and cultural development; the Progressive Era in American politics; and alterations in American foreign relations resulting from the Spanish-American War and World War I.

259. 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.

263. American Diplomacy to 1941. 3 Hr. PR: None. HIST 52 and 53 recommended. American foreign policy and diplomacy from the adoption of the Constitution to the beginning of World War II.

264. American Diplomacy since 1941. 3 Hr. PR: None. HIST 52 and 53 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.

265. The Vietnam War. II. (Alternate years.) 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.

266. 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.

267. American Economic History Since 1865. 3 Hr. Scope similar to HIST 266.

268. 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.
269. 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 the black. Special attention to the southern literary renaissance and conservative and progressive politics of the southern people.

273. 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.

274. 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.

289. 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.

290. Introduction to Historical Research. 3 Hr. PR: History major or consent. Introduction to research techniques useful for history. Instruction in locating sources, taking notes, and writing research papers.

Home Management and Family Economics (HMFE)

165. Family Resources Management. I, II. 3 Hr. Develops an understanding of the systems approach to individual and family management with a focus on key concepts, processes, and contributing factors. Time management, work and family management, and money management are dealt with in depth.

260. 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.

Honors (HONR)


192. Senior Honors Seminar. I, II. 3 Hr. PR: Senior standing and membership in University Honors Program and permission of University Honors Program Director. Careful investigation of and independent research on a topic approved in advance by the University Honors Director—University Honors Council, and instructor.

194. Professional Field Experience. I, II, S. 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.


Horticulture (HORT)

107. General Horticulture. I. 3 Hr. PR: BIOL 1 and BIOL 3, or consent. Principles underlying present-day horticulture practice with special emphasis on how basic discoveries in plant science have been applied in horticulture.

116. 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.

117. 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.

151. Floral Design. I. 3 Hr. Basic course in flower arrangement to cover occasions for the home and retail flower shop.

160. Woody Plant Materials. I. 3 Hr. PR: BIOL 1 and BIOL 3 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.)

162. 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.)

204. Plant Propagation. II. 3 Hr. PR: PLSC 52 or consent. Study of practices of plant propagation and factors involved in reproduction in plants. (Offered spring of even years.)

242. Small Fruits. I. 3 Hr. PR: PLSC 52, HORT 107, or Consent. (One 2-day field trip required.) Taxonomic, physiological, and ecological principles involved in production and handling of small-fruits. (2 lec., 1 scheduled lab.) (Offered in fall of odd years.)

243. Vegetable Crops. I. 3 Hr. PR: PLSC 52 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.)

244. Handling and Storage of Horticultural Crops. I. 3 Hr. PR: PLSC 52 and CHEM 16. Characteristics of perishable crops. Methods and materials used to maintain quality. (2 lec., 1 lab.) (Offered in fall of odd years.)
245. Greenhouse Management. II. 3 Hr. PR: Two semesters of Inorganic Chemistry and HORT 107 or consent. Greenhouse as a controlled plant environment. How to regulate factors influencing plant growth and development within specialized environments of greenhouses.

246. Tree Fruits. I. 3 Hr. PR: PLSC 52 or consent. Principles and practices involved in production of tree fruits. (2 lec., 1 scheduled lab.) (Offered in fall of even years.)

Human Nutrition and Foods (HN&F)

71. 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.

148. Science of Food Preparation. I. 5 Hr. PR: HN&F 71 and CHEM 16 and BIOL 2 and BIOL 4. Basic chemical processes that occur within food systems, including effects of storage, processing, ingredients and alteration in formulation on qualities of food products. Reasons for basic practices and procedures essential for obtaining standard products. (4 hr. lec., 3 hr. lab.)

150. Cross-Cultural Dietary Patterns. II. 4 Hr. PR: HN&F 71 and HN&F 148. 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.)

153. Food Service Systems Management. II. 4 Hr. PR: Dietetics major and MATH 3 or HN&F 150 and ENVM 141 Conc. Introduction to food service systems and systems management. Field experience in institutional and commercial food services.


274. Nutrition in Disease. II. 4 Hr. PR: HN&F 71; physiology or consent. Nutritional care aspects of patients. Modification of diet to meet human nutrition needs in various medical conditions.

Humanities (HUM)

1, 2. Introduction to Western Civilization. I, II, S. 3 Hr. per semester. First semester treats the high points of Greco-Roman and Medieval European civilizations: their art, architecture, philosophy, religion, literature and music. Second semester shows how these ideas and achievements were modified and added to during the Renaissance, the Age of Classicism and the revolutionary nineteenth and twentieth centuries.

3, 4. Honors Seminar in Humanities. I, II. 3 Hr. per sem. Honors courses for selected students mirroring HUM 1 and 2, respectively. Affords participants a wider opportunity for discussion than in HUM 1 and 2 and for reading the classic statements on the nature of civilization.

5. Cultures of Japan. I, II. 3 Hr. Introduction to the intellectual, artistic, and literary cultures and civilizations of Japan within the context of the historical society. (Not offered every year.)

10. Classic Hero in Western Civilization. I. 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. (Not offered every year.)

11. 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. (Not offered every year.)

20. Humanities of China. I, II. 3 Hr. Introduction to the nature and role of philosophy, literature, and art in classical and contemporary China. (3 hr. lec.) (Not offered every year.)

190. Teaching Practicum. 1-3 Hr.

191 A-Z. Special Topics. I or II. 1-3 Hr.

Industrial and Labor Relations (ILR)

195. Seminar. 1-3 Hr.

260. Survey of the Employment Relationship. I. 3 Hr. PR: 58 credits completed. Overview of employee and labor relations; management techniques, teams, labor-management relations, employment law, benefits, compensation, education and training programs, and current issues.
262. Collective Bargaining and Labor Relations. 3 Hr. PR: ECON 260 or department approval. 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.

**Industrial and Management Systems Engineering (IMSE)**

20. Fundamentals of Industrial Engineering. 1 Hr. PR: Sophomore standing. An introduction to the basic principles of industrial engineering.

113. Engineering Statistics. 3 Hr. PR: MATH 17. The use of statistical analysis in engineering decision making. Topics covered include basic statistical methods of describing data, common statistical distributions encountered in engineering, test of hypotheses, confidence intervals, and simple linear regression.

140. Motion and Time Study. 3 Hr. PR: Sophomore standing. Principles and techniques, job analysis, standardization, and formula construction; stop watch and micromotion analysis of industrial operations; development of production and incentive standards. Human factors. (2 hr. lec., 3 hr. lab.)

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

201. Principles of Solidification. 3 Hr. PR: IMSE 200 or consent. Material and energy balances, solidification of metals, riser and gating systems for castings, fluidity of metal, casting design, and molding processes.

202. Manufacturing Processes. 2 Hr. PR: CHE 105 and MAE 43. Lectures and demonstrations relating to materials, properties, parameters, design, equipment, economics and computer control of processing systems emphasizing castings, machining, joining and forming operations.

203. Manufacturing Processes Laboratory. 1 Hr. Coreq.: IMSE 202. 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.

205. Design for Manufacturability. 2 Hr. PR: IMSE 202 and IMSE 203. Aspects of design, manufacturing and materials; emphasis on design for manufacturability and assembly, including material selection and manufacturing processes on product cost. (2 hr. lec.)

206. Design for Manufacturability Laboratory. 1 Hr. PR: IMSE 202 and IMSE 203. Laboratory tasks dealing with manufacturing and materials; process selection, and cost estimation for component and subassembly design; emphasis on utilizing design for manufacturability and assembly software. (1 hr. lab.)

211. Expert Systems in Manufacturing. 3 Hr. PR: IMSE 202 and IMSE 203 and IMSE 281. Expert systems design and development for manufacturing applications; knowledge acquisition, representation, search techniques, inference engines, data base infrases, algorithmic interfaces.

214. Advanced Analysis of Engineering Data. 3 Hr. PR: IMSE 113. Introduction to linear statistical models. Design and analysis of simpler experimental configurations occurring frequently in engineering studies. Similarities and differences between regression and experiment design models emphasized in a vector-matrix setting.

215. Statistical Decision Making. 3 Hr. PR or Coreq: IMSE 113. 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.

216. Industrial Quality Control. 3 Hr. PR: IMSE 113. Principles and methods for controlling the quality of manufactured products, with emphasis on both economic and statistical aspects of product acceptance and process control.


222. Job Evaluation and Wage Incentives. 3 Hr. PR: IMSE 140 or consent. Principles used in evaluating jobs, rates of pay, characteristics and objectives of wage incentive plans, incentive formula and curves.

240. Labor and Productivity. 3 Hr. PR: Consent. The work force as a critical element of productivity. Topics include industrial engineering involvement in collective bargaining, labor relations, and work practices.

242. Production Planning and Control. 3 Hr. PR: IMSE 140; Coreq: IMSE 214. Principles and problems in forecasting, aggregate planning, material management, scheduling, routing, and line balancing.
243. Facility Planning and Design. 3 Hr. PR: IMSE 242 and IMSE 250. Problems of facility and equipment location. Long-range planning of industrial facilities. Block and detailed layout of manufacturing plants and general offices. Space utilization and allied topics in facility design.

249. Design of Dynamic Materials Systems. 3 Hr. PR: IMSE 140 or consent. Application of industrial engineering theory and practice to selection of material systems and equipment including efficient handling of materials from first movement of raw materials to final movement of finished product. Present quantitative design techniques.

250. Introduction to Operations Research. 3 Hr. PR: IMSE 113 and IMSE 281. Basic tools and philosophies of operations research. Tools include: linear programming, Markov chains, queuing theory, and simulation. Other operations research techniques are presented as they relate to the overall systems philosophy.

251. Analytical Techniques of Operations Research. 3 Hr. PR: IMSE 113 or consent. Nonlinear optimization techniques useful in operations research and industrial engineering studies. Classical optimization techniques, quadratic, geometric and dynamic programming, branch and bound and gradient techniques.

260. Human Factors Engineering. 3 Hr. PR: IMSE 113 and IMSE 140 or equiv. 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.

261. 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.

277. 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.

280 A-Z. Industrial Engineering Problems. 1-3 Hr. PR: Consent. Special Problems.

281. Computer Applications in Industrial Engineering. 3 Hr. PR: ENGR 2 and IMSE 140. Introduction to computer applications in manufacturing. Emphasis on system design and analysis and the role of computers in productivity improvement.

284. Simulation by Digital Methods. 3 Hr. PR: IMSE 113 and IMSE 281 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.

291. Design of Productive Systems 1. 3 Hr. PR: Senior standing (21 hours of required IMSE 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.

292. Design of Productive Systems 2. 3 Hr. PR: Senior standing in industrial engineering. Continuation of IMSE 291.

Interior Design (ID)

31. 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.

32. Interior Design Graphics 1. I, II. 3 Hr. Studio experience reading and drafting architectural plans, elevations, sections, details, and paralines.

33. Space Planning. I, II. 3 Hr. PR: ID 31. Studio experience using two- and three-dimensional techniques to increase understanding of spatial relationships; emphasis on ergonomics, anthropometry, and proxemics.

34. Interior Design Graphics 2. 3 Hr. PR: ID 32. Studio course in spatial graphics; experience in constructing and using perspective grids; perspective sketching and basic color rendering.

36. Interior Materials and Structures. 3 Hr. PR: ID 31 and ID major. Interior design materials including types, qualities, and uses, and calculations of quantities; basic architectural elements related to interior design.

132. Interior Lighting Design. II. 3 Hr. PR: ID 36. 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.

134. 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.

135. History of Interiors and Furniture 2. II. 3 Hr. PR: ID 134. Interiors, furniture, and decorative arts of Europe and America in the nineteenth and twentieth centuries.


140. Computer-Aided Drafting/Design. II. 2 Hr. PR: ID 139. Lecture/studio using computer-aided drafting and design for interior design; emphasis on CADD as a drafting tool.
235. **Contract Interior Design 1.** 3 Hr. PR: ID 138 and ID 139. Studio experience in contract interior design and problems; emphasis on design of offices as work experience.


237. **Contract Interior Design 2.** II. 3 Hr. PR: ID 235. Studio experience in solving design problems related to public spaces, hotels, restaurants, department stores, specialized retail outlets, or health care facilities.

239. **Interior Design Internship.** II. 3-6 Hr. PR: ID 138 and written consent. Supervised, direct experience with a practicing designer or other closely allied professional in a career environment.

240. **Interior Design Seminar.** II. 1 Hr. PR: ID 236. Professionals in interior design discuss professional organizations, ethics, entry-level positions, and business practices.

**Italian (ITAL)**

1. **Elementary Italian.** I. 3 Hr.

2. **Elementary Italian.** II. 3 Hr. Continuation of ITAL 1.

3. **Intermediate Italian.** I. 3 Hr. PR: ITAL 1, 2, or equiv.

4. **Intermediate Italian.** II. 3 Hr. PR: ITAL 3 or consent. Continuation of ITAL 3.

109. **Composition and Conversation.** I. 3 Hr. PR: ITAL 4 or consent.

110. **Advanced Conversation.** II. 3 Hr. PR: ITAL 4 or consent.

190. **Teaching Practicum.** 1-3 Hr.

191. **Special Topics.** I, II. 1-3 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

194. **Professional Field Experience.** 1-18 Hr.

195. **Field Experience.** I, II, S. 1-18 Hr. PR: Consent.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

**Japanese (JAPN)**

1. **Elementary Japanese.** I. 3 Hr.


3. **Intermediate Japanese.** I. 3 Hr. PR: JAPN 1, 2 or equiv.

4. **Intermediate Japanese.** II. 3 Hr. PR: JAPN 3 or equiv.

103. **Advanced Japanese.** 3 Hr. PR: JAPN 3 or 4 or consent.

104. **Advanced Japanese.** 3 Hr. PR: JAPN 103 or consent.

109. **Advanced Japanese.** 3 Hr. PR: JAPN 104 or consent.

110. **Advanced Japanese.** 3 Hr. PR: JAPN 109 or consent.

190. **Teaching Practicum.** 1-3 Hr.

191. **Special Topics.** I, II. 1-4 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.
Journalism (JRL)

1. *Introduction to Mass Communications.* I, II, S. 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.

15. *Basic Journalistic Writing.* I, II, S. 3 Hr. PR: LS 1 and ENGL 1 and ENGL 2 and JRL 1 with a C or better, passage of Journalism Qualifying Exam. Basic media writing with emphasis on English grammar, punctuation and spelling.

18. *News Writing.* I, II, S. 3 Hr. PR: JRL 15 with grade of “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 is available to students possessing superior writing skills; department approval is required.

19. *Copy Editing and Make-up.* I, II, S. 3 Hr. PR: JRL 18. 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.

50. *Publications Problems.* II. 1-3 Hr. Exploration of planning, designing, and printing problems, and dealing with print professionals.

89. *Media Issues and Ethics.* I, II. 2 Hr. 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.

120. *Introduction to Photography.* I, II, S. 3 Hr. Basic techniques of film developing and printing. Students are required to purchase their own film, enlarging paper, chemicals, and have access to a camera. The supplies cost approximately $60-80 per semester. (Lab fees will be assessed for this course.)

130. *Advanced Photography.* I. 3 Hr. PR: JRL 120 or equiv. Designed to equip students to serve all communication media, including magazines, newspapers, and television. A high level of competence is assumed at the outset. Course requirements include a portfolio (general or around a specific theme) and numerous weekly assignments. (Lab fees will be assessed for this course.)

141 A-Z. *Advanced Journalism Problems.* I, II, S. 1-6 Hr. PR: Junior or senior standing in the School of Journalism, foundation courses in one of the sequences. Intensive, independent study; to be approved by the dean.

150. *Teaching Practicum.* 1-3 Hr.

151 A-Z. *Special Topics.* 1-3 Hr.

194. *Professional Field Experience.* 1-18 Hr.

195. *Seminar.* 1-3 Hr.

196. *Senior Thesis.* 1-3 Hr.

197. *Honors.* 1-3 Hr.

221. *Mass Communications Research Methods.* I, II, S. 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.)

231. *Multi-Media Production.* I. 3 Hr. PR: JRL 120. Preparation of two multi-media presentations; participation in a client-oriented project; color theory, slides, scriptwriting, research, and other aspects of visual communications. Supplies cost about $75.00. (Lab fees will be assessed for this course.)

241. *Internship.* I, II, S. 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.)

242. *Practicum.* I, II, S. 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.)

Landscape Architecture (LARC)

5. *Introduction to Landscape Architecture.* I, II, S. 3 Hr. A general overview of the field of landscape architecture, environmental design and planning.

20. *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.)

21. *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.)
23. Computer Graphics in Landscape Architecture. I, II. 3 Hr. PR: LARC 21. 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.)

31. Landscape Construction Materials and Methods. II. 3 Hr. PR: LARC 50. 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.)

50. Theory of Landscape Architectural Design. I. 3 Hr. PR: LARC 21 or equiv. Application of elements and principles of art and design to landscape architecture. (1 hr. lec., 2 2 hr. studios.)

51. Landscape Architectural Design. II. 3 Hr. PR: LARC 50 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.)

60. Ornamental Woody Plants and Groundcovers. I. 3 Hr. PR: BIOL 1 and 3, 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.)

61. Planting Design. II. 3 Hr. PR: LARC 50 and LARC 60. 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.)

112. 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.)

131. Landscape Architectural Construction I. I. 4 Hr. PR: CE 5 or equiv., MATH 3 and 4 or 14 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.)

132. Landscape Architectural Construction 2. II. 4 hr. PR: LARC 131. Study and preparation of parkway plans (road alignment), surface and sub-surface drainage plans, advanced grading plans, and cost estimates. (2 hr. lec., Two 2 hr. studios.)

150. Landscape Architectural Design 2. I. 4 Hr. PR: LARC 23 and LARC 51 and LARC 61. Study of medium scale site design with emphasis on site analysis, design methodology and presentation. (1 Hr. lec., 2-3 hr. studios.)

151. Landscape Architectural Design 3. II. 4 Hr. PR: LARC 131, 150, and 160. 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.)

160. Natural Systems Design. I. 4 Hr. PR: LARC 51 and LARC 61; Conc.: LARC 150. 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.)

161. Interior Plantscaping. II. 2 Hr. PR: BIOL 1 and 3, or PLSC 52. The study of plants appropriate to interior plantscaping and their special needs and uses in design situations. (One day field trip required at student's expense.) (1 hr. lec., one 3 hr. studio.)

191 A-Z. Special Topics. I, II. 1-3 Hr. PR: Consent (obtain approval before registration.) Investigation of topic areas not covered in other classes.

194. Professional Field Experience. 1-18 Hrs.

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.)

248. 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.)

250. Advanced Landscape Architectural Design 1. I. 5 Hr. PR: LARC 132 and LARC 151 and LARC 160. 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.)

251. Advanced Landscape Architectural Design 2. 5 Hr. PR: LARC 250. 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.)

252. 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.)

265. 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.)

350 Landscape Architecture
284. 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.)

Language Teaching Methods (LANG)
190. Teaching Practicum. 1-3 Hr.


194. Professional Field Experience. 1-18 Hr.


196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

221. The Teaching of Foreign Languages. I. 3 Hr. PR: Consent. Required of all students who are prospective foreign language teachers on the secondary level.


Library Science (LS)

Linguistics (LING)
1. Introduction to Language. I, II, S. 3 Hr. General introduction to the nature of human language-its sounds, structure, mechanisms, and forms (oral/sign); its evolution and variation, how it is learned and stored, and how it differs from animal communications systems.

3. Introduction to Language Comparison. I. 3 Hr. (No previous language experience required.) Comparison of various Indo-European languages.


190. Teaching Practicum. 1-3 Hr.

191. Special Topics. I, II, S. 1 and 4 Hr. PR: Consent.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

202. Phonology. I, II. 3 Hr. PR: LING 1 or LING 111. Description of sounds and sound systems in language. Articulatory phonetics. Structuralist and generative approaches to phonemics.

217. Structure of Spanish. I. 3 Hr. PR: 18 Hr. of Spanish and LING 111 or consent. Description of the phonological or grammatical systems of Spanish, with emphasis on contrastive analysis (Spanish/English) and applied linguistics.

247. Structure of Modern French. I. 3 Hr. PR: 18 hr. of French and LING 111 or consent. Study of phonology, morphology, and syntax of modern French together with a contrastive analysis of French and English.

257. Structure of German. II. 3 Hr. PR: 18 hr. of German and LING 111 or consent. Phonological, morphological and syntactical structure of contemporary German language.

267. Structure of Russian. II. 3 Hr. PR: 18 hr. of Russian and LING 111 or consent. Phonological, morphological, and syntactical structure of contemporary Russian.

283. Transformational Grammar. S. 3 Hr. PR: LING 111 and consent. Emphasis on generative syntax in English, German, Romance, and Slavic languages.

284. History of Linguistics. I. 3 Hr. PR: LING 111 or consent. Development of linguistics from Greeks and Romans to contemporary researchers with concentration on major linguists and schools of the nineteenth and twentieth centuries.
Sociolinguistics. I. (Alternate Years.) 3 Hr. PR: LING 1 or LING 111. Linguistic study of geographical and social variation in languages; effects of regional background, social class, ethnic group, sex, and setting; outcomes of conflict between dialect and between languages.

Pro-Seminar. 1-6 hr.* PR: Consent. Special topics.

Management (MANG)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>Database Management Systems</td>
<td>3 Hr.</td>
<td>MANG 101</td>
<td>Introduction to database theory, design, implementation, management, and models; development of database applications for management systems.</td>
</tr>
<tr>
<td>103</td>
<td>Business Application Programming</td>
<td>3 Hr.</td>
<td>MANG 101</td>
<td>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.</td>
</tr>
<tr>
<td>111</td>
<td>Production and Quantitative Business Methods</td>
<td>3 Hr.</td>
<td>MANG 101 and MANG 105</td>
<td>Study of production management systems, including models and techniques for managing production and distribution of goods and services.</td>
</tr>
<tr>
<td>112</td>
<td>Quantitative Business Methods</td>
<td>3 Hr.</td>
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<tr>
<td>160</td>
<td>Management of Small Business</td>
<td>3 Hr.</td>
<td>MANG 105</td>
<td>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.</td>
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<tr>
<td>190</td>
<td>Teaching Practicum</td>
<td>1-3 Hr.</td>
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<tr>
<td>191 A-Z</td>
<td>Special Topics</td>
<td>1-3 Hr.</td>
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<td>194</td>
<td>Professional Field Experience</td>
<td>1-18 Hr.</td>
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<td>195</td>
<td>Seminar</td>
<td>1-3 Hr.</td>
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<td>196</td>
<td>Senior Thesis</td>
<td>1-3 Hr.</td>
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<td>197</td>
<td>Honors</td>
<td>1-3 Hr.</td>
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<tr>
<td>200 A-Z</td>
<td>Special Topics</td>
<td>1-4 Hr.</td>
<td>MANG 105</td>
<td>Special topics relevant to management. (A maximum of nine semester hours in any special topics 200 course offered by the College of Business and Economics may be applied toward bachelor’s and master’s degree.)</td>
</tr>
<tr>
<td>201</td>
<td>Business Information Systems</td>
<td>3 Hr.</td>
<td>MANG 101 and MANG 105</td>
<td>Use of EDP for decision making with emphasis on application in the functions of finance, marketing, personnel, accounting, and operations management.</td>
</tr>
<tr>
<td>205</td>
<td>The Individual and the Organization</td>
<td>3 Hr.</td>
<td>MANG 105</td>
<td>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.</td>
</tr>
<tr>
<td>206</td>
<td>Organizational Theory and Analysis</td>
<td>3 Hr.</td>
<td>MANG 105</td>
<td>Influences of structure on the behavior and dynamics of the business organization, including emphasis on becoming an effective manager.</td>
</tr>
<tr>
<td>211</td>
<td>Advanced Production Management</td>
<td>3 Hr.</td>
<td>MANG 111</td>
<td>Integration of quantitative techniques and their application to production problems. Utilizes cases and projects.</td>
</tr>
<tr>
<td>212</td>
<td>Management Science</td>
<td>3 Hr.</td>
<td>MANG 105</td>
<td>Study and application of quantitative methods to business problems in which deterministic conditions prevail.</td>
</tr>
<tr>
<td>216</td>
<td>Personnel Management</td>
<td>3 Hr.</td>
<td>MANG 105</td>
<td>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 appraising, compensation, safety and health and labor relations.</td>
</tr>
<tr>
<td>217</td>
<td>Personnel and Compensation</td>
<td>3 Hr.</td>
<td>MANG 216</td>
<td>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.</td>
</tr>
<tr>
<td>218</td>
<td>Focal Points in Management</td>
<td>1-3 Hr.</td>
<td>MANG 105</td>
<td>In-depth study of specialized management subjects, e.g., personnel interviewing, job descriptions, consulting, or organizational development. (Each subject is self-contained, spans one-third of a semester, and is valued at 1 credit hour.)</td>
</tr>
<tr>
<td>220</td>
<td>Human Resource Management Research Methods</td>
<td>II. 3 Hr.</td>
<td>MANG 205</td>
<td>Research methods and measurement in human resource management; philosophy of science, ethics in research, research design, and analytical methods.</td>
</tr>
<tr>
<td>222</td>
<td>Management Science</td>
<td>II. 3 Hr.</td>
<td>MANG 212</td>
<td>Study and application of quantitative methods to business problems in which probabilistic conditions prevail.</td>
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</table>
225. Business Policy. 3 Hr. PR: 110 credit hours completed and MANG 101 and MANG 105 and MANG 111 and MKTG 111 and BLAW 111 and FIN 111. Integration of key components of the business curriculum. The case method is utilized to study a wide variety of policy issues including international and ethical concerns.

230. Entrepreneurship. 3 Hr. PR: MANG 105. 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.

231. Systems Analysis. 3 Hr. PR: MANG 101. 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.

232. Systems Design and Development. 3 Hr. PR: MANG 102 and MANG 103 and MANG 231. 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.

260. Practicum in Small Business. 3 Hr. PR: MANG 105. 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.

297. Internship in Management. I, II, S. 1-3 Hr. PR: Department approval. Supervised practical experience in student’s major field; identification, analysis, and evaluation of a specific project. (Student, under departmental supervision, arranges internship with sponsoring organization.)

299. Independent Study. 1-3 Hr. PR: Department approval. Student will develop and complete a program of specialized studies under the supervision of a cooperating instructor.

Marketing (MKTG)

111. Introduction to Marketing. 3 Hr. PR: ACCT 52 and ECON 54 and ECON 55 and ECON 125 and ENGL 1 and ENGL 2 and (MATH 3 or MATH 14 or MATH 28) and (MATH 128 or MATH 15.) Specific functional areas studied include sales management; consumer behavior; market research; product management; promotion management; distribution management; and price policies.

113. Marketing Research. 3 Hr. PR: MKTG 111. Scientific approach to the solution of marketing problems with emphasis on research methods and techniques.

114. Personal Selling. 3 Hr. PR: MKTG 111. 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.

115. Distribution Channels. 3 Hr. PR: MKTG 111. Management of channel systems with emphasis on retail distribution, channel choice, strategies, control, and optimization within the context of role, power, conflict, and communications.

120. Promotion Management. 3 Hr. PR: MKTG 111. An analysis of the promotional mix options; advertising; personal selling; and sales promotion, and the integration of these options into the marketing mix.

130. Product and Price Policies. 3 Hr. PR: MKTG 111. 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.

160. Retail Management. 3 Hr. PR: MKTG 111. 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.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

200 A-Z. Special Topics. 1-4 Hr. PR: MKTG 111. Special topics relevant to marketing.

201. Focal Points in Marketing. 1-3 Hr. PR: MKTG 111. 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.)

203. Sales Management. 3 Hr. PR: MKTG 111. 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.
205. Consumer Behavior. 3 Hr. PR: MKTG 113. The consumer decision process in a marketing framework. Emphasis on psychological and sociological concepts which influence the decision process.

207. Business Logistics Management. 3 Hr. PR: MKTG 115. Examination of transportation, warehousing, materials handling, containerization, inventory control, purchasing, and warehouse location. Significant use made of problem solving with analytical tools.

208. Global Marketing. I. 3 Hr. PR: MKTG 111. 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.

210. Business to Business Marketing. 3 Hr. PR: MKTG 111. A study of marketing to three classes of customers; the commercial market, the institutional market, and government agencies.

211. Marketing Management. 3 Hr. PR: MKTG 111, 12 hours of MKTG. Simulation, through live and written case study, should sharpen skills as the student makes analytical evaluations of marketing problems.

297. Internship in Marketing. I, II, S. 1-3 Hr. PR: MKTG 111 and department approval. Supervised practical experience in student's major field; identification, analysis, and evaluation of a specific project. (Student under departmental supervision, arranges internship with sponsoring organization).

299. Independent Study. 1-3 Hr. PR: MKTG 111 and department approval. Students will develop and complete a program of specialized studies under the supervision of a cooperating instructor.

Mathematics (MATH)

2. 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 2 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.)

3. 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 14 or its equivalent.) Review of the real number system, and algebraic expressions, equations, inequalities, functions, basic matrix operations, and properties of systems of equations, polynomials, counting, and probability.

4. 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 3. (This course is not open to students who have credit for MATH 14 or its equivalent.) Trigonometric functions, identities, vectors, logarithms, complex numbers, and trigonometric equations.

11. Symbolic Logic 2. I, II. 3 Hr. PR: PHIL 10. Continuation of PHIL 10, 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.)

14. 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 3 or 4. A treatment of algebra, analytic geometry, and trigonometry necessary for the study of calculus.

15. Calculus. 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 3 or 4 or MATH 14. Introduction to limits, continuity, derivatives, antiderivatives, definite integrals, and applications of the derivative.


23. 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.

26. Discrete Mathematics. 3 Hr. PR: CS 16 and MATH 15. 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 26. (Not offered on a regular basis.)

28. Finite Mathematics. I, II. S. 3 Hr. PR: Two units of algebra, 1 unit of 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 3, MATH 14, or equivalents.
33. **Introductory Mathematics for Elementary Teachers.** I, II. 3 Hr. PR: 1 unit high school algebra and satisfactory performance on arithmetic Entrance Test. (For elementary education majors only.) Structure of the number systems, techniques of arithmetic computation derived from the properties of the real number system.

34. **Introductory Mathematics for Elementary Teachers.** I, II. 3 Hr. PR: MATH 33 and satisfactory performance on Arithmetic Entrance Test. (For elementary education majors only.) Techniques of arithmetic computation derived from the properties of the real number system, logic, informal, geometry and the metric system.

128. **Introduction to Calculus.** I, II, S. 3 Hr. PR: MATH 3 and MATH 14 and MATH 28 or Consent. For students in other disciplines needing calculus for applications. Limits of sequences and functions, continuity, derivatives, and integrals of polynomials, rational functions, and exponential and logarithmic functions, partial derivatives, maxima and minima.

131. **Algebra and Geometry for Elementary Teachers.** I, II. 3 Hr. PR: MATH 34 and satisfactory performance on Arithmetic Entrance Test. (For elementary education majors only.) Algebra, real numbers, and geometry applied to graphing, problem solving, probability and statistics, calculations, and the computer.

133. **Introductory Modern Algebra for Teachers.** II. 3 Hr. PR: Calculus or consent. (Not open to students with credit for MATH 141.) The basic number systems, decomposition of integers, modular systems, groups, rings, domains, fields, polynomial rings, matrices, vector spaces, linear transformations.

138. **Modern Geometry for Teachers.** I. 3 Hr. PR: MATH 16 or consent. (For prospective high school mathematics teachers.) Foundations of geometry. Special topics from Euclidean, projective, and non-Euclidean geometries.

141. **Introduction to Algebraic Structures.** II. 3 Hr. PR: MATH 163 or consent. A study of groups, rings, and fields together with their substructures, quotients and products, morphisms; the fundamental homomorphism theorems.

143. **Introduction to Linear Algebra.** I. 3 Hr. PR: MATH 17. Introduction to vector spaces as an algebraic system. Emphasis on axiomatic development and linear transformation. Examples from geometry and calculus.

161. **Mathematical Logic I.** I. 3 Hr. PR: PHIL 10 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 106.) (Not offered on a regular basis.)

163. **Introduction to the Concepts of Mathematics.** I, II. 3 Hr. PR: MATH 16 or consent. Elementary logic, basic theory, relations and functions, equivalence relations and decomposition of sets, order relations, cardinality. Emphasis on learning to prove theorems.

168. **History of Mathematics.** I. 3 Hr. PR: MATH 15. Development of mathematics through calculus, with emphasis on mathematical theories and techniques of each period and their historical evolution. (Not offered on a regular basis.)

181. **Topology.** II, S. 3 Hr. PR: MATH 163 or consent. Introduction to metric and topological spaces. Topics include: continuity, convergence, separation, compactness, and connectedness.

190. **Teaching Practicum.** 1-3 Hr.

191. **Special Topics.** 1-3 Hr.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

213. **Partial Differential Equations.** II. 3 Hr. PR: MATH 18. Introduces students in mathematics, engineering, and the sciences to methods of applied mathematics. First and second order equations, canonical forms, wave, heat and Laplace’s equations, representation of solutions.


217. **Applied Mathematical Analysis.** II. 3 Hr. PR: MATH 18. The algebra and differential calculus of vectors, solution of the partial differential equations of mathematical physics, and application of functions of a complex variable.

219. **Seminar in Applied Mathematics.** I, II. 1-12 Hr. PR: Consent. Selected topics in applied mathematics.


221. **Numerical Analysis.** II. 3 Hr. PR: MATH 220 or CS 216 and MATH 241 or consent. Solutions of linear systems by direct and iterative methods. Calculation of eigenvalues, eigenvectors, and inverses of matrices. Applications to ordinary and partial differential equations. (Equiv. to CS 221.)

**Mathematics 355**
224. Mathematics of Compound Interest. II. 3 Hr. PR: MATH 16 or MATH 128. A problem-solving course focusing on the measurement of interest, annuities, amortization schedules, and sinking funds, and the valuation of bonds and other securities.

228. Discrete Mathematics. II. 3 Hr. PR: MATH 163. 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 228.)

231. Introduction to Mathematics for the Elementary Teacher. I, II. 3 Hr. per sem. PR: MATH 34. (Not open to students who have credit for MATH 131.) (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.

232. Introduction to Mathematics for the Elementary Teacher. I, II. 3 Hr. per sem. PR: MATH 34. (Not open to students who have credit for MATH 131.) (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.

241. Applied Linear Algebra. I, II, S. 3 Hr. PR: MATH 17 and MATH 18. 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.


256. Complex Variables. II. 3 Hr. PR: MATH 18. Complex numbers, functions of a complex variable; analytic functions; the logarithm and related functions; power series; Laurent series and residues; conformal mapping and applications.

261. Mathematical Logic. 3 Hr.

269 A-Z. Advanced Topics in Mathematics. I, II, S. 3-9 Hr. PR: Consent. An independent but directed study program the content of which is to be mutually agreed upon by the individual student and instructor.

Mechanical and Aerospace Engineering (MAE)

Note: Courses in MAE are open only to engineering majors except those marked with an asterisk (*).

12. Introduction to Aerospace Engineering. 3 Hr. PR: MATH 15 and ENGR 2. Fundamental physical quantities of a flowing gas, standard atmosphere, basic aerodynamic equations, airfoil nomenclature, lift, drag, and aircraft performance are studied. Digital computer usage applied to aerodynamic and performance problems and aircraft design. (3 hr. lec.)

32. Introduction to Mechanical Engineering. 3 Hr. PR: Sophomore standing in Engineering. Introduction to principles and techniques in mechanical engineering. (1 hr. lec; 4 hr. lab.)

41. Statics. 3 Hr. PR: MATH 15. Engineering applications of equilibrium of forces. Vector operations, couple and moment of force, resultantst (two and three dimensions), center of gravity and center of pressure, static friction, free body diagrams, equilibrium, trusses and frames. (3 hr. lec.)

42. Dynamics. 3 Hr. PR: MAE 41 and MATH 16. 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.)

43. Mechanics of Materials. 3 Hr. PR: MAE 41 and MATH 16. 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.)

53. Undergraduate Dynamics and Strength Laboratory. 1 Hr. PR: MAE 42 and MAE 43. Basic experiments in dynamics and strength of materials. Mechanical properties and stress-strain curves of materials for tension, shear and tension, shear and torsion. Electrical resistance strain gages, stress concentrations through fringe pattern analysis, friction, wear, hardness, fatigue and fracture of metals. Structural dynamics of vibrating beams. (3 hr. lab.)

100. Inspection Trip. 0 Hr. (Credit) PR: Senior standing.

101. Thermodynamics. 3 Hr. PR: PHYS 11 and MATH 16. 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.)
104. Analysis of Engineering Systems. 3 Hr. PR: ENGR 2 and MATH 18. Analytical, numerical, computational techniques to analyze engineering systems by using computers. Introduction to computers, approximations and errors, mathematical model, solution strategies, systems of algebraic equations, curve fitting, regression analysis, interpolation, numerical differentiation, and integration, differential equations.

113. Applied Kinematics and Dynamics. 3 Hr. PR: MAE 42. Analysis of motion and forces in linkages, gears, cams and other basic mechanisms. Synthesis of linkages, cam, and gear profiles. Techniques introduced include algebraic, graphic, and numerical modeling. (3 hr. lec.)

114. Fluid Mechanics. 3 Hr. PR: MAE 41. Fluid statics, laminar and turbulent flow of compressible and incompressible fluids, flow measurements, open channel flow, and kinetics of fluids. (3 hr. lec.)

115. Experimental Fluid Dynamics. 1. 3 Hr. PR: ENGL 2 and MAE 117. Design, data analysis, and reports of sub- and supersonic wind tunnel testing; pressure distribution of bodies, boundary layer determination, turbulence measurements, force tests, stability and performance determinations; corrections for scale and jet boundary effects. (2 hr. lec. 3 hr. lab.)

116. Fluid Dynamics 1. 3 Hr. PR: MATH 18 and MAE 114. Kinematics and dynamics of vector fluid flow fields; perfect fluid theory of thin airfoils; lifting line theory for finite span wings. (3 hr. lec.)

117. Fluid Dynamics 2. 3 Hr. PR: MAE 101 and MAE 114. Compressible, nonviscous fluids analysis and design; isentropic flow, Prandtl-Meyer expansions, shock waves, airfoils in compressible flow, and small perturbation theory. Introduction to viscous fluid dynamics and boundary layer theory. (3 hr. lec.)

120. Flight Vehicle Design. I. 3 Hr. PR: MAE 12 and MAE 146 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.)

121. Space Systems Design. II. 3 Hr. PR: MAE 120 or MAE 183. Conceptual and/or preliminary design of space vehicles and/or systems including structures, CAD, orbital mechanics, propulsion, thermal control, life support, power systems, communications, system integration and cost analysis. (1 hr. lec., 6 hr. lab.)

122. Vibrations and Controls. 3 Hr. PR: MAE 113. Fundamentals of vibration and control theories. Free and forced vibration of single- and multiple-degree of freedom systems. Response and stability analysis of linear control systems. (3 hr. lec.)

132. Applied Strength of Materials. 3 Hr. PR: MAE 43. Overview of stress, strain and deflection; energy methods in deflection and column design, theories of failure and factor of safety and material considerations in design. Design, fatigue considerations in design, torsion, combined loadings, factor of safety and material considerations in design. (3 hr. lec.)

135. Design of Mechanical Elements. 3 Hr. PR: MAE 132. Mechanical design of such mechanical elements as screws and fasteners, welded joints, springs, contact and journal bearings, gears, shaft design, couplings, brakes and clutches, and ropes and chains. (3 hr. lec.)

141. Applied Thermodynamics. 3 Hr. PR: MAE 101. Applications to mechanical systems of fundamentals from MAE 101; 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.)

145. Thermal and Fluids Laboratory. 1 Hr. PR: MAE 101. 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.)

146. Flight Mechanics 1. 4 Hr. PR: MAE 42 and MAE 116. Fundamentals of aircraft static and dynamic stability and control; aerodynamic design of control surfaces. General equations of unsteady aircraft motion. Introduction to aerodynamic transfer functions and automatic control systems. (4 hr. lec.)


158. Heat Transfer. 3 Hr. PR: MAE 101 and MAE 114. Steady state and transient conduction. Thermal radiation. Boundary layer equations for forced and free convection. (3 hr. lec.)

160. Flight Vehicle Structures 1. 3 Hr. PR: MAE 43. Three-dimensional equilibrium, strain-displacement and stress-strain relations. Non-symmetric bending, shear and torsion of thin-walled open and closed sections, including multi-celled sections. Principles of stressed skin and stiffened structures. Column buckling, local instability, effective width and diagonal tension fields. Introduction to composite materials and finite element analysis of components in aircraft and spacecraft.

170. 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.)
181. *Mechanical Engineering Instrumentation.* 3 Hr. PR: MATH 18. Basic elements of general measurement systems. Principles of first and second order system input/output behavior. Study of common intermediate and output devices. Data collection and processing using microcomputers. Design of a specific measurement system. (2 hr. lec., 3 hr. lab.)

183. *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 considerations. (6 hr. lab.)

184. *Engineering Systems Design.* 3 Hr. PR: MAE 183. 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.)

190. *Teaching Practicum.* 1-3 Hr.

191. *Special Topics.* 1-3 Hr.

194. *Professional Field Experience.* 1-18 Hr.

195. *Seminar.* 1-3 Hr.

196. *Senior Thesis.* 1-3 Hr.

197. *Honors.* 1-3 Hr.

200. *Advanced Mechanics of Materials.* 1. 3 Hr. PR: MAE 43 or consent. Advanced topics in applied stress analysis; stress concentrations, strain energy, beams, thick-walled cylinders, torsional warping, fracture. (3 hr. lec.)

210. *Kinematics.* 3 Hr. PR: MAE 113 and MATH 18 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.)

215. *Experimental Fluid Dynamics.* 2. 3 Hr. PR: MAE 115. Continuation of MAE 115 with increased emphasis on dynamic measurements. Shock tube/tunnel and subsonic and supersonic measurements. Experiments include optical techniques, heat transfer to models, and viscous flow measurements. Error analysis of test data. (2 hr. lec., 3 hr. lab.)

216. *Applied Aerodynamics.* 3 Hr. PR: MAE 116. Chordwise and spanwise airload distribution for plain wings, wings with aerodynamic and geometric twist, wings with deflected flaps, and wings with ailerons. Section induced drag characteristics. (3 hr. lec.)

217. *Hypersonic Gas Dynamics.* II. 3 Hr. PR: MAE 117 or consent. Hypersonic shock and expansion wave relations; hypersonic inviscid flowfields: approximate and numerical methods, blast wave theory; hypersonic boundary layers and aerodynamic heating. (3 hr. lec.)


226. *Mechanics of Composite Materials.* 3 Hr. PR: MATH 17 and MAE 43. Fundamental methods for structural analysis of fiber reinforced composites. Particularities of composite applications in design and manufacturing of structural components: performance tailoring, failure criteria, environmental effects, joining and processing. (3 hr. lec.)

232. *V/STOL Aerodynamics.* 3 Hr. PR: MAE 117. Fundamental aerodynamics of V/STOL aircraft. Topics include propeller and rotor theory, helicopter performance, jet flaps, ducted fans, and propeller-wing combinations. (3 hr. lec.)

240. *Problems in Thermodynamics.* 3 Hr. PR: MAE 141 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.)

241. *Flight Mechanics.* 2. 3 Hr. PR: MAE 146. 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.)

242. *Flight Testing.* 3 Hr. PR: MAE 146. Applied flight test techniques and instrumentation, calibration methods, determination of static performance characteristics, and introduction to stability and control testing based on flight test of Cessna Super Sky-wagon airplane. Flight test data analysis and report preparation. (1 hr. lec., 6 hr. lab.)

358 *Mechanical and Aerospace Engineering*
243. Bioengineering. 3 Hr. PR: MAE 43 and PHYS 201 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.)

244. Introduction to Gas Dynamics. 3 Hr. PR: MAE 114 or consent. Fundamentals of gas dynamics, one-dimensional gas dynamics and wave motion, measurement, effect of viscosity and conductivity, and concepts of gas kinetics. (3 hr. lec.)

249. Space Mechanics. 3 Hr. PR: MATH 18 and MAE 42. 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.)

254. Applications in Heat Transfer. 3 Hr. PR: MAE 158. 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.)

262. Internal Combustion Engines. 3 Hr. PR: MAE 101 or MAE 141. 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.)

264. Heating, Ventilating, and Air Conditioning. 3 Hr. PR: MAE 141 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.)

265. Aeroelasticity. 3 Hr. PR: MAE 160. Vibrating systems of single degree and multiple degrees of freedom, flutter theory and modes of vibration, torsional divergence and control reversal. (3 hr. lec.)

270. Microprocessor Applications in Mechanical Engineering. 3 Hr. PR: MAE 181. 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.)


280. Aerospace Problems. 1-6 Hr. PR: Upper-division and graduate standing.

282. Engineering Acoustics. 3 Hr. PR: MATH 18 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.)

284. Applied Feedback Control. 3 Hr. PR: MAE 122 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.)

285. Thesis. 2-6 Hr. PR: Senior standing and consent.

286. Design of Robotic Systems. 3 Hr. PR: MAE 113 or 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.)

290. Seminar. 1-6 Hr. PR: Junior, senior, or graduate standing, and consent.


292. Research Problems. 2-6 Hr. PR: MAE 291 or consent. Performance of the research project as proposed in MAE 291. Project results are given in written technical reports, with conclusion and recommendations.

294. Special Topics. 1-6 Hr. PR: Junior, senior or graduate standing, and consent.

299. Special Problems. 1-6 Hr. PR: Consent.

Military Science (MILS)

Army ROTC
First Year
1. 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 American civil-military relations.

2. 2 Hr. The development of American military institutions, policies, experience, and traditions in peace and war are discussed. Past wars are examined in the perspective of modern military thought.
Second Year
3. 2 Hr. Introduction to basic leadership and management with emphasis on the fundamental concepts and skills required of today’s citizen-soldier.

4. 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.

Third Year
105. 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 service, 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.

106. 3 Hr. PR: MILS 105 or consent. Race relations/drug abuse seminars are conducted to familiarize students with the leadership techniques involved in coping with these unique social problems. Additionally, practical training is conducted in squad- and platoon-level tactics. The course is designed to prepare the student for Advanced Camp.

Fourth Year
107. 3 Hr. PR: MILS 105 and 106 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 service, are studied.

108. 3 Hr. PR: MILS 107 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.


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.

191 A-Z. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

250. Evaluating capital and Operating Costs. 3 Hr.


Multidisciplinary Studies (MDS)
1. The Nature of Evidence. 3 Hr.

2. Genetics, Society and Human Affairs. II. 3 Hr. (May be credited to University LSP Cluster B or C.) Origin of life, selection, mutation, eugenics, genetic engineering, genetics and evolution, genetics and medicine, genetics and politics, decision making, social and ethical issues in human genetics. For students interested in heredity and heritage.

3. Intro to Library Research. I, II. 1 Hr. Teaches basic library research skills focusing on the WVU Libraries Online Catalog and various indexing tools used to find books and periodical articles. Incorporates hands-on practice with electronic and conventional resources for term paper preparation.

40. Intro to Women’s Studies. 3 Hr.

50. 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.

60. Human Sexuality. I, II. 3 Hr. (May be credited to University LSP Cluster B or C.) A study of the biological, behavioral, and societal aspects of sexuality. Issues considered include: changing fecundity; socio-legal implications; sex roles; venereal disease; populations; erotica; aging; dysfunctions; decision-making skills for sex-related issues.

360 Multidisciplinary Studies
70. *The Human Environment*. I. 3 Hr. (May be credited to University LSP Cluster B or C.) An examination of some of the facets of the environmental deterioration and corrective public policies. An interdisciplinary, non-prerequisite course for all students in the University.

80 A-Z. Special Topics. I, II. 1-3 Hr.

90. *Society and Food*. I, II. 3 Hr. (May be credited to University LSP Cluster B or C.) Exploration on a global basis of interactions of man and environment as reflected in food production systems. Relation of food supply and use to development or maintenance of social and political institutions.

91. *Introduction to Technology and Society 1*. I or II. 3 Hr. A team-taught introduction to technology and society in the (May be credited to University LSP Cluster A or C.) Victorian era.

92. *Introduction to Technology and Society 2*. I or II. 3 Hr. PR: MDS 91. (May be credited to University LSP Cluster B.) Continuation of MDS 91.

99. *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.

100. *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.

102. *Introduction to Celtic Studies*. 3 Hr. PR: ENGL 1. A team-taught, multi-disciplinary course focusing on ancient and contemporary Celtic cultures (Britany, Cornwall, Ireland, Isle of Man, Scotland, Wales). Course topics include Celtic history, religion, myth, literature, language, politics, art and music.

190. *Teaching Practicum*. 1-3 Hr.

191 A-Z. Special Topics. 1-3 Hr.


195. *Seminar*. 1-3 Hr.

196. *Senior Thesis*. 1-3 Hr.

197. *Honors*. 1-3 Hr.

250. *Issues in Gerontology*. I, II. 3 Hr. PR: Consent. Analysis of societal aspects of aging and exploration of current issues in gerontology. Relating of gerontological concepts to previous course work and field experience.

**Music (MUSC)**

10. *Music Convocation*. (Required for all music majors for six semesters. May be repeated.) Faculty, guest artist, and student performances, lectures and forums on major musical issues and topics.

19. *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.


29. *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.

30. *Introduction to Music*. I, II. 3 Hr. (Not open to music majors.) Introductory course designed to develop an appreciation and understanding of the significance of music as a fine art, and to help the student develop intelligent listening habits.

31. *Introduction to Music Listening*. II. 1 Hr. (For music majors only.) Guided listening to representative compositions of various traditions of Western Music. Development of ability to describe elements of compositions and style using a standard musical vocabulary.

33. *History of Western Musical Traditions 1*. I. Survey of Western musical traditions from the Christian era to c. 1800 in their stylistic historic, and social settings.

34. *WR History of Western Musical Traditions 2*. Survey of Western musical traditions from c. 1800 to the present in their stylistic, historic, and social settings.

40. *Intro. to Music Education*. II. 1 Hr. Introduction to purposes of school music education, students as learners, content and structure of school music programs, and music teacher knowledge and skills.

41. *Fundamental Music Skills*. I, II. 2 Hr. (Not open to music majors.) Development of skills for future classroom teachers. Basic understanding of rhythm, dynamics, tone color, pitch, and form.
42. *Teaching Elementary School Music*. I, II. 2 Hr. PR: MUSC 41 or consent. (Not open to music majors.) Leading and teaching of songs. Guiding children in conceptual development in music through activities approach.

44. *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.

45. *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.

46. *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.

47. *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.

48. *Strings, Percussion, and Classroom Equipment*. 2 Hr. (For vocal and general music education majors only.) Techniques of teaching string and percussion instruments, and instruction in the applications and operation of classroom electronic equipment. Bi-weekly lab.

49. *Vocal Pedagogy*. I, II. 2 Hr. PR: Two semesters of voice study. Techniques of voice culture; applicable to school choral activities and instruction of young singers.

51. *Fundamentals of Conducting*. I. 2 Hr. PR: MUSC 63 and 64. Basic conducting skills, including beat patterns, expressive gestures, cues, and the fermata; terminology; tempo changes; and the mechanics of score reading.

52. *Conducting and Score Interpretation*. I, II. 2 Hr. PR: MUSC 51 or consent. Developments of techniques of score study; rehearsal preparation. Rehearsals of laboratory ensemble. Study of string, wind, and choral scores.


60. *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.)

61. *Aural Theory 1*. I. 2 Hr. The four aural theory courses (MUSC 61, 63, 65, and 67) form a unit of instruction devoted to the development of aural skills such as sight-singing, melodic and harmonic dictation, identification of chords, chord progressions, modulations, and non-harmonic tones.

62. *Written Theory 1*. II. 2 Hr. Elementary theory (scales, keys, intervals, triads, and dominant seventh chords) and introduction to diatonic harmony (part-writing and analysis).


66. *Written Theory 3*. I. 2 Hr. PR: MUSC 64. Continuation of MUSC 64. Diatonic and chromatic harmony including part-writing, harmonization of melodies, and harmonic analysis with seventh chords. Modulations, and foreign chords. Introduction to counterpoint.


68. *Written Theory 4*. II. 2 Hr. PR: MUSC 66. 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.

70. *Piano Class Level 0*. I, II. 1 Hr.

71. *Piano Class Level 1/2*. I, II. 1 Hr. Audition for placement is required.

72. *Piano Class Level 1*. I, II. 1 Hr. Audition for placement is required.

73. *Piano Class Level 1 1/2*. I, II. 1 Hr. Audition for placement is required.

74. *Piano Class Level 2-2 1/2*. I, II. 1-2 Hr. (May be repeated for credit.) Audition for placement is required.

75. *Piano Class Advanced*. I, II. 1-2 Hr. (May be repeated for credit.) Audition for placement is required.

76. *Guitar Class 1*. I, II. 1 Hr. (May be repeated for credit.)
77. Guitar Class 2. I, II. 1 Hr. (May be repeated for credit.) PR: MUSC 76 or permission.
78. Voice Class 1. I, II. 1-2 Hr. (May be repeated for credit.)
79. Voice Class 2. I, II. 1-2 Hr. (May be repeated for credit.) PR: MUSC 78 or permission.
80. Chamber Music: Freshman Percussion. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
81. Chamber Music: Percussion 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
82. Chamber Music: Percussion 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
83. Chamber Music: Percussion 3. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
84. Chamber Music: Gamelan. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
85. Chamber Music: Steel Band 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
86. Chamber Music: Steel Band 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
87. Chamber Music: Steel Band 3. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
88. Chamber Music: Ethnic. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
89. Chamber Music: Percussion Other. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
90. Chamber Music: Jazz Big Band 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
91. Chamber Music: Jazz Big Band 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
92. Chamber Music: Jazz Small Group 1. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
93. Chamber Music: Jazz Small Group 2. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
94. Chamber Music: Jazz Small Group 3. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
95. Chamber Music: Jazz and Ethnic. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
96. Chamber Music: Jazz Experimental. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
97. Chamber Music: Jazz Vocal Ensemble. I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
98. Chamber Music: Jazz Other. I, II. (May be repeated for credit.) PR: Consent.
100A-D. Band. I, II. 0-2 Hr. (May be repeated for credit.) Wind Ensemble, Symphonic Band, Concert Band, Marching Band, Varsity Band.
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.
105. University Choir. I, II. 0-2 Hr. (May be repeated for credit.)

The following applies to MUSC courses 106-127. These courses are open to qualified students in any field. An audition for placement may be required. Credit as follows:
1. For music majors, 2 or 4 hr. credit for each 60-minute weekly lesson; the credit varies with expectations for practice according to the curriculum.
2. For others, a maximum of one 30-minute lesson per week for 2 hr. credit.
3. Students in lower grade levels of Applied Music may be grouped in small classes for initial instruction. 1-2 hr. 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 required.
112. **Applied Music: Guitar Jazz Bass.** 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.

129. **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.

130. **Music in Appalachia.** I. (Alternate Years.) 3 Hr. (Not open to music majors.) Survey of traditional instrumental and vocal music of southern Appalachia. History, style characteristics, and performance techniques involving live and recorded examples emphasizing those found in West Virginia.

135. **Music in Western Culture.** I. 3 Hr. PR: MUSC 30 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.

136. **Music of the Modern Age.** II. 3 Hr. PR: MUSC 30 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.

137. **Great Composers.** I. 3 Hr. PR: MUSC 30 or consent. (Not open to music majors.) A study of major works by a chosen composer or group of composers.

138. **Introduction to History of Jazz.** II. 3 Hr. PR: MUSC 30 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.

140. **Chamber Music: Brass.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

141. **Chamber Music: Guitar.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

142. **Chamber Music: Piano-4 Hand.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

143. **Chamber Music: Strings.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

144. **Chamber Music: Woodwind.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

145. **Chamber Music: Vocal.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

146. **Chamber Music: Mixed Ensemble.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

147. **Chamber Music: Mountaineer Singers.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

148. **Chamber Music: New Music.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.

149 A-Z. **Chamber Music: Other.** I, II. 0-1 Hr. (May be repeated for credit.) PR: Consent.
151. **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.

152. **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.

153. **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).

160. **Composition.** I, II. 2 Hr. PR: MUSC 68 or consent. (May be repeated for credit; max. 8 hr.) Creative writing.

161 A-Z. **Diction for Singers.** I, II. 2 Hr. (May be repeated for credit; max 8 hr.) PR: Consent. Phonetics, phonetic symbols, and pronunciation in singing in alternating semesters in English, Italian, Latin, Spanish, German, and French. Other aspects of language that will aid in comprehension of song, oratorio, and operatic texts considered.

171. **Instrumentation.** I. 2 Hr. PR: MUSC 64. Study of characteristics of band and orchestral instruments and their use in scoring.

172. **Orchestration and Band Arranging.** II. 2 Hr. PR: MUSC 171. Problems in scoring for orchestra and band.

174. **Choral arranging.** 2 Hr.

190. **Teaching Practicum.** 1-3 Hr.

191. **Special Topics.** 1-3 Hr.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

200 A-Z. **Directed Music Studies.** I, II, S. 1-4 Hr. (May be repeated for credit.) PR: Consent. Studies in performance, music education, music theory, music history, composition; includes directed or independent study in special topics.

210. **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.

212. **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.

213. **Introduction to Jazz Improvisation.** I. 2 Hr. PR: MUSC 63 and MUSC 64 and Proficiency Level 4. Development of improvisatory skills in the jazz idiom using melodic, harmonic, and rhythmic motives and patterns, and the application of knowledge of tonal centers, chord progressions, and junctions.

214. **Advanced Jazz Improvisation.** II. 2 Hr. PR: MUSC 213 or consent. Continuation of MUSC 213. Analysis of chord progressions with emphasis on chord substitutions, turnbacks, and scales. Development of jazz repertoire through performance.

216. **Methods and Pedagogy.** I. 0-2 Hr. PR: MUSC 110 and Junior standing or consent.

217. **Methods and Pedagogy.** II. 1-2 Hr. PR: MUSC 216.

218. **Repertoire.** I. 0-2 Hr.

219 A-Z. **Repertoire.** II. 0-2 Hr.

221. **European Music before 1500.** A study of European sacred and secular monophonic and polyphonic traditions in their stylistic, historic, and social settings to the end of the fifteenth-century.

222. **Music of the Sixteenth and Seventeenth Centuries.** A study of European sacred and secular, instrumental and vocal traditions in their stylistic, historic, and social settings from c. 1500 to c. 1700.

223. **Music of the Eighteenth Century.** A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c. 1700 to c. 1800.
224. **Music of the Nineteenth Century.** A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c. 1800 to c. 1900.

225. **Music of the Twentieth Century.** A study of Western instrumental and vocal traditions in their stylistic, historic, and social settings from c. 1900 to the present.

226. **History of Jazz.** 3 Hr. PR: MUSC 33 and MUSC 34. History and repertory of jazz from its Afro-American origins to 1975 with attention to its major exponents (including Joplin, Armstrong, B. Smith, Morton, Ellington, Gillespie, Parker, Davis, and Coltrane) and its evolving style.

227. **Women in Music.** I. (Alternate Years.) 3 Hr. PR: MUSC 33 and MUSC 34 or consent. Critical examination of female musicians and their range of musical styles including composers, repertoire, performers, etc., from Medieval period through today; feminist methodology includes re-examination of history and gender theory. (Travel expense possible; see current syllabus.)

230. **Music of Africa.** 3 Hr. Traditional music of selected areas of Africa south of the Sahara with particular reference to East Africa. The diverse musical cultures with emphasis on historical background, instruments, ensembles, forms, styles, and music in its social context.

240. **Clinic Chorus Band Orch.** 1 Hr.

243 A-Z. **Music Workshops.** I, II, S. 1-2 Hr. (May be repeated for credit.)

245. **Marching Band Techniques.** 2 Hr.


260. **Upper-Division Composition.** I, II. 2 Hr. (May be repeated for credit.) PR: Two semesters MUSC 160, or consent based on scores submitted. Creative writing with emphasis on practical composition for performance.

263. **Counterpoint.** I. 2 Hr. PR: MUSC 68 or consent. Sixteenth century counterpoint.

264. **Counterpoint.** II. 2 Hr. PR: MUSC 68 or consent. Eighteenth century counterpoint.

266. **Major Project in Theory, Composition, or Music History.** I, II. 2 Hr. (Not available for graduate credit.) PR: MUSC 68.


269. **Analysis of 20th-Century Art Music.** II. (Alternate years.) 3 Hr. PR: MUSC 68 or by permission of instructor. Detailed study of the materials and structure of European music of the eighteenth and nineteenth-centuries.

273. **Arranging for Small Jazz Ensemble.** 2 Hr. PR: MUSC 171 and MUSC 173. Emphasis on small ensembles comprising three to nine players.

274. **Arranging for Large Jazz Ensemble.** 2 Hr. PR: MUSC 273 or consent. Continuation of MUSC 273, with emphasis on arranging for big band and studio jazz ensemble.

275. **Jazz Harmony.** II. 2 Hr. PR: MUSC 68 and MUSC 213 and MUSC 214 or consent. Advanced jazz theory and harmony. Ear training, keyboard skills, chord voicing, and substitutions.

299. **Recital.** I, II. 0-2 Hr. (Not available for graduate credit.) To be used to fulfill the applied major graduation requirement only when the student has achieved Proficiency Level 9. Students who have reached Level 6 may receive 1 hour credit, which may not be used to fulfill the graduation recital requirement.

**Native American Studies (NAS)**

100. **Intro: 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.

191 A-Z. **Special Topics.** I, II, S. 1-3 Hr. Interdisciplinary studies of Native American issues. Topics change so students can enroll more than once.
194. **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.

290. **Independent Study.** I, II, S. 1-6 Hr. PR: Consent. Individual study of an interdisciplinary issue in Native American Studies.

**News-Editorial (N-E)**

108. **The Community Newspaper.** I. 2 Hr. (Open to all University students.) Fundamental problems and techniques in operation of community newspapers.

118. **Advanced Reporting and Editing.** I. 3 Hr. PR: JRL 19. Students report and write in-depth news stories and features. They then lay out the stories as news packages using headlines, photos and infographics using the School's desktop publishing lab. The emphasis is on the continued development of reporting skills, including interviewing, document research and the internet.

128. **Reporting of Public Affairs.** II. 3 Hr. PR: JRL 19 or PR 119. Students develop and cover traditional news beats, including police, courts, education, health/medicine, business and city/state government. The course emphasizes developing stories and sources, sharpening interview skills and learning analytical techniques. Students will visit public agencies, including circuit court, police headquarters, city hall and county archives.

190. **Teaching Practicum.** 1-3 Hr.

191. **Special Topics.** 1-3 Hr.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

220. **Writing for Magazines.** I, II. 3 Hr. PR: JRL 18. Developing, writing and editing news features, personality profiles, color pieces, issue-oriented articles, and human impact stories for news, public relations and film. The course emphasizes narrative, descriptive, analytic and story-telling skills. One-on-one professor/student conferences stress story-building and revision.

225. **High School Publications Advising.** II. 3 Hr. PR: JRL 19 and ADV 113. (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. (Offered alternate years.)


228. **Law of the News Media.** I, II. 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.

230. **Editorial and Critical Writing.** I. 3 Hr. PR: JRL 19 or PR 119. 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.

**Nursing (NSG)**

10. **Health and the Caring Professions.** I, II, S. 3 Hr. Health promotion and risk reduction; data collection; cultural diversity; values that contribute to health; interpersonal communication in promoting professional relationships.

21. **Human Responses 1.** I. 3 Hr. PR: NSG 10 and SOPH. standing or consent; computer technology. Human responses that promote health throughout the life span; individual health assessment.

23. **Seminar 1: Professional Role Development.** I. 1 Hr. PR: NSG 10, Sophomore standing or consent. Characteristics of self in role transition; values and beliefs; personal and professional behaviors in nursing care.

25. **Nursing Interventions 1.** I. 3 Hr. Conc.: NSG 21; Soph. 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.

41. **Human Responses 2.** II. 2 Hr. PR: NSG 25; Conc.: NSG 45. Enhances student understanding of human responses to minor deviations in health throughout the life span; professional role in health restoration; family health assessment.

43. **Seminar II: Professional Role Development.** II. 2 Hr. PR: NSG 23. Emphasis on developing caring behaviors through examination of issues related to moral/ethical integrity; values, culture, and family.

Native American Studies 367
45. Nursing Interventions 2. II. 4 Hr. PR: NSG 25. Critical thinking in the application of the nursing process to individuals with minor deviations in health protection, health restoration, and health promotion/maintenance.

61. Health Assessment. S. 3 Hr. PR: NSG 25 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 recordings of data for clients across the life span.

132. Human Response: Phys Dysfunction. I, II. 5 Hr. PR: NSG 61 or consent. COREQ: NSG 135. The focus is on the human response to physiological system dysfunction. The emphasis is on the professional nursing role in complex physiological health restoration.

133. Seminar III: Professional Role Development. I. 2 Hr. PR: NSG 43 or consent. Managing individual/family/group systems. Focus on ethical decision making in health care situations.


140. Professional Role Transition. I. 3 Hr. PR: WV 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.

143. Seminar VII: Professional Role Development. II. 3 Hr PR: NSG 140. Seminar with emphasis on the role of the professional nurse within the multidisciplinary team. Focus is on decision making in life-span ethical dilemmas and on effective communication within the health care team.

151. Psychosocial Dysfunction. I, II. 2 Hr. PR: NSG 61 or consent; Conc: NSG 155. Human response to multiple system dysfunction; professionals role in complex psychosocial health restoration.

153. Seminar IV: Professional Role Development. II. 2 Hr. PR: NSG 133 or consent. Communication skills within the multidisciplinary team; collaborative roles and team dynamics.

155. Nursing Interventions 4. I, II. 5 Hr. PR: NSG 61 or consent. Advanced psychosocial assessment and independent nursing interventions to promote health restoration; advanced collaborative nursing activities.

156. Alterations in Psychosocial Health. I, II. 3 Hr. PR: PSYC 141 or consent, conc: NSG 151, 155. Normal psychosocial functions change as a result of altered health; integration of developmental changes and preventive aspects of health.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

199. Writing in Nursing. 1 Hr. Integration of the content learned in selected courses with writing about important topics; must be taken concurrently with an approved Professional Nursing Role Seminar.

221. System Responses to Physiological Dysfunction. I, II. 3 Hr. PR: Senior standing in NSG or consent. Coreq: NSG 225. 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.

223. Seminar 5:Professional Role Development. I, II. 2 Hr PR: NSG 153 or consent. The professional's role in creating and managing the health care milieu; focus is on the nurse manager role and interventions in support of the client/ family experiencing acute or long term health problems.

225. Nursing Interventions 5. I, II. 6 Hr. PR: Senior standing in Nursing or consent. Coreq: NSG 221. 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.

233. Seminar VIII:Professional Role Synthesis. I, II. 3 Hr. PR: NSG 143. 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.

241. Community Response to Health Promotion. I, II. 3 Hr. PR: Senior standing in Nursing or consent. Coreq: NSG 245. Community Health Nursing processes with emphasis on the professional nursing role in the assessment of community health needs and identification of health action potential.
Seminar 6: Professional Role Development. I, II. 2 Hr PR: NSG 223 or consent. Emphasis on professional nursing role in health promotion and discuss prevention in groups/communities of vulnerable populations. Focuses on multidisciplinary team approaches to problem solving in community health.

Nursing Interventions 6. I, II. 6 hr. PR: Senior standing in Nursing or consent. 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 is on vulnerable populations.

Introduction to Nursing Research. I, II, S. 3 Hr. PR: STAT 101 or consent. Theory, concepts and methods of the research process intended to provide a basic understanding that is necessary for intelligent consumership of research findings.


Orientation (ORIN)
1. Orientation to University Life. I, II. 1 Hr. Open only to new students in their first semester at the University. Study of the values, orientation, and emphasis which characterize higher education and an explanation of the nature of a university and its role.

2. Orientation to Majors and Professions. 1 Hr. Introduces students to requirements of specific academic majors and professions. Topics also include career opportunities, internships, study abroad, fellowships, and graduate study opportunities. (Pass/fail grading only.)

Career Series-Career Planning Exploration. I, II. 1 Hr. Exploration of careers with special emphasis on individual interests, abilities, and values. Most beneficial to freshmen and sophomores, but appropriate for juniors and seniors. (Pass/fail grading only.)

Career Series-Job Search. I, II. 1 Hr. PR: ORIN 51 recommended. Methods of looking for a job-employer expectations, interviewing, resumes, letter writing etc. Should be taken next to last semester, but can be taken at other times. (Pass/fail grading only.)

Personal and Interpersonal Development. 1 Hr. (Pass/fail grading only.)

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.)

Exploring Career Options. 1 Hr. Graded on a Pass/fail basis only. 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.

Becoming Career Ready. 1 Hr. Graded on a Pass/fail basis only. 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.

Gaining Experience. 1 Hr. Graded on a Pass/fail basis only. 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.

Finding the First Job. 1 Hr. Graded on a Pass/fail basis only. This class helps students develop and execute a strategy for obtaining a first job that is consistent with the student's career interests.

Starting Your Career. 1 Hr. Graded on a Pass/fail basis only. This class helps students prepare for the issues they will encounter early in their careers.

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.)

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.)

Teaching Practicum. 1-3 Hr.

Special Topics. I. 1 Hr. PR: Sophomore or higher standing and consent. Students will participate in ORIN 1 as assistants to faculty teaching ORIN 1. Practicum form of study leading to an understanding of the values, orientations, and emphases which characterize higher education. (Pass/fail grading only.)

A-Z. Special Topics. I. 1 Hr. PR: Sophomore or higher standing and consent. Students will participate in ORIN 1 as assistants to faculty teaching ORIN 1. Practicum form of study leading to an understanding of the values, orientations, and emphases which characterize higher education. (Pass/fail grading only.)

Professional Field Experience. 1-18 Hr.

Seminar. 1-3 Hr.

Nursing
Petroleum and Natural Gas Engineering (PNGE)

100. Introduction to Petroleum Engineering. II, S. 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; surface facilities; transportation. Open to all students.

190. Teaching Practicum. 1-3 Hr.


194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

205. Transport Phenomena in Petroleum Engineering. II. 3 Hr. PR: MAE 41. 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.

210. Drilling Engineering. II. 4 Hr. PR or Coreq: GEOL 1 and MAE 114. Rock properties, functions and design considerations of rotating system, hoisting system, and circulation system; drilling fluids calculations and selections; hydraulic programs; drilling optimization; casing and casing string design; cementing programs; and pressure control.

211. Production Engineering. I. 3 Hr. PR: PNGE 210. 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.)

212. Drilling Fluids Laboratory. I, II. 1 Hr. PR or Coreq: PNGE 210 and MAE 114. 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.


225. Petroleum Engineering Ethics. II. 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.

232. Petroleum Properties and Phase Behavior. I. 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.)

233. Elements of Petroleum Reservoir Engineering. II. 3 Hr. PR: MAE 114 or consent. Basic properties of petroleum reservoir rocks. Fluid flow through materials. Evaluation of oil and gas reserves.

234. Applied Petroleum Reservoir Engineering. I. 3 Hr. PR: PNGE 233 or consent. 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.

235. Formation Evaluation. I, II. 3 Hr. PR: PNGE 210 or consent. Various well logging methods and related calculations with exercises in interpretation of data from actual well logs. (3 hr. lec.)

241. Oil and Gas Property Evaluation. I. 3 Hr. PR: PNGE 233; PR or Coreq: PNGE 211 and PNGE 235, or consent. Reserve estimation, decline analysis, petroleum property evaluation including interest calculations, cost estimation and tax evaluation. Overview investment decision analysis and computer applications in property evaluation.

244. Petroleum Reservoir Engineering Laboratory. I, II. 1 Hr. PR or Coreq: PNGE 233. Laboratory evaluation of basic and special petroleum reservoir rock properties. (3 hr. lab.)

262. Introduction to Reservoir Simulation. II. 3 Hr. PR: M 281 and PNGE 234 or consent. Partial differential equations for fluid flow in porous media and the use of finite-difference equations in solving reservoir flow problems for various boundary conditions. Study of individual well pressures and fundamentals of history matching.

270. Natural Gas Engineering. I. 4 Hr. PR: PNGE 205 or MAE 114 and PNGE 233 and MAE 101 or consent. 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.

370 Petroleum and Natural Gas Engineering
271. **Natural Gas Production and Storage.** II. 3 Hr. PR: PNGE 270. Development of gas and gas-condensate reservoirs; design and development of gas storage fields in depleted gas, gas-condensate, oil reservoirs and aquifers; design of natural gas production and processing equipment.

295. **Petroleum Engineering Design.** II. 3 Hr. PR: (PNGE 211 and PNGE 234 and PNGE 241) or consent. Comprehensive problems in design involving systems in oil and gas production, field processing, transportation, and storage.

299. **Well Stimulation Design.** II. 3 Hr. PR: MAE 43 and PNGE 210 and PNGE 211 and PNGE 233 and PNGE 235 or consent. Fundamentals of well stimulation and treatment design and their applications to low permeability formations.

**Pharmacy (PHAR)**

197. Honors. 1-3 Hr.

216. **Hospital Pharmacy and Administration.** I. 3 Hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.

256. **Advanced Pharmacotherapeutics.** I. 3 Hr. PR: PHAR 246 or equiv., and consent. The integration of pharmacological-therapeutic concepts in the study of treatment modalities and problems which may be encountered by the pharmacist in drug management of selected disease states.

276. **Pharmaceutical Quality Control.** II. 3 Hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.

280. **Drugs, Nutrients, and Health.** II. 3 Hr. The course is intended to provide the student with fundamental concepts and principles of nutrition science.

283. **History of Pharmacy.** I. or II. 2 Hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present.

287 A-Z. **Seminar in Pharmaceutical Sciences.** I, II. 1-3 Hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences. Clinical pharmacy.

289 A-Z. **Pharmaceutical Investigations.** I, II. 2-3 Hr. PR: Consent. Original investigation in pharmaceutics, medicinal chemistry, pharmacy administration, or clinical pharmacy.

290 A-Z. **Special Topics.** I, II. 2-4 Hr.

**Philosophy (PHIL)**

2. **Historical Introduction to Philosophy.** I, II. 3 Hr. An introductory survey of the major philosophers and philosophical movements from ancient times to the present.

3. **Problems of Philosophy.** I, II. 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.

5. **Introduction to Critical Reasoning.** I, II. 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.

10. **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.

11. **Symbolic Logic 2.** I, II. 3 Hr. PR: PHIL 10. Continuation of PHIL 10, 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 11.) (Not offered every year.)

13. **Current Moral Problems.** I, II. 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.

17. **Philosophy of Games.** I, II. 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. (Not offered every year.)

20. **History of Ancient Philosophy.** I. 3 Hr. An introduction to the philosophies of the pre-Socratics, Plato, Aristotle, the Epicureans, and the Stoics.

23. **Philosophy of Fundamentalism.** I, II. 3 Hr. Christian fundamentalism as philosophy; analysis of traditional doctrines for rational defense of inerrantist interpretation.

91. Special Topics. I, II. 3 Hr.

103. **Topics in Medieval Philosophy.** I, II. 3 Hr. PR: 3 hr. philosophy or consent. Introduction to the philosophies of St. Augustine, St. Thomas Aquinas, Peter Abelard, William of Occam, and other selected figures from the Medieval period. (Not offered every year.)
104. *History of Ethics*. I, II, 3 Hr. PR: 3 hr. philosophy or consent. 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. (3 hr. lec.) (Not offered every year.)

105. *Analytic Philosophy*. I, II, 3 Hr. PR: 3 hr. philosophy or consent. A critical study of twentieth-century Western analytical philosophy (for example, Russell, Logical Positivism, Witenstein). (Not offered every year.)

106. *Mathematical Logic*. I or II, 3 Hr. PR: PHIL 10 or consent. Axiomatic method, “naive” and axiomatic set theory, Russell’s Paradox, infinity and uncountability, “reduction” of mathematics to set theory, introduction to consistency and completeness of logic, Godel’s proof of the incompleteness of arithmetic. (Equiv. to MATH 161.) (Not offered every year.)

108. *Ethical Theory*. I, II, 3 Hr. PR: 3 Hr. philosophy or consent. 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.

111. *American Philosophy*. I, II, 3 Hr. PR: 3 Hr. philosophy or history or English major or consent. 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. (Not offered every year.)

115. *Themes in Continental Philosophy*. I, II, 3 Hr. PR: PHIL 2 and PHIL 20, or consent. Nineteenth and twentieth century French and German philosophers such as Hegel, Marx, Nietzsche, Heidegger, Habermas, Sarte, Foucault, Derrida; philosophers and themes will vary.

120. *History of Modern Philosophy*. II, 3 Hr. PR: 3 Hr. philosophy or consent. A study of selected writings by major philosophers of the Western world from Descartes to Kant.

121. *Existentialism*. I, II, 3 Hr. PR: 3 hr. philosophy or literature course in existentialism or consent. Survey of the major existentialist thinkers. (Not offered every year.)

122. *Philosophies of Asia*. I, II, 3 Hr. PR: 3 Hr. philosophy or consent. A critical, historical examination of the writing of the classic philosophers of India and China. (Not offered every year.)

123. *Philosophies of Religion*. I, II, 3 Hr. PR: 3 hr. philosophy or religious studies interdepartmental major or consent. 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.

127. *Feminist Philosophy*. I, II, 3 Hr. PR: 3 hr. philosophy or consent. An examination of fundamental metaphysical, methodological, ethical and legal issues in feminist philosophy.

141. *Health Care Ethics*. I, II, 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.

150. *Social and Political Philosophy*. I, II, 3 Hr. PR: 3 hr. philosophy or political science major or consent. An examination of the relationships among the individual, society and the state. Possible topics include justifications of the state, justice, rights, liberty, equality, and arguments for socialism and capitalism.

158. *Philosophy of Science*. I, II, 3 Hr. PR: 3 Hr. philosophy or science major or consent. Philosophical problems associated with the concepts and methodology of science. (Not offered every year.)

159. *Philosophy of Social Sciences*. I, II, 3 Hr. PR: 3 hr. philosophy or major in one of the social sciences or consent. Philosophical problems associated with the concepts and methodology of the social sciences. (Not offered every year.)

166. *Metaphysics*. I, II, 3 Hr. PR: 3 hr. philosophy or consent. Traditional problems associated with reality and experience, universals and particulars, causality, space and time, matter and mind, and the nature of the self.

171. *Theory of Knowledge*. I, 3 Hr. PR: 3 hr. philosophy or consent. The nature and scope of human knowledge. Topics may include perception, belief, truth, evidence, certainty, and skepticism.

172. *Philosophy of Law*. I, II, 3 Hr. PR: 3 hr. philosophy or pre-law student or consent. 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.

187. *Philosophy of Mind*. I, II, 3 Hr. PR: 3 hr. philosophy, psychology major, or consent. 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. (Not offered every year.)


194. *Professional Field Experience*. 1-18 Hr. 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 or competence development.
195 A-Z Seminar. I, II. 3 Hr. (Junior-Senior Seminar) PR: 12 hours in philosophy, 6 hours at 100 level or above, and junior or senior standing or consent. Advanced and in-depth philosophical investigation of selected problems and/or major philosophers. Seminar topics and instructors will vary. May be repeated with permission.

196 Senior Thesis. I, II, S. 3 Hr. PR: Senior standing and consent. Independent study, 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.

197 Honors. 1-3 Hr.

230 Philosophy and Culture Criticism. I. 3 Hr. PR: 3 hours of philosophy at 100-level or above, or consent. Recent philosophical analyses and critiques of modern Western culture; its relationship to discursive, social, economic, disciplinary, and gendering practices.

253 Philosophy of Mathematics. I, II. 3 Hr. PR: PHIL 106 or consent. Contemporary viewpoints in the foundations of mathematics. (Not offered every year.)

283 Philosophy of History. I, II. 3 Hr. PR: 6 hr. in philosophy or history major or consent. Theoretical problems such as the nature of historical explanation, relativism, and the status of speculative principles of history. (Not offered every year.)

285 Philosophy of Language. I, II. 3 Hr. PR: 6 hr. in philosophy or linguistic or language major or consent. Philosophical problems concerning the nature of meaning and language. (Not offered every year.)

290 Directed Studies. I, II, S. 1-6 Hr. (May be repeated for credit.) PR: Instructor’s written consent. Individually supervised reading, research, and projects.

292 Advanced Topics in Philosophy. I or II. 3 Hr. PR: 6 hr. in philosophy or consent. Advanced philosophical investigation of selected problems and issues. Topics will vary.

Physical Education (PE)
1. Badminton. I, II. S. 1 Hr. Introduction to beginning knowledge and skills in badminton.


4. Intermediate Basketball. Introduction to intermediate knowledge and skills in basketball.

7. Basketball Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for basketball.

8. Football Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for football.

9. Baseball Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for baseball.

10. Military Physical Conditioning. I, II. 1 Hr. Introduction to basic conditioning techniques for military training.

11. Air Force Military Physical Conditioning. I, II. 1 Hr. Introduction to basic conditioning techniques for military training.

12. Gymnastics Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for gymnastics.

13. Soccer Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for soccer.

14. Tennis Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for tennis.

15. Volleyball Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for volleyball.

16. Wrestling Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for wrestling.

17. International Wrestling. I, II. 1 Hr. Introduction to beginning knowledge and skills in international wrestling.

18. Swim Conditioning/Weight Training. I, II. 1 Hr. Introduction to basic conditioning and weight training techniques for swimming.

22. Billiards. I, II. S. 1 Hr. Introduction to beginning knowledge and skills in billiards.

23. Advanced Billiards. I, II. 1 Hr. Introduction to advanced knowledge and skills in billiards.

24. Bowling. I, II. S. 1 Hr. Knowledge and techniques of bowling. (Not for skilled bowlers.)
25. Aerobics. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in aerobics.
27. Clogging. I, II. 1 Hr. Introduction to beginning knowledge and skills in clogging.
30. Flag Football. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in flag football.
31. Frisbee. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in frisbee.
32. Golf/Volleyball. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in golf and volleyball.
34. Gymnastics. I, II. 1 Hr. Introduction to beginning knowledge and skills in gymnastics.
35. Horsemanship 1. 1 Hr.
36. Horsemanship 2. I, II. 1 Hr. Introduction to intermediate and advanced knowledge in horsemanship.
37. Ice Skating. II. 1 Hr. Introduction to beginning knowledge and skills in ice skating.
37. Snow Skiing. II. 1 Hr. Introduction to beginning and intermediate knowledge and skills in snow skiing.
39. Kinder Skills-Gym. I, II. 2 Hr. Introduction to knowledge and skills used to prepare parents to help their children learn motor skills.
40. Kinder Skills-Pool. I, II. 2 Hr. Introduction to knowledge and skills used to prepare parents to help their children become familiar with water.
46. Self-Defense. I, II. 1 Hr. Introduction to beginning knowledge and skills in self defense.
49. Taekwondo. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in taekwondo.
52. Racquetball. I, II. 1 Hr. Introduction to beginning knowledge and skills in racquetball.
53. Handball. I, II. 1 Hr. Introduction to beginning knowledge and skills in handball.
55. Slow Pitch Softball. I, II. 1 Hr. Introduction to beginning knowledge and skills in slow pitch softball.
56. Indoor Soccer. I, II. 1 Hr. Introduction to beginning knowledge and skills in indoor soccer.
57. Soccer. I, II. 1 Hr. Introduction to beginning knowledge and skills in soccer.
60. Beginning Tennis. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in tennis.
62. Intermediate Tennis. I, II, S. 1 Hr. Introduction to intermediate/advanced knowledge and skills in tennis.
64. Weight Training. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in weight training.
65. Conditioning. I, II. 1 Hr. Introduction to beginning knowledge and skills in conditioning.
68. Weight Training/Volleyball. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in weight training and volleyball.
70. Volleyball. I, II. 1 Hr. Introduction to beginning knowledge and skills in volleyball.
71. Volleyball/Badminton. I, II. 1 Hr. Introduction to beginning knowledge and skills in volleyball and badminton.
73. Beginning Swimming. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in swimming.
74. Intermediate Swimming. I, II, S. 1 Hr. Introduction to intermediate knowledge and skills in swimming.
75. Lifeguard Training. I, II. Red Cross certification for lifeguards.
76. Advanced Swimming. I, II. 1 Hr. Introduction to advanced knowledge and skills in swimming.
79. Orientation to Scuba. I, II. 1 Hr. Introduction to beginning knowledge and skills in scuba diving.
82. Bowling. I, II, S. 1 Hr. Introduction to beginning knowledge and skills in bowling.
85. Fencing. I, II. 1 Hr. Introduction to beginning knowledge and skills in fencing.
87. Aqua Aerobics. 1 Hr.
191 A-Z. Special Topics. 1-3 Hr.
Physical Education Teaching (PET)

25. Principles of Human Movement. I, II. 3 Hr. To introduce prospective physical education teachers, the basic concepts and principles of human movement applied to teaching activities and sports for school-aged children.

30. Exercise for School-Aged Children. I, II. 3 Hr. PR: Professional Block II—PET 35, and PET 40, and PET 56, and PET 57, and PET 58, and PET 75. Basic movement analysis; techniques of feedback about skills and performance for school-aged children.

35. Movement Analysis. I, II. 3 Hr. PR: Completion of Professional Block I—PET 25, and PET 37, and PET 51, and PET 67 or consent. Basic principles of movement analysis, techniques of feedback about skills and performance for school-aged children.

36. Teaching Badminton. I, II. 1 Hr. PR: Completion of Professional Block I—PET 25, and PET 37, and PET 51, and PET 67 or consent. Basic concepts and instructional techniques for teaching badminton in public schools. (Activity.)

37. Teaching Track and Field. I, II. 2 Hr. Basic concepts and instructional techniques for teaching track and field in public schools. (Activity)

38. Teaching Wrestling. I, II. 1 Hr. PR: Completion of Professional Block II—PET 35, and PET 40, and PET 56, and PET 57, and PET 58, and PET 75. Basic concepts and instructional techniques for teaching wrestling in public schools. (Activity.)

39. Teaching Volleyball. I, II. 1 Hr. PR: Admission to the Physical Education Teacher Certification Program. Basic concepts and instructional techniques for teaching volleyball in public schools. (Activity)

40. Teaching Soccer. I, II. 1 Hr. PR: Completion of Professional Block I—PET 25, and PET 37, and PET 51, and PET 67 or consent. Basic concepts and instructional techniques for teaching soccer in public schools. (Activity)

41. Teaching Basketball. I, II. 1 Hr. PR: Completion of Professional Block III—PET 44, and PET 39, and PET 48, and PET 56, and PET 57, and PET 106, or consent. Basic concepts and instructional techniques for teaching basketball in public schools. (Activity.)

42. Teaching Flag Football. I, II. 1 Hr. PR: Completion of Professional Block III—PET 44, and PET 39, and PET 48, and PET 106, and PET 126, or consent. Basic concepts and instructional techniques for teaching flag football in public schools. (Activity.)

44. 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)

48. Teaching Golf. I, II. 1 Hr. PR: Admission to the Physical Education Teacher Certification Program. Basic concepts and instructional techniques for teaching golf in public schools. (Activity)

51. Teaching Gymnastics. I, II. 2 Hr. Basic concepts and instructional techniques for teaching gymnastics in public schools. (Activity)

52. Teaching Outdoor Leisure Pursuits. S. 2 Hr. PR: Completion of Professional Block VI—PET 41, and PET 42, and PET 56, and PET 133, and PET 134 or consent. Basic concepts and instructional techniques for teaching basic backpacking, orienteering, and snow skiing in public schools. (Activity)

53. Teaching Dance in Physical Education. I, II. 2 Hr. PR: Completion of Professional Block II—PET 35, and PET 40, and PET 56, and PET 57, and PET 58, and PET 75, or consent. Basic concepts and instructional techniques for teaching dance in physical education in public schools. (Activity)

54. Teaching Non-Traditional Activities. I, II. 2 Hr. PR: Completion of Professional Block VI-PET 41 and PET 42 and PET 50 and PET 133 and PET 134 or consent. Basic concepts and instructional techniques for teaching non-traditional activities in public schools. (Activity)

55. Teaching Early Childhood Activities. I, II. 2 Hr. PR: Completion of Professional Block I—PET 25, and PET 37, and PET 51, and PET 67 or consent. Development of cognitive, affective, and psychomotor competencies in rhythms and games for teaching rhythms and low-organization games to early childhood students.

56. Teaching/Using Lead-Up Games. I, II. 2 Hr. PR: Completion of Professional Block II—PET 35, and PET 40, and PET 56, and PET 57, and PET 58, and PET 75, or consent. 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.

57. Teaching Aquatics. I, II. 1 Hr. PR: Completion of Professional Block I or consent. Basic concepts and instructional techniques for teaching aquatics in public schools. (Activity)

58. Teaching Softball/Baseball. I, II. 1 Hr. PR: Completion of Professional Block IV—PET 41, and PET 42, and PET 56, and PET 133, and PET 134 or consent. Basic concepts and instructional techniques for softball/baseball in public schools. (Activity)

60. Teaching Tennis. I, II. 1 Hr. PR: Completion of Professional Block III—PET 44, and PET 39, and PET 48, and PET 106, and PET 128 or consent. Basic concepts and instructional techniques for teaching tennis in public schools. (Activity)
67. **Introduction to Physical Education.** I, II. 2 Hr. Historical and philosophical basis, major issues, and professional practices in physical education.

75. **Motor Development.** I, II. 3 Hr. Conc.: Completion of Professional Block I—PET 25, and PET 37, and PET 51, and PET 67 or consent. To examine changes in human movement behavior across the lifespan and the factors that contribute to those changes.

106. **Behavioral Technology for Physical Education.** I, II 2 Hr. PR: Admission to the Physical Education Teacher Certification Program or consent. Basic concepts and instructional techniques associated with applying behavior analysis to school-aged children.


126. **Instructional Systems in Physical Education.** I, II. 3 Hr. PR: Admission to the Physical Education Teacher Certification Program. To prepare prospective physical education teachers to design and implement instructional systems in physical education settings, grades K-12.

128. **Curriculum in Physical Education.** I, II. 3 hr. PR: Admission to the Physical Education Teacher Certification Program. Examination of curriculum and curriculum development; discussion of “hidden curriculum” issues.

133. **Teaching Skills in Physical Education.** I, II. 3 Hr. Conc.: Completion of Professional Block III—PET 44, and PET 39, and PET 48, and PET 106, and PET 126, and PET 129 or consent. To develop competencies in preactive and interactive instructional skills in a physical education setting, grades K-12.

134. **Physical Education Teaching Practicum.** I, II. 1 Hr. Conc.: PET 133. Demonstration of competencies acquired in PET 133 in an instructional setting involving the general population of college students.

176. **Special Physical Education.** I, II. 2 Hr. PR: PET 75, and PET 126, and PET 144. Conc; PET 177. Examines motor developmental characteristics of various handicapped groups and emphasizes physical education role in remediating possible developmental deficiencies.

177. **Special Physical Education Practicum.** I, II. 1 Hr. PR: PET 75, and PET 126, and PET 133. Conc: PET 176 (Open to departmental majors (6822) only. A supervised practice teaching experience in special physical education.

181. **Student Evaluation in Physical Education.** I, II. 2 Hr. PR: Completion of Professional Block IV—PET 41, and PET 42, and PET 60, and PET 133, and PET 134 or consent. Focuses on understanding the need and application of tests and measurement in the evaluation process.

183. **Issues in Physical Education.** S. 2 Hr. PR: Completion of Professional Block VI—PET 187, and PET 188, and PET 189 or consent. Issues affecting the teaching of physical education links the elements of the student’s professional preparation.

185. **Supervision in Physical Education.** S. 1 Hr. PR: Completion of Professional Block VI—PET 187, and PET 188, and PET 189. Evaluation and feedback techniques for supervising physical education teachers.

187. **Student Teaching: Elementary.** I, II. 3 Hr. Conc: Must be taken with PET 188. A final, school-based practice teaching experience in elementary schools.

188. **Student Teaching: Secondary.** I, II. 3 Hr. Conc: Must be taken with PET 187. A final, school-based practice teaching experience in secondary schools.

189. **Student Teaching Seminar.** I, II. 2 Hr. Conc.: PET 187, and PET 188. Discussions to enhance communication concerning the program’s student teaching and stimulate critical thinking about the student teaching experience. (Seminar).

194. **Professional Field Experience.** I, II. 1-12 Hr. PR: Senior Standing or consent. A student internship in selected physical education and/or sport related areas. (Graded Pass/fail)

198 A-Z. **Special Topics.** I, II, S. 1-6 Hr. PR: Consent of program coordinator. In-depth analysis of physical education subject matter areas through an innovative course or research or field experiences not included in the major curriculum but as an adjunct to the curriculum.

**Physical Science (PHSC)**

1. **Introductory Physical Science.** I. 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.

2. **Introductory Physical Science.** II. 4 Hr. PR: PHSC 1. Continuation of PHSC 1. Concepts include electricity, motion, heat and temperature, energy, and chemistry.
11. General Physical Science 1. I. 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.

12. General Physical Science 2. II. 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.

190. Teaching Practicum in Physical Science. I, II. 1-3 Hr. per sem. PR: PHSC 1 and PHSC 2 and consent. 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.

191. Special Topics. 1-3 HR.

194. Professional Field Experience. 1-18 HR.

195. Seminar. 1-3 HR.

196. Senior Thesis. 1-3 HR.

197. Honors. 1-3 HR.

Physical Therapy (PT)

Note: Enrollment in physical therapy courses is limited to students admitted to the program.

100. Essentials of Clinical Anatomy. I. 4 Hr. A study of human gross anatomy, micro anatomy and embrology with major emphasis on the musculoskeletal system.

101. Professional Foundations. I. 4 Hr. Introduction to fundamentals of professional behavior for the physical and occupational therapist. Includes units on communication, documentation, ethics, interdisciplinary teamwork, licensure requirements, and medical terminology.


103. Functional Movement Across the Lifespan. I. 2 Hr. An overview of motor learning 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.

104. Clinical Sciences. I. 4 Hr. An introduction to pathology, radiology, pharmacology, hematology and laboratory tests specific to the patient population encountered by the occupational and physical therapist.

105. Kinesiologic Foundations. II. 4 Hr. PR: Admission to Professional Program in PT or OT. Functional anatomical correlations and human movement. Statics, biomechanics, dynamics and functional movement analysis. (2 hr. lec., 4 hr. lab.)

106. Neurobiologic Foundations. II. 4 Hr. PR: Enrolled in professional sequence. Basic and clinical applications of neuroanatomy and neurology. Includes lectures on neurophysiological basis of physical and occupational therapy practice. (3 hr. lec., 2 hr. lab.)

107. Evaluation Procedures. II. 3 Hr. Theory and practice in evaluation procedures used by therapist. Includes Manual Muscle Test, isokinetic muscle testing, and assessment of components of movement, posture, balance and hand function. (1 hr. lec., 2 hr. lab.)

108. Introduction to Clinical Decision Making. II. 1 Hr. Pass/fail. Introduction to the Problem-Based Learning method utilizing guided case study presentations. Students learn to obtain appropriate patient history and background, identify learning issues and synthesize information from a variety of sources to present and appropriate plan of physical therapy management of various patient dysfunctions.

184. Clinical Education 1. I. 1 Hr. Students observe various members of the health care team in practice. Students practice verbal and written communication skills. Course open to PT majors. (Contact hours—3.)

185. Clinical Education 2. II. 2 Hr. PR: Successful completion of all preceding professional coursework. CPR certification. Practice of basic clinical and written and verbal skills. Includes one full-time, one-week supervised clinical rotation with a licensed physical therapist. Student will submit a case report based on a client seen during that rotation. (Lec 1 hr, other 1 hr., contact 2 hr.)

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.
197. Honors. 1-3 Hr.

199. Advanced Clinical Anatomy. S. 2 Hr. This course presents advanced problem based study in select topics dealing with clinical application of gross anatomy to physical therapy practice. Laboratory work includes dissection and computer based instructional sessions.

201. Clinical Sciences 2. 4 Hr. Introduction to selected topics in clinical medicine which are basic to physical therapy practice. Topics include metabolic and endocrine disorders, oncology, dermatology, wound care and burns. (Contact hours 4.)

202. Clinical Decision Making 1. 2 Hr. Continuation of preparation of critical thinking and decision making in the clinic. Emphasis is on autonomous practice and decisions regarding referral to other members of the health care team. Students work in small groups in a problem based learning format. (Contact hours 2.)

204. Physical Therapy Procedures 1. I. 3 Hr. Introduction, theoretical basis and laboratory practice of procedures basic to physical therapy, such as gait training, wheelchair management and massage. Format for the class is primarily laboratory/demonstration with time to practice the various techniques. (Lec 1 hr. + lab 4 hr. = contact 5 hr.)

206. Cardiopulmonary Rehabilitation. 3 Hr. Correlation of anatomy, physiology, and pathology for the treatment of cardiopulmonary conditions. Laboratory in cardiopulmonary evaluation, cardiac and pulmonary rehabilitation procedures, and respiratory treatment techniques. Lecture and case presentations in appropriate medical and surgical conditions. (Contact hours - 3.)

210. Orthopedic Physical Therapy 1. I. 2 Hr. Evaluation and rehabilitation of mechanical disorders of the spine and upper extremities. Course includes lecture, case study and laboratory practice of evaluation and treatment skills common to physical therapy management of orthopedic problems. Lec 2 hr + lab 4 hr = contact 6 hr.

216. Clinical Decision Making 2. 3 Hr. Graded as Pass/fail only. Continuation of preparation for critical thinking and decision making in the clinic. Emphasis is on interdisciplinary team format.

217. Geriatric Physical Therapy. II. 2 Hr. Students are provided information about medical and psychosocial factors associated with aging. Study of the role of physical therapy in geriatrics, including laboratory practice of common evaluation and treatment procedures. (1 hr. lecture 2 hr. lab.)

219. Professional Values. 3 Hr. PR: Majors only. Students investigate various professional, ethical, and practice issues through written assignments and class presentations. Students study Appalachian culture and the effects of cultural mores on professional practice.

220. Therapeutic Physical Agents. 4 Hr. PR: Physical therapy majors only; must have successfully completed the required previous coursework in the professional sequence. Students learn theory and background of various physical therapeutic agents. Student practice application of agents in laboratories.

221. Developmental Life Tasks. II. 3 Hr. Life-span human development across cognitive, psychosocial and neuromotor domains with particular emphasis on applications to physical or occupational therapy interventions. Cultural influences in health and illness.

225. Physical Therapy Procedures 2. 3 Hr. Theory and clinical application of therapeutic exercise techniques. (2 hr. lec, 2 hr. lab.)

250. Orthopedic Physical Therapy 2. 4 Hr. Continuation of PT 21 format and is a continuation of that course. Evaluation and rehabilitation of mechanical disorders of the lumbar spine and lower extremity is emphasized. (2 hr. lec and 4 hr. lab.)

270. Organization and Management. II. 4 Hr. Basic principles and philosophy of management and the organization with emphasis on interpersonal relationship within an organization, styles of tasks, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.

272. Professional and Community Relationships. II. 2 Hr. Community health organization, including local, state, and national facets such as Medicare-Medicaid and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.

274. Orthopedic Physical Therapy. II. 4 Hr. Continuation of PT 273. Evaluation and rehabilitation of mechanical disorders of the spine and lower extremities are emphasized together with physical therapy and orthopedic management of selected pediatric disorders.

276. Elective Study. II. 3 Hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student’s fullest capabilities in the allotted time.

278. Correlative Rehabilitation. II. 5 Hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
282. Clinical Education 3. II. 1 Hr. Supervised experience in more specialized procedures and testing techniques and patient program design. (Graded pass/fail only.)

285. Professional Literature and Research. II. 3 Hr. Continuation of PT 275. Data collection, analysis, and interpretation of students supervised independent research projects; written and oral presentations of the completed project.

290. Clinical Education 4. S. 1-12 Hr. Three full-time summer affiliations of six to eight weeks each in a variety of extramural facilities, such as a general hospital, children’s facilities, rehabilitation services, and public health. (Graded pass/fail only.)

Physics (PHYS)

1. Introductory Physics. I, II, S. 4 Hr. PR: High school trigonometry and MATH 3. Conc: MATH 4. The fundamental philosophy and principles of physics are applied to studies of mechanics, sound, heat, and thermodynamics through demonstrations, problems, and experiments.

2. Introductory Physics. I, II, S. 4 Hr. PR: PHYS 1 and MATH 4. 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.

5. Conceptual Physics. 4 hr.

7. Physics of Music. II. 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.

8. Light, Vision and Color. I. 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.

11. General Physics. I, II, S. 4 Hr. PR: A grade of C or better in MATH 15. (Not open to students who have credit for PHYS 1.) Survey of classical mechanics, thermodynamics and waves.

12. General Physics. I, II, S. 4 Hr. PR: PHYS 11. (Not open to students who have credit for PHYS 2.) Survey of electricity, magnetism, and optics.

124. Introductory Modern Physics. II. 4 Hr. PR: PHYS 12 and MATH 16. 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.


190. Teaching Practicum. 1-3 Hr.


194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

201 A-Z. Special Topics. I, II. 1-3 Hr. per sem. (May be repeated to max. of 24 hours.) Study of topics of current interest in physics.

213. Introductory Electronics. 3 Hr. PR: PHYS 11 and PHYS 12. Principles and applications of integrated circuits and digital electronics. (2 hr. lec, 1 hr. lab.)

221. Optics. 3 Hr. PR: PHYS 11 and PHYS 12 and MATH 18. 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. (3 hr. lec.)

225. Atomic Physics. 3 hr. PR: PHYS 124 or equiv. Relativistic mechanics, atomic structure, and spectra.


233. Electricity and Magnetism. I, II. 3 Hr. PR: PHYS 11 and PHYS 12 or equiv. and PR or Conc.: MATH 18. Electrostatics, electrostatics in matter, magnetostatics, magnetostatics in matter, Maxwell’s equations, reflection and refraction, wave guides and cavities.

234. Electricity and Magnetism. I, II. 3 Hr. PR or CONC: PHYS 233 or equiv. and MATH 18. Electrostatics, electrostatics in matter, magnetostatics, magnetostatics in matter, Maxwell’s equations, reflection and refraction, wave guides and cavities.

241. Advanced Physics Laboratory. I, II. 1-3 Hr. PR: PHYS 11 and PHYS 12 and PHYS 124. Experiments in physics designed to implement theory courses, give experience in data taking and instrumentation, and learn methods of data evaluation and error analysis.

248. Physics Seminar. I, II. (No credit.) (Suggested for junior, senior, and graduate Physics majors.) These lectures acquaint students with current interest in physics.

251. Introductory Quantum Mechanics. I. 3 Hr. PR: PHYS 124 and MATH 18. Fundamental principles of quantum mechanics; state functions in position and momentum space, operators, Schrodinger’s equation, applications to one-dimensional problems, approximation methods, the hydrogen atom, angular momentum and spin.

263. Nuclear Physics. I, II. 3 Hr. PR: PHYS 124 and MATH 17. 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.


281. Plasma Physics. 3 Hr. PR: PHYS 11 and PHYS 12 and PR or CONC: PHYS 234. Introductory course in the physics of ionized gases; particle and fluid treatment of plasmas, waves, equilibrium and stability, kinetic theory, and nonlinear effects. (3 hr. lec.)

283. Thermodynamics and Statistical Mechanics. II. 3 Hr PR: PHYS 124 or equiv. and MATH 17. Introduction to the statistical foundations of thermodynamics; applications of the fundamental laws of thermodynamics to physical and chemical systems.

Plant Pathology (PPTH)
170. Forest Pest Management. II. 4 Hr. PR: (FMAN 211 and BIOL 1 and BIOL 3 and PLSC 52) or BIOL 15 and BIOL 17. 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.)


Plant Science (PLSC)
52. Principles of Plant Science. I, II. 4 Hr. PR: BIOL 1 and BIOL 3. Basics of the nature, history, classification, role, distinction, structure and function, reproduction, improvement, culture, pests, storage handling, production and marketing, and utilization of agricultural plants.

180 A-Z. Assigned Topics. I, II. 1-4 Hr. (Students eligible for this course must be in good standing and have studies in agronomy (crops and soils), bacteriology, horticulture, or plant pathology).

194. Professional Field Experience. 1-18 Hr.

195. Seminar. II. 1-3 Hr. Discussion of current problems in agriculture and agricultural environmental protection. (Pass/fail grading.)

Political Science (POLS)
1. Introduction to Political Science. I, II. S. 3 Hr. Introduction to government and politics. Origins, forms, and functions of the state; organization and processes of government; and the behavior of groups and individuals in various political systems.


3. 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.

7. Modern Political Ideologies. I, II. S. 3 Hr. A survey of some of the major competing ideologies in the modern world, including capitalism, communism, socialism, fascism, and democracy.

100. 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.

110. Law and the Legal System. I, II. S. 3 Hr. Introductory course on the role of law in political processes. Includes a survey of subfields in United States law and an examination of participants, processes, and policymaking in the United States legal system.
120. **State and Local Government.** I, II. 3 Hr. The legal basis, structure, politics and operation of state and local governments, their relations with each other, and their place in the federal system.

130. **Introduction to Policy Analysis.** I, II. 3 Hr. Examination of the causes and consequences of public policies. Substantive policies examined include: civil rights, housing and urban renewal, environment, health, welfare, law enforcement, education, and taxation.

137. **Gender, Politics, and Policy.** I. 3 Hr. Comparative study of how gender differences affect politics across the world. Emphasis will be on advanced industrial democracies. Topics include: political attitudes and behavior, gender differences in political recruitment, and the impact of gender on public policy.

140. **Introduction to Public Administration.** I, II. 3 Hr. The development, organization, procedures, processes, and human relation factors in governmental administration in the United States.

150. **Introduction to Comparative Politics.** I, II. 3 Hr. An introduction to the political and governmental systems of industrialized and Third World countries. Focuses on approaches to comparative political study, political cultures and participation, and government structures, processes, and policy performance.

160. **International Relations.** I, II. 3 Hr. Theories and concepts in international politics and their application to contemporary world politics.

170. **History of Political Thought 1.** I. 3 Hr. Major political philosophers and ideas from the Greeks to the 17th century.

171. **History of Political Thought 2.** II. 3 hr. Major examination of the leading political philosophers and ideas of the 17th, 18th, and 19th centuries, including Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Hegel, and Marx.

188. **Honors Seminar.** I, II. 3 Hr.

189 A-Z. **Selected Topics (Honors.)** I, II. 3 Hr.

190. **Teaching Practicum.** 1-3 Hr.

191 A-Z. **Special Topics.** I, II, S. 1-3 Hr. Course topics change. Students may enroll more than once.

194 A-Z. **Professional Field Experience.** I, II, S. 1-18 Hr. (Total credit applicable toward any Arts and Sciences degree may not exceed the maximum of 18 hours.) PR: Consent for those who wish to work with faculty and field supervisors to design field experience with planned learning objectives and credit goals.

195. **Seminar.** 1-3 Hr.

196. **Seminar.** I, II, S. 1-3 Hr.

197. **Honors.** 1-3 Hr.

210. **The American Presidency.** I, II. 3 Hr. Institutional, behavioral, and societal forces which have given rise to the modern presidency; factors which enhance and constrain the exercise of presidential power over those constituents with which the president must interact; the nature and consequences of the presidential decision-making process; desirability and/or feasibility of reforming the presidency.

211. **Political Parties and Elections.** II. 3 hr. Parties and elections in America; emphasis on nomination and general election processes, campaigns, the mass media, campaign finance, voting, the electoral college, and parties in government.

212. **Appellate Judicial Process.** II. 3 hr. PR: POLS 110 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.

213. **American Constitutional Law.** I. 3 Hr. The role of the Constitution in the American political system. Topics covered 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.

214. **Civil Liberties in the U.S.** 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.

215. **Law and Public Policy.** I, II, S. 3 Hr. PR: POLS 110 or consent. Advanced examination of the role of trial courts in policymaking, including agenda-setting and policy formulation by courts, the outcomes of policy litigation, and the politics of legal reform.

216. **Public Opinion and Politics.** I, II. 3 Hr. In-depth treatment of the origins, content, and impact of public opinion in American politics; political ideology, partisanship, socialization, mass media, opinion polls, and survey research techniques.
217. Interest Groups and Democracy. I, II, S. 3 hr. 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.

218. The Legislative Process. II. 3 Hr. Structure, organization and processes of legislative bodies; powers of the legislature; detailed study of law-making procedures; and role of outside forces.

221. West Virginia Government. I, II. 3 Hr. Organization and operation of the state government of West Virginia.

231. 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.

233. 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.

234. 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.

235. 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.

236. 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.

238. 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, risk, technological, economic, and political variables which affect policy making in this area.

242. 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. (Equiv. to PUBA 242).

244. 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.

250. Government of Japan. II. 3 Hr. Survey of political institutions and governmental process of Japan with special emphasis on the analysis of political problems in the post-war period.

251. Russian/Post-Soviet Politics. II. 3 Hr. Survey of politics and government in Russia and in the states of the former Soviet Union.

253. 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 Britian, France, Italy and the European Union.


256. Politics of the Middle East. II. 3 Hr. Survey of the domestic and international political dynamics of the Middle East.

258. Politics of Africa. II. 3 Hr. Historical legacies and current political processes of tropical African countries.

261. International Organization. II. 3 Hr. Agencies created since the close of World War II. Some reference to the development of international law and the United Nations.

263. Public International Law. I. 3 Hr. Law governing relations among nations, including development of rules, means of enforcement, and conflicts between theory and practice.

264. American Foreign Relations. I. 3 Hr. PR: POLS 160 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 WWII, including both continuity and change in the emerging post-cold war system.

266. Post-Soviet Foreign Policy. II. 3 Hr. The origins and conduct of foreign policy during the Soviet and post-Soviet periods. Emphasis will be placed on the foreign politics of the former Soviet Republics.

267. 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. Analysis in depth of the Monroe doctrine and its corollaries and the inter-American system.
268. **Politics of War and Peace.** 3 Hr. PR: POLS 160 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: WWI, WWII, and the Cold War.

269. **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.

272. **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.

273. **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.

275. **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.

299 A-Z. **Special Topics.** I, II. 1-3 Hr.

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**Portuguese (PORT)**

1. **Elementary Portuguese.** I. 3 Hr.

2. **Elementary Portuguese.** II. 3 Hr. PR: PORT 1 or equiv.

3. **Intermediate Portuguese.** I. 3 Hr. PR: PORT 1, 2, or equiv.

4. **Intermediate Portuguese.** II. 3 Hr. PR: PORT 3 or equiv.

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**Psychology (PSYC)**

1. **Introduction to Psychology.** I, II, S. 3 Hr. Survey of general psychology.

19. **Psychology as a Profession.** I, II. 1 Hr. PR: PSYC 1. Orientation to opportunities for experience, employment, and graduate and professional training in psychology.

25. **Psychology of Academic Self Management.** I, II. 3 Hr. PR: Consent. Designed to teach students: (1) the important elements of study behavior and (2) to develop and apply a self-management program to their academic work. Classroom instruction and practical exercises.

101. **Leadership and Human Relations.** I, II. 3 Hr. PR: PSYC 1. 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.

102. **Research Methods in Psych.** I, II. 3 Hr. PR: PSYC 1 and STAT 101. Research methods in experimental, developmental, clinical, and community-social psychology in the laboratory and the natural environment. (Course listed as PSYC 2 through 1992-1993.)

131. **Biological Foundations of Behavior.** I, II. 3 Hr. PR: PSYC 1 and PSYC 102. Introduction to biological processes that underlie behavior. Consideration of genetic, physiological, and behavioral processes in the context of evolutionary theory. Includes laboratory exercises and demonstrations.

141. **Introduction to Human Development.** I, II. S. 3 Hr. PR: PSYC 1. 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.

151. **Introduction to Social Psychology.** I, II. S. 3 Hr. PR: PSYC 1. 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.

164. **Personal and Social Adjustment.** I, II. 3 Hr. PR: PSYC 1. Applications of material from personality, abnormal, clinical, and social psychology to the problems of achieving positive personality change.

170. **Sex Roles and Behavior.** I, II. S. 3 Hr. PR: PSYC 1. 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.
171. Behavior Principles. I, II. 4 Hr. PR: PSYC 1, PSYC 102. Principles of behavior and learning and the significance of these principles for psychological theory and application; laboratory exercises and demonstrations.

190. Teaching Practicum. I, II, S. 1-3 Hr. PR: Consent (No more than 3 hours of PSYC 190 may be counted toward the 42 hours of psychology to which psychology majors are limited.) Individually supervised experience in teaching, tutoring, and/or classroom management projects.

191 A-Z. Special Topics in Psychology. I or II. 1-3 Hr. PR: Consent. Contemporary topics in psychology considered at an intermediate level for both psychology majors and majors in other areas.

194. Professional Field Experience. I, II, S. 1-18 Hr. PR: Junior or senior psychology major and consent (application and interview). (May be repeated to a maximum of 18 hours, does not count as credit toward the major.) Experiential service-learning program that is planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary volunteer placement (half to full-time) of student in a mental health or industrial/organizational agency while learning and performing activities related to psychology.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

213. Directed Studies. I, II, S. 1-3 Hr. PR: Consent. (No more than 10 hours may be applied to the 42 hours of psychology to which psychology majors are limited.) Individually supervised reading, research and/or applied projects.

218. History and Systems of Psychology. I, II. 3 Hr. PR: (PSYC 101 or PSYC 102 or PSYC 141 or PSYC 151 or PSYC 164 or PSYC 170 or PSYC 191) and 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.

223. Cognition and Memory. I or II. 3 Hr. PR: PSYC 102 and junior or senior standing. Theoretical and empirical issues in cognitive psychology. Topics include mechanisms and theories of attention, memory, language, and conceptual processes.

224. Learning and Behavior Theory. I or II. 3 Hr. PR: PSYC 171 and junior or senior standing. Advanced course in empirical and theoretical issues in the psychology of learning.

225. Perception. I or II. 3 Hr. PR: PSYC 102 and junior or senior standing. Survey of the structure and function of human sensory systems (primarily visual and auditory), perceptual issues and theories.

226. Physiological Psychology. I or II. 3 Hr. PR: PSYC 131 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.

242. Prenatal and Infant Development. I or II. 3 Hr. PR: PSYC 141 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.

243. Child and Adolescent Behavior. I or II. 3 Hr. PR: PSYC 141 and junior or senior standing. Theory and research on major psychological processes in childhood and adolescence; maturation, personality, socialization, sensory, and cognitive development.

245. Adulthood and Aging. I or II. 3 Hr. PR: PSYC 141 and junior or senior standing. Psychological issues in the study of adulthood, with an emphasis on the 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.

251. Social Psychology. I or II. 3 Hr. PR: PSYC 151 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.

262. Psychological Assessment. I or II. 3 Hr. PR: (PSYC 101 or PSYC 102 or PSYC 141 or PSYC 151 or PSYC 164 or PSYC 170 or PSYC 191) and junior or senior standing. Theory and practice in development and use of psychological assessment procedures. Includes intelligence testing, behavioral assessment, and interviewing.

263. Personality Theory. I or II. 3 Hr. PR: (PSYC 101 or PSYC 102 or PSYC 141 or PSYC 151 or PSYC 164 or PSYC 170 or PSYC 191) and junior or senior standing. Theoretical and empirical readings in a survey of major perspectives in personality theory, including dynamic, cognitive, humanistic, and behavioral.

264. Psychology of Adjustment. I or II. 3 Hr. PR: (PSYC 101 or PSYC 102 or PSYC 141 or PSYC 151 or PSYC 164 or PSYC 170 or PSYC 191) and junior or senior standing. Dynamic principles of human personality adjustment.

274. Behavior Modification. I, II. 3 Hr. PR: PSYC 171 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.
279. **Community Psychology**, II. 3 Hr. PR: (PSYC 102 or PSYC 141 or PSYC 151 or PSYC 164 or PSYC 170 or PSYC 191) and junior or senior standing. Psychological principles applied to treatment and intervention at the community level; manpower development, organizational change, and systems analysis.

281. **Abnormal Psychology**, I, II. 3 Hr. PR: (PSYC 101 or PSYC 102 or PSYC 141 or PSYC 151 or PSYC 170 or PSYC 191) and junior or senior standing. Major categories of behavior disorders; etiology, prevention, and treatment.

282. **Exceptional Children**, I or II. 3 Hr. PR: PSYC 141 and junior or senior standing. Exceptional mental retardation or advancement; organic disabilities having behavioral consequences, such as cerebral palsy or deafness; and behavior disorders.

295 A-Z. **Seminar in Psychology**, I or II. 3 Hr. (May be repeated for credit.) PR: (PSYC 101 or PSYC 102 or PSYC 141 or PSYC 151 or PSYC 170 or PSYC 191) and junior or senior standing. Presentation and discussion of selected topics.

297. **Honors Investigation and Thesis**, I, II. S. 3 Hr. (May be repeated for credit; max. credit 6 hr.) Junior or senior psychology major and admission to Honors Program in Psychology. Supervised readings and investigation culminating in the honors thesis.

**Public Relations (PR)**

111. **Introduction to Public Relations**, I, II. 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.

119. **PR Editing and Design**, I, II. 3 Hr. PR: JRL 18 and PR 111. Editing and production techniques for public relations media (brochures, reports, newsletters, etc.), including copy preparation, typography, graphic design, layout, and desktop publishing.

121. **Public Relations Research and Theory**, 3 Hr.

124. **Public Relations Writing/Applications**, I, II. 3 Hr. PR: PR 119 or JRL 19. Writing, design, graphics, and desktop publishing as major tools of public relations practitioners and planners.

190. **Teaching Practicum**, 1-3 Hr.

191. **Special Topics**, 1-3 Hr.

194. **Professional Field Experience**, 1-18 Hr.

195. **Seminar**, 1-3 Hr.

196. **Senior Thesis**, 1-3 Hr.

197. **Honors**, 1-3 Hr.

222. **Public Relations Case Studies**, I, II. 3 Hr. PR: PR 124 and JRL 221 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.

**Reading (RDNG)**

(Reading is primarily a service area to students in early childhood education, elementary education, secondary education, and special education. There are no specializations which an undergraduate can pursue.)

283. **Special Workshop in Reading**, I, II. S. 1-6 Hr. For elementary and secondary students in pre-service education programs, as well as elementary and secondary teachers in in-service education.

**Recreation, Parks and Tourism Resources (RPTR)**

42. **Introduction to Recreation and Parks**, II. 3 Hr. Recreation in modern life; its philosophy, environments, historical antecedents, service delivery systems, special settings and populations, leadership programs and professional challenges. (Field placement with a local recreation agency; some transportation costs.)

43. **Leisure and Human Behavior**, I. 3 Hr. An interdisciplinary approach analyzing the role of leisure in modern American life. Play, games, work, and recreation are studied as aspects of human behavior affected by global, physical, societal, and personal concerns.

45. **Recreation Services for Special Populations**, I. 3 hr. PR: Consent. Introductory analysis of current therapeutic recreation and park services to include members of special populations; familiarization with planning for the conduct of such services.

63. **Program Planning**, II. 3 Hr. PR: Recreation and Parks major or consent. Fundamentals of general program planning; needs, facilities, age groups, local customs, climactic factors, etc.; settings such as playgrounds, indoor centers, playing fields, parks; hospitals, voluntary agencies, industrial settings, and campuses.

142. **Fundamentals of Nature Interpretation**, II. 3 Hr. PR: Recreation and parks junior or consent. Methods and techniques of interpreting the natural environment to individuals and groups.

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151. Recreation Leadership. II. 3 Hr. PR: RPTR 42, 43, and 45. Leadership functions and techniques, group dynamics, supervision, and use of volunteers. (Field placement with a local recreation agency; some transportation costs.)

165. Planning and Design. II. 3 Hr. PR: Recreation and Parks 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 recreational areas.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

192. Internship. I. 3 Hr. PR: Completion of required RCPK courses for the B.S.R.; internship must relate to student’s area of emphasis and have prior approval of instructor. Supervised, full-time leadership responsibility with a recreation agency for a minimum of eight weeks.

193. Professional Synthesis. I, II. 3 Hr. PR: Senior standing; PR or CONC: RCPK 192. Capstone course synthesizing professional training and field work experience.

194 A-Z. Professional Field Experience. 1-18 Hr.

216. Philosophy of Recreation. II. 3 Hr. PR: Consent. Interpretation of recreation as a basic part of the living process; importance to individual community and national welfare; social and economic significance.

233. Wildland Recreation Management. I. 3 Hr. PR: FMAN 12 or consent. Topics include an analysis of administrative agencies concerned with wildland management; methods of ameliorating human impact on outdoor recreation resources; discussion of philosophies underlying wilderness recreation; and a review of contemporary controversies concerning wildlands.

234. Wilderness in American Society. II. 3 Hr. PR: RCPK 233 or consent. A seminar examining political, sociological, and environmental aspects of American wilderness. A discussion on articles concerning wilderness preservation, management, and aesthetics.

235. Parks and Recreation Administration. I. 3 Hr. PR: 12 hr. of recreation and parks courses, junior standing, or consent. Principles of administration as applied to the operation of recreation and park agencies, including legal foundations, policy, personnel, finance and programs of service.

239. Natural Resource Tourism. I. 3 Hr. PR: Junior standing. Tourism in natural settings; emphasis on sustainable tourism development and natural resource stewardship. (Field trip required; some transportation costs.)

242. Historical and Cultural Interpretation. II. 3 Hr. PR: Recreation and parks major or consent. Methods of locating source materials for reconstructing the historical, cultural, and physical aspects of an area for an interpretive center; preparing brochures, displays, and nature trails to facilitate interpretive activities.

248. Environmental Concerns In Outdoor Recreation. I. 3 Hr. PR: Consent. Understanding and interpreting environmental concerns within the context of outdoor recreation.

Religious Studies (RELG)

5. An 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.

100. Introduction to the Gospels. 3 Hr. Introduction to the origin and content of the Synoptic Gospels of the New Testament (Matthew, Mark, Luke). Discusses a number of basic theological issues and relates them to the contemporary situation.

101. Introduction to Life/Thought of Paul. 3 Hr. Introduction to the life and theology of Paul, involving a study of the letters of Paul in the New Testament and other pertinent early Christian literature. Discusses a number of basic theological issues and relates Scripture teachings to the contemporary situation.

102. Introduction to the Old Testament 1. 3 Hr. The story of Israel, her religious life, and great personalities up to about 800 B.C., based on a study of Genesis through II Kings. Basic theological and ethical issues are discussed in relation to the contemporary situation.

103. Introduction to the Old Testament 2. 3 Hr. The story of Israel, her religious life, and great personalities from 800 B.C. to about 100 B.C., based on a study of the prophetic and wisdom literature of the Bible. Basic theological and ethical issues are discussed in relation to the contemporary situation.

105. Introduction to the Johannine Literature. 3 Hr. Introduction to the origin and content of the New Testament Gospel of John, the Epistles of John, and the Book of Revelation; relates basic theological issues to contemporary situation.

110. Contemporary Theology 1. 3 Hr. Issues include: function of reason in Judaeo-Christian faith and relationship of reason and revelation to each other; Judaeo—Christian understanding of history; the question of biblical literalism.

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111. Contemporary Theology. 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.

112. 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 Judaeo-Christian faith.

120. History of Christian Thought 1. 3 Hr. A study of significant people and movements of thought among the Christians and the way in which these contributed to answering the perennial questions of religion and culture from a Christian perspective. Covers the history of Christian thought to 1500.

121. History of Christian Thought 2. 3 Hr. A study of significant people and movements of thought among the Christians and the way in which these contributed to answering the perennial questions of religion and culture from a Christian perspective. Covers the history of Christian thought from 1500 to the present.

122. Origins of Judaism. 3 Hr. PR: Sophomore standing or above, or a previous religious studies course. 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.

128. 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.

130. Religions of India. 3 Hr. PR: Sophomore standing or above, or a previous religious studies course. 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.

131. Religions of China and Japan. 3 Hr. PR: Sophomore standing or above, or a previous religious studies course. Buddhism, Confucianism, Taoism, Shintoism; historical and theological foundations, developments of thought; and contemporary expressions and encounters with the modern world.

132. Islam and Near Eastern Religions. 3 Hr. PR: Sophomore standing or above, or a previous religious studies course. 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.

141. Mythology and Religion. (Alternate years.) 3 Hr. PR: Sophomore standing or above, or a previous religious studies course. 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. (Short field trip required.)

142. Theological Perspectives in Modern Literature. 3 Hr. PR: Sophomore standing or above, or a previous religious studies course. 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. Team-taught.

150. 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.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr. (Open to Honors students and interdepartmental religious studies majors only.) A basic, theological topic which is suitable for study by an undergraduate Honors student or by an interdepartmental religious studies major, will be selected for each semester.

290 A-Z. Seminar: Selected Topics. 3 Hr. PR: A previous religious studies course or consent.

Resource Management (RESM)
1. 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 impact on American agriculture and society.

180. Assigned Topics. I, II. S. 1-4 Hr. PR: In order to be eligible to register in assigned topics (RESM 180), the student must: (1) be in good standing, and (2) obtain approval of the Division of Resource Management before registration.

180 A-Z. Assigned Topics. I, II. S. 1-4 Hr. PR: In order to be eligible to register in assigned topics students must obtain approval of the Division of Resource Management before registration.

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190. **Teaching Practicum.** 1-3 Hr.
191. **Special Topics.** 1-3 Hr.
194. **Professional Field Experience.** 1-18 Hr.
195. **Seminar.** 1-3 Hr.
196. **Senior Thesis.** 1-3 Hr.
197. **Honors.** 1-3 Hr.

**Russian (RUSS)**

1. **Elementary Russian.** I. 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.

2. **Elementary Russian.** II. 3 Hr. Continuation of RUSS I. Introduction to the sound and writing systems of the language, with emphasis on listening, reading, speaking, and writing.

3. **Intermediate Russian.** I. 3 Hr. PR: RUSS 2. Continued development of basic skills in listening, reading, speaking, and writing Russian.

4. **Intermediate Russian.** II. 3 Hr. PR: RUSS 3. Continuation of RUSS 3. Capstone course for the RUSS 1 through 4 sequence and foundation for advanced Russian study. Continued development of basic skills in listening, reading, speaking, and writing Russian.

103. **Conversation and Composition.** I. PR: RUSS 4. Emphasis on development of written and oral communicative skills of contemporary Russian.

104. **Conversation and Composition.** II. 3 hr. PR: RUSS 103. Continuation of Russ 103. Emphasis on development of written and oral communicative skills of contemporary Russian.

105. **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.

106. **The Russian Short Story.** II. 3 Hr. PR: RUSS 4. Reading, discussing, and writing in Russian about short stories of selected contemporary Russian writers.

109. **Advanced Structure and Reading.** I. 3 Hr. PR: RUSS 4. Development of communicative skills, with emphasis on reading authentic texts and review of Russian language structures.

110. **Advanced Structure and Reading.** II. 3 Hr. PR: RUSS 109. Continuation of RUSS 109. Development of communicative skills, with emphasis on reading authentic texts and review of Russian language structures.

117. **Russian Culture.** 3 Hr. PR: Russ 4. A study of Russian civilization, customs, and ethos.

144. **Survey of Russian Literature.** I. 3 Hr. PR: RUSS 4. A major works of selected Russian authors from the beginning through the nineteenth century, including those of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy.

145. **Survey of Russian Literature.** II. 3 Hr. PR: Russ 4. Major works of selected Russian authors from the beginning of the twentieth century to the present.

190. **Teaching Practicum.** 1-3 Hr.

191. **Special Topics.** 1-3 Hr.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

292. **Pro-Seminar.** I, II. 1-6 Hr. PR: 18 hr. of Russian or equiv.

**Social and Cultural Foundations (SCFD)**

1. **Education In The American Culture.** 3 Hr.
196. Seminar Thesis. 1-3 Hr.
197. Honors. 1-3 Hr.

Social Work (SOWK)
5. Social Welfare Institutions. I, II, S. 3 Hr. Examines the historical development of social welfare in the United States and the values that shape social welfare institutions. (3 hr. lec.)

47. Human Diversity. I, II, S. 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.

51. Introduction to Social Work. I, II, S. 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.

190. Teaching Practicum. 1-3 Hr.
191 A-Z. Special Topics. 1-4 Hr. PR: Consent. Topics of interest to perspective social workers. Students may enroll more than once.

194. Professional Field Experience. 1-18 HR.
195. Seminar. 1-3 HR.
196. Senior Thesis. 1-3 HR.
197. Honors. 1-3 HR.


219. Skills Lab 1. 1 Hr. PR: SOWK 51. This experiential component of SOWK 220 focuses on developing communication and interviewing skills, relationship building, and problem solving. (Pass/fail only).

220. Social Work Methods 1. I. 3 Hr. PR: SOWK 51. Presents a broad range of generalist practice knowledge, values, and skills: the problem-solving process, systems theories, developing client-worker relationships, interviewing, generalist roles, and professional values. Focuses on theories and interventions with individuals and families, and introduces evaluation of practice effectiveness. Requires 30 hours of volunteer activity.

221. Field Experience in Social Work. I, II, S.1-12 Hr. PR: SOWK 219 and 220. (Open to nonmajors by consent). Develops basic helping skills through volunteer or work experience in a community agency or program.


223. Skills Lab 2. 1 Hr. PR: SOWK 200, 219, 220 and 230. This experiential component of SOWK 223 includes skills in relationship building, problem solving, and planned change activities with groups, communities, and organizations. (Pass/fail only.)

230. Human Biology for Social Work. I. 3 Hr. PR: SOWK 51. Provides a basic understanding of the bio-psycho-social paradigm and the dynamics of human physiology important in social work practice.

250. Human Behavior for Social Work. II. 3 Hr. PR: PSYCH 141; SOC 121; SOWK 200, 219, 220, and 230. Examines, through an ecosystems framework, how individuals develop, function, and interact with a wide range of social systems. Applies social, biological, and behavioral sciences, and social work research and theory, to assessment and intervention. Emphasizes systemic factors that limit certain populations’ life opportunities and identifies practice implications.

260. Social Work Research and Stats. II. 3 Hr. PR: SOWK 200, 219, 220, and 230. 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.

282. Independent Study. 1-6 Hr. PR: Consent. Directed readings or research on topics not available in regular course offerings.

285 A-Z. Advanced Special Topics. I, II, S. 1-4 Hr. PR: Consent. Topics of interest to social work majors. Students may enroll more than once.

291. Field Practicum. I, II. 6 or 12 Hr. PR: SOWK 210, 222, 223, 250 and 260. Educationally-directed field placement in approved settings. Emphasizes developing professional competence in applying generalist knowledge, values, and skills. (Pass/fail only.)

Social Science (SSCI)

2. Introduction to General Course. 3 Hr.

191. Special Topics. 1-6 Hr.

Sociology and Anthropology (SOCA)

1. Introduction to Sociology. I, II, S. 3 Hr. Basic course intended to develop a perspective about the nature of social processes and the structure of society.

5. Introduction to Anthropology: I, II, S. 3 Hr. Essentials of human evolution and prehistory with a concentration on the varieties of languages and cultures found among peoples of the world.


51. World Cultures. II. 3 Hr. The comparative examination of contemporary peoples and cultures around the world. Examples range from small-scale, face-to-face tribal communities to folk and modern industrial societies. (Not open to students with credit for SOCA 5.)

105. Intro to Social Inequality. I, II. 3 Hr. 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.

121. Families and Society. I, II. 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.

122. The Community. I, II. 3 Hr. Social structure of small towns and rural communities. The community power structure and political participation as they relate to community planning.

123. Death and Dying. I, II. 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.

125. Illness and Health Care. I, II. 3 Hr. An overview of behavioral factors relating to occurrence of and response to illness, with particular emphasis upon American medicine. Designed especially for students interested in health-related careers.

131. Urban Society. I, II. 3 Hr. Ecological, demographic, and sociocultural patterns of cities and their hinterlands, including a study of racial and ethnic neighborhoods of the inner city and the process of suburbanization.

132. Criminal Justice. I, II, S. 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.


134. Corporate and White Collar Crime. I, II. 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.

135. Race Relations. I, II, S. 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.

136. Sociology of Religion. I, II. 3 Hr. Relationship of religion and society. Origin of religious institutions, structure, function, and role in change or stability of the social system.

137. Sociology of American Business. I, II. 3 Hr. 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.

138. Ethnic Groups. I, II. 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.

139. Organized Crime. I, II. 3 Hr. 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.

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145. Terrorism. I, II. 3 Hr. 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.

148. Lessons of the Vietnam War. II. 3 Hr. Political, legal, social, and military controversies surrounding the Vietnam War are examined through sociological perspectives on stratification, race relations, social movements, conflict resolution, deviance and social control. Features role play simulations, guest interviews, videos, lectures.

150. Archaeology Laboratory. II. 1 hr. Coreq: SOCA 158. Experiential activities to accompany SOCA 158 lecture material.


155. 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.

156. Traditional and Changing Africa. I, II. 3 Hr. A survey of traditional social institutions found in hunting/collecting, agricultural, and pastoral societies of sub-Saharan Africa. Labor migration, urbanization, agricultural cooperatives, and other consequences of colonial rule will be considered.

157. The Art of Primitive Peoples. I, II. 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.

158. Introduction to Archaeology. II. 3 Hr. Coreq.; SOCA 150. Methods and techniques of reconstructing prehistoric cultures, explaining cultural change, and explaining the formation of the archeological record.

159. World Prehistory. I, II. 3 Hr. A survey of prehistoric cultures from the lower paleolithic to the rise of cities in both the old and new worlds.


162. Sociology of Aging. I, II. 3 Hr. 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.

190. Teaching Practicum. I, II, S, 1-3 Hr.

191A-Z Special Topics. I, II, S. 1-3 Hr. Course topics change. Students may enroll more than once.

194. Professional Field Experience. I, II, S. 1-18 Hr. (Pass/fail grading only.) (May be repeated to a maximum of 18 hr.) PR: Consent. Experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. May involve temporary placement with public or private enterprise for professional competence development, or participation in archaeological excavation.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

199. 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.)

201. Sociological Theory. I, II. 3 Hr. PR: 6 Hr. SOCA and senior standing or consent. Systematic analysis of major sociological theories viewed from the historical perspective and in terms of current research.

202. Deviant Behavior. I, II. 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.

204. Complex Organizations. I, II. 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.

205. Class, Status, and Power. I, II. 3 Hr. PR: 6 hr. SOCA or consent. Analysis of various systems of social inequality. Emphasis on empirical studies describing social class system, distribution of status and power, and patterns of social mobility in America.
207. Constructing Social Problems. I, II. 3 Hr. 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.

211. Social Research Methods. I, II. 3 Hr. PR: SOCA 1 or SOCA 5 or consent. Logic of social research, elements of research design, and problems of measurement, with emphasis on survey research methodology and data analysis.

222. Third World Development. II. 3 Hr. PR: SOCA 122 or SOCA 131 or SOCA 140, or consent. Provides a Macroscopic view of political and social change in the Third World and specific knowledge of Third World development for issues related to population, food, debt, health, education, environment, and human rights.


225. Gender and Human Identity. 3 Hr.

230. The Criminal Justice System. II. 3 Hr. PR: SOCA 132 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.

231. Sociology of Law. II. 3 Hr. PR: SOCA 132 or SOCA 133 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.

232. Sociology of Education. I, II. 3 Hr. PR: SOCA 1 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.

233. Sociology of Work and Work Places. II. 3 Hr. PR: SOCA 1 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.

240. Social Change. I, II. 3 Hr. PR: 6 Hr. 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.

251. Culture and Language. II. 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.

253. Anthropology of Religion. I. 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.


256. Field Methods. II. 3 Hr. PR: SOCA 211 and STAT 101 or consent. The distinctive craft of data gathering in cultural anthropology. Development of skills in field methods and participant observation.

258. Anthropology of Health and Illness. I, II. 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.


262. Youth and Social Change. I or II. 3 Hr. PR: 6 hr. SOCA or consent. A structural-historical approach to the study of youth as both product and agent of social change. Emphasizes concepts of human development, life course transition, age stratification, birth cohort, lineage, historical period, and sociocultural generation.

263. Economy and Society. I, II. 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.

271. Social and Mental Health Disorders. 3 Hr.

290 A-Z. Special Topics. I, II, S. 1-3 Hr. PR: 6 hr. SOCA or consent. Topics change so students may enroll more than once.

291. Honors Seminar. 1-3 Hr.
Independent Study. I, II, S. 1-6 Hr. per sem. PR: 3.0 grade-point average and written departmental permission. Directed reading or research for students desiring work not available in regular course offerings.

**Spanish (SPAN)**

1. **Elementary Spanish.** I, II. 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.)

2. **Elementary Spanish.** I, II. 3 Hr. PR: SPAN 1 or score of S2 on placement exam. Continuation of SPAN 1. Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading, and writing within an authentic cultural context.

3. **Intermediate Spanish.** I, II. 3 Hr. PR: SPAN 2 or score of S3 on placement exam. Continuation of SPAN 2.

4. **Intermediate Spanish.** I, II. 3 Hr. PR: SPAN 3 or score of S4 on placement exam. Foundation for advanced study of Spanish. Emphasis on oral and written communication.

10. **Intensive Elementary Spanish.** I. 6 Hr. PR: Score of F1 on placement test or no prior study of the language or departmental consent. Equivalent of SPAN 1 and 2 combined into one course.

11. **Intensive Intermediate Spanish.** II. 6 Hr. PR: SPAN 1 and 2 or SPAN 10 or consent. The equivalent of SPAN 3 and 4 combined into one course.

103. **Spanish Conversation.** I, II. 3 Hr. PR: SPAN 4. Major emphasis on improving conversational skills by means of discussions and oral reports. Grammar review where appropriate and written work.

104. **Reading and Composition.** I, II. 3 Hr. PR: SPAN 4. Major emphasis on reading development and writing skills. Grammar review where appropriate. Class discussion in Spanish.

109. **Advanced Grammar.** I, II. 3 Hr. PR: SPAN 4. A study of major points of Spanish grammar with particular attention to more advanced structures. Class discussion, readings and composition in Spanish.

110. **Advanced Reading and Composition.** I, II. 3 Hr. PR: SPAN 103 and 104. Study of different genres and styles. Class discussion and written analyses in Spanish.

115. **Latin American Culture.** I. 3 Hr. PR: Spanish 103 and 104. Survey of Latin American civilization and culture from the pre-Colombian period to the present.

116. **Culture of Spain.** II. 3 Hr. PR: SPAN 103 and 104. Survey of Spanish civilization and culture from its origins to the present day.

131. **Early Spanish American Literature.** I. 3 Hr. PR: SPAN 110. Readings in Spanish American literature from the colonial period to Modernism.

132. **Modern Spanish American Literature.** II. 3 Hr. PR: SPAN 110. Readings in Spanish American literature from Modernism to the present.

133. **Early Literature of Spain.** I. 3 Hr. PR: SPAN 110. Readings in Spanish literature from the medieval period to the eighteenth century.

134. **Modern Literature of Spain.** II. 3 Hr. PR: SPAN 110. Readings in Spanish literature from the eighteenth century to the present.

190. **Teaching Practicum.** 1-3 Hr.

191 A-Z. **Special Topics.** I, II. 1-4 Hr. PR: Consent.

194. **Professional Field Experience.** 1-18 Hr.

195. **Seminar.** 1-3 Hr.

196. **Senior Thesis.** 1-3 Hr.

197. **Honors.** 1-3 Hr.

201. **Commercial Spanish 1.** I. (Alternate Years). 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.

202. **Commercial Spanish 2.** II. (Alternate Years). 3 Hr. PR: SPAN 201. Continuation of SPAN 201.

210. **Caribbean Literature.** 3 Hr. PR: At least one literature course in Spanish. Readings of selected works by Hispanic writers from the Caribbean region.

221. **Golden Age Literature.** II. 3 Hr. PR: At least one literature course in Spanish. Readings in Spanish literature of the Renaissance and Baroque periods in the novel, the comedia, and lyric poetry.

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292 A-Z. Pro-Seminar. 1-6 Hr. PR: Consent. Special Topics.

299. Grammar Review. I. 3 Hr. Intensive grammar review for graduate students. (Credit does not count toward 36 hrs. required for master’s degree.)

**Special Education (SPED)**

250. 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.

255. Introduction to Mental Retardation. 3 Hr. PR: Consent. Historical, etiological, social, educational, and vocational aspects of mental retardation.

260. Curriculum and Methods for Special Education. 3 Hr. PR: SPED 250 and SPED 255 or consent. Organization of instruction, adaptation of teaching methods in several curricula areas and construction of materials.

262. Curriculum and Methods for the Trainable Mentally Retarded. 3 Hr. PR: SPED 250, SPED 255 or consent. Special problems of curriculum development for the trainable child and adult and development of original construction of curricula materials.

280. Student Teaching Clinical Experience in Special Education. 1-6 Hr. PR: Consent. Student teaching with the mentally impaired.

281 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.

**Speech Pathology and Audiology (SPA)**

(Due to college curriculum review, actual course sequence and offering may differ from catalog listings. Please see program advisor.)

50. Introduction to Speech and Hearing. I. 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.

75. 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.

80. 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.

150. Speech Science. I. 4 Hr. PR: SPA 50 or consent. Detailed discussion of the speech production process, including acoustic, anatomical, and physiological aspects of speech production.

151. Hearing Science. II. 4 Hr. PR: SPA 150. Detailed discussion of auditory processing in the speech perception process, including acoustic, anatomical, and physiological aspects of speech perception.


191. Special Topics. I, II, S. 1-3 Hr. per semester; (max. 6 Hr.). PR: Consent. Independent study in speech-language pathology, audiology, and speech, language and hearing sciences.

197. Honors. 1-3 Hr.
254. **Language Acquisition.** I. 3 Hr. PR: SPA 150 and SPA 153. 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 treatment of language disorders.


256. **Voice and Stuttering.** II. 3 Hr. PR: SPA 50 and SPA 255. 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.

257. **Clinical Programs in Schools.** I. 3 Hr. PR: SPA 254 and SPA 255. Organization and structure of clinical programs in public school settings. Discussion of state and federal regulations, case selection, scheduling, program planning, and other administrative and programmatic matters.

258. **Language Disorders.** II. 3 Hr. PR: SPA 254. The nature and etiology of child and adult language disorders are described. Assessment and remediation procedures are examined.

259. **Parent Programs Communication Disorders.** II. 3 Hr. 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 communicatively handicapped children in various practica experiences and practice.

260. **Clinical Observation/SLP.** I, II. 1 Hr. PR: SPA 50 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, and cues and feedback. (Graded pass/fail)

261. **Clinical Observation/Audiology.** I, II. 1 Hr. PR: SPA 50 or consent. Introduction to clinical procedures and issues, including professional ethics, certification requirements, assessment/treatment process variables, clinical observations, behavioral objectives, and cues and feedback. (Graded pass/fail)

262. **Professional Writing/Speaking.** I. 3 Hr. (For majors only). PR: ENGL 1 and ENGL 2 and SPA 80 or consent. Designed for improvement of student’s 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.

263. **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)

264. **Clinical Practice/Audiology.** I, II, S. 3 Hr. PR: Consent. Orientation to clinical methods for evaluation and treatment of hearing disorders. (Graded pass/fail)

265. **Hearing-Impaired School Child.** 3 Hr. Audiology in the public school classroom; remediation for the hearing-impaired child.

**Sport Studies (SS)**

67. **Introduction to Sport Studies.** I, II, S. 3 Hr. Examines the historical and philosophical bases, major issues and professional practices in sport studies.

71. **Sport in American Society.** I, II. 3 Hr. Sociocultural investigation of sport in American society.

72. **Psychological Perspectives of Sport.** I, II, S. 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.


185. **Sport Management.** I. 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.

186. **Sport Marketing.** II. 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.

188. **Professional Field Experience: Sport Management.** I, II, S. VR 1-12. PR: Junior standing. A student internship in selected agencies, businesses, and schools related to sports. (Graded Pass/Fail).

189. **Professional Field Experience: Sport Behavior.** I, II. S. 1-12 Hr. PR: Junior standing. A student internship in selected agencies, businesses, and schools related to sport. (Graded pass/fail)

198. **A-Z Special Topics.** I, II, S. 1-3 Hr. In-depth analysis of sport studies subject matter areas through an innovative course or research or field experience not included in the major curriculum but as an adjunct to the curriculum.

225. **Facility Planning.** II. 3 Hr. PR: Consent. An in-depth study of sport facilities, including planning, design, liability and facility management concepts and evaluation.
226. Liability in Sport. I, 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.

227. Legal Issues in Sport Administration. II, 3 Hr. PR: Sport management majors only. The NCAA, its rules, and its regulations: In-depth study of professional sport leagues, their constitution, by-laws, regulations, collective bargaining agreements, standard player contracts; legal issues involving sport agents.

Statistics (STAT)

101. Elementary Statistical Inference. I, II, S. 3 Hr. PR: MATH 3. (Not open to students who have completed STAT 201.) Basic concepts of descriptive and inferential statistics; descriptive measures, random variables, sampling distributions, estimation, tests of hypotheses, chi-square tests, regression and correlation. (Equiv. to ECON 125.)

190. Teaching Practicum. I, II, S. 1-3 Hr. (May be repeated for a maximum of 6 Hr.) PR: STAT 212 and STAT 261. Practical classroom experience for undergraduate teaching assistants. Tasks assigned are those designed to provide experience with course design, implementation, evaluation, and revision of classroom work.


205. Introductory Probability and Statistical Inference. I. 3 Hr. PR: MATH 128 or equiv. Probability, random variables, expectation, random sampling, descriptive statistics, sampling distributions, estimation, hypothesis testing, linear regression, and nonparametric statistics.

212. Intermediate Statistical Methods. I, II. 3 Hr. PR: STAT 101 or STAT 201 or equiv. Extension of basic concepts of statistical inference: estimation and hypothesis testing for more than two populations, multiple regression and correlation, analysis of variance and covariance.

213. Introductory Design and Analysis. II. 3 Hr. PR: STAT 212. 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.

221. Statistical Analysis System (SAS). I. 3 Hr. PR: STAT 201 or STAT 212 or equiv. 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.

231. Data Analysis. I. 3 Hr. PR: STAT 213. 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.


Technology Education (TE)

81. Technology and Change. 3 Hr.

190. Teaching Practicum. 1-3 Hr.
191 A-Z. Special Topics. 1-3 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

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 health, income, credit and technology, and to study women's contributions in third world development.

280 A-Z. Special Problems and Workshops. I, II, S. 1-6 hr. To provide credits for special workshops and short unit courses on special topics.

281. Introduction to Technology. 3 Hr. An introduction to selected technical concepts and the evolution of the technical systems of transportation, communication, and production, with a focus on the relationship of these systems to technological change and the civilization process.

Textiles, Apparel and Merchandising (TA&M)


121. Soc-Psyc. Aspects of Dress. I. 3 Hr. PR: (SOCA 1 or SOCA 5 or SOCA 51) and PSYC 1. Interdisciplinary approach to the study of clothing including cultural, historical, social, psychological, physical, economic, and aesthetic factors and their significance to the individual and to society.

122. Visual Merchandising. II. 3 Hr. PR: TA&M 27 and TA&M 121. Visual merchandising including display and design; on-site store analysis and development of design proposals by student teams.

124. Apparel Construction and Fitting. I. 3 Hr. PR: (MATH 3 or MATH 23) and TA&M 27 and Sophomore standing. Basic principle of apparel construction, pattern alteration, and fitting used in the apparel industry.

126. History of Costume. II. 3 Hr. PR: TA&M 121 and TA&M 124. History of costume from the ancient civilizations to the present day in relation to technological, social, cultural, and economic influences.

127. Textiles for Interiors. II. 3 Hr. PR: TA&M 27. Study of textile products for commercial and residential interiors. Production techniques, construction variables, and quality factors affecting serviceability are emphasized. Federal legislation governing labeling, mandates concerning safety, and marketing strategies influencing selection are included.

191. Special Topics. 1-3 Hr.

193. Fashion Merchandising Internship. 3 Hr. PR: TA&M 122 and senior standing in textiles, apparel and fashion merchandising, and 2.5 GPA during previous two semesters. Fashion merchandising practices are explored through an on-site supervised work experience. Students complete an activity journal and check list; conferences are held with the internship coordinator.

195. Seminar. 1-3 Hr.

222. Fashion Merchandising. I. 3 Hr. PR: 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.

224. Flat Pattern Design. II. 3 Hr. PR: TA&M 27, 124, TA&M 224 and TA&M 126 or consent. Opportunity for creative expression and for understanding of pattern design understanding of pattern design through the flat pattern. Apparel designed and constructed by the student.

226. Apparel Design and Illustration. II. 3 Hr. PR: TA&M 224 or consent. Techniques of drawing using a live fashion model and various media for apparel design presentation. Sources of design inspiration examined for developing original apparel designs. Art principles and fashion terminology explored.

227. Textiles in the Global Economy. (Even years). 3 Hr. PR: TA&M 27. Explores economic, political and social dimensions of the international production and trade of textiles and apparel. Emphasis is on U.S. textile complex within an international perspective.

228. Functional Apparel. I. 3 Hr. PR: ENGL 1 and ENGL 2, and TA&M 224. Physical, psychological, and sociological clothing needs of individuals with functional limitations. Historical developments, current research needs. Each student conducts a community-based project.

229. Merchandising Study Tour. II. 1 Hr. PR: Junior or senior standing in textiles, apparel and fashion merchandising. Study of the textile, apparel and retail industries through on-site visits to historic costume collections, apparel manufacturing firms, design showrooms, buying offices, and retail establishments. Readings included.
30. 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.

50. Oral Interpretation. I, II. 3 Hr. (Open to all students.) Development of mental and emotional responsiveness to written materials. Techniques of communicating through oral reading.


52. Fundamental Vocal Techniques. II. 2 Hr. PR: THET 51. Cont. of THET 51.


72. Fundamentals of Stage Movement. II. 2 Hr. PR: THET 71. Cont. of THET 71.

74. 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.


76. Fundamentals of Acting. II. 3 Hr. PR: THET 75. Continuation of THET 75.

95. Basic Theatre Concepts. II. 3 Hr. Theatrical concepts based upon an examination of historical conventions and play analysis.

100. 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.

105. 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.

106. Stage Management. I. 3 Hr. PR: THET 74 or THET 75; and THET 100, and THET 105. Overview of stage and house management for theatrical productions. Projects include creating a prompt script and gaining American Red Cross Certification in standard first aid.

107. Fundamentals of Lighting. I, II. 3 Hr. PR: THET 100 and THET 105. Fundamentals of stage lighting through formal lecture and practical experience. Laboratory requirements include assignments on the lighting/electrics crews for division productions.

110. Theatre Makeup. I, II. 3 Hr. Lecture-laboratory course in art of stage makeup. Practical makeup for University Theatre productions.

130. Theatre in the Modern World. I, II, S. 3 Hr. (May be repeated for a maximum of 6 Hr.) Intensive study of the work of a playwright, a group of playwrights, or a theatrical movement of the twentieth century; particular emphasis of relationship of course materials to twentieth century values and society.

151. Intermediate Vocal Techniques. I. 2 Hr. PR: THET 52. Reinforcement of basic vocal techniques with special focus on the actor’s individual qualities.

152. Intermediate Vocal Techniques. II. 2 Hr. PR: THET 151 and consent. Continuation of THET 151.


175. Intermediate Acting. I. 3 Hr. PR: THET 76. Exercise work and fundamental techniques of scene study.

176. Intermediate Acting. II. 3 Hr. PR: THET 175. Continuation of THET 175.


179 A-Z. Directed Theatre Activities. I, II. 3 Hr. (May be repeated for max. of 6 hr. credit). PR: Consent. Assigned theatre projects supervised by faculty.

180. Directing. I, II. 3 Hr. Fundamentals theory and practice of directing for live theatre; with emphasis on script analysis, director-actor communication, groundplan, and composition.

190. Teaching Practicum. 1-3 Hr.

191 A-Z. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

195. Seminar. 1-3 Hr.

196. Senior Thesis. 1-3 Hr.

197. Honors. 1-3 Hr.

200 A-Z. Directed Theatre Studies. I, II. 1-12 Hr. (May be repeated for max. 12 hr. credit.) PR: Consent. Studies in theatre history, performance, stage design and technology and theatre crafts. Subject matter and number of sections varies from semester to semester.

201. Advanced Costume Construction. I, II. 3 Hr. PR: THET 105. 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 hr. credit.)

205. Stagecraft 2. II. 3 Hr. PR: THET 100 and THET 161. Detailed study of scenery construction and technical theatre. Emphasis on research projects, advanced sceno-graphics and problem-solving techniques. Practical experience through work on productions.


210. Theatre Dance 1. 2 Hr.

211. Theatre Dance 2. 2 Hr.

218. Period Style for the Theatre. II. 3 Hr. Survey of architecture, painting, sculpture, ornamentation, and furniture from the Egyptian through contemporary periods as utilized in stage design. Lecture with slides and film, and project work.

219. Stage Properties. 3 Hr. PR: THET 100 and THET 105. 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.

220. Costume History. 3 Hr. History survey of dress and culture as they imoacted the development of costume in art and theatre from ancient Egypt to the last decade of the twentieth century.

221. Costume History 2. II. 3 Hr. Detailed study of the history of clothing from Renaissance to the present as it relates to costume design for the stage. Practical experience in development and presentation of designs based on historical and contemporary clothing.

223. Costume Crafts. I. 3 Hr. PR: THET 105 and THET 201 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.

225. Advanced Technical Production. II. 3 Hr. PR: THET 100. Study of advanced technical procedures including rigging, welding, new materials and special effects. Emphasis on the practices and development of skills through projects.

240. Musical Theatre Repertory. 2 Hr.

242. Musical Theatre Literature. 3 Hr.


260. Theatre Performance and Rehearsal Laboratory. I, II. 1-3 Hr. (May be repeated for max. 9 hr. credit.) PR: Theatre major and consent. Participation is assigned theatre projects. Appreciation of creativity and performance techniques in theatre.
262. Scene Painting, II. 3 Hr. PR: THET 267 and THET 367. An introduction to the basic tools, materials, and techniques of scene painting for the stage.

265. CAD for the Stage, I, II. 3 Hr. PR: THET 161. Study of the graphic applications of computer assisted design and drafting for stage design through project work and exercises in a studio format.

267. Graduate Scene Design, I, II. 3 Hr. Experience in the design of scenic environments including conceptualization, drafting, rendering, and model building related to the development and presentation of scenic design. (May be repeated for a max. 9 hr. credit.)

268. Costume Design, I, II. 3 Hr. PR: THET 220 and THET 221. Experience in the design of stage costumes including conceptualization, characterization, and rendering techniques related to the development and presentation of costume design. (May be repeated for a max. 9 hr. credit.)

269. Lighting Design, I, II. 3 Hr. PR: THET 203. 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.)


278. Repertory Theatre, I. 1-6 Hr. PR: Consent. Rehearsal and performance techniques for producing plays in rotating repertory. Emphasis is on the creation of a synthesized company of performers, designers, and technicians.

279. Advanced Directing, II. 3 Hr. PR: THET 180 or consent. Emphasis on the work of the director as an integrating artist. High level of proficiency in the direction of a one-act play is required of all students enrolled.

280. Creative Dramatics, I, II. 3 Hr. Study and practice of creative drama for theatre education or classroom/curriculum use. Instructional methods for drama techniques and practical activities are stressed.

282. Puppetry, I, II. 3 Hr. Comprehensive study of puppetry as a theatrical form. Construction, manipulation, and production methods for adult and youth audiences are highlighted.

289. Playwriting, I. 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.

291. Advanced Playwriting, II. 3 Hr. PR: THET 290. 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 playwriting career.

295. Classic Theatre to 1650, I. 3 Hr. A survey of theatre history, with emphasis on the development of performance conditions, from classical antiquity through the middle of the seventeenth century.

296. Euro/American Theatre, 1650-1850, II. 3 Hr. 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.

297. Modern Theatre, 1850-1940, I. 3 Hr. A survey of theatre history, with emphasis on the development of performance conditions, from the middle of the nineteenth century to the outbreak of World War II.

298. Contemporary Theatre Since 1940, II. 3 Hr. A survey of theatre history, with emphasis on the development of performance conditions, from World War II to the present.

Veterinary Sciences (VETS)

102. Animal Pathology, II. 3 Hr. PR: ANPH 100 or consent. Diseases of farm animals with special emphasis on their cause, prevention, and control.

190. Teaching Practicum. 1-3 Hr.

191. Special Topics. 1-3 Hr.

194. Professional Field Experience. 1-18 Hr.

205. Parasitology, II. 3 Hr. PR: Course in biology or consent. 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.)

210. 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.)

400 Veterinary Sciences
Wildlife Management (WMAN)


221. Interpretive Bird Study. II. 3 Hr. PR: BIOL 17 or consent. Intensive field studies in recognition through sight, song, and behavioral patterns of birds, and their ecology in the Central Appalachians. (2 hr. lec., 2 hr. lab.)

224. Vertebrate Natural History. I. 3 Hr. PR: BIOL 17 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.

225. Mammalogy. II. 3 Hr. PR: BIOL 17 or consent. Mammals and their biological properties with emphasis on life history, ecology, and distribution of regional forms. (Also listed as BIOL 258.)

226. Ornithology. II. 3 Hr. PR: BIOL 15 and BIOL 17, or consent. Identification, distribution, and ecology of birds (particularly of forest lands.) (2 hr. lec., 1 hr. lab.)

228. Wildlife Policy and Administration. II. 3 Hr. Study of the organization, authority, policies, programs and administration of public agencies and private organizations concerned with fish and wildlife. Emphasis is in the legal and political role in making wildlife management decisions.

231. Wildlife Habitat Techniques. I. 3 Hr. PR: Wildlife major or consent; WMAN 213 and FOR 5. Field and laboratory techniques necessary in management and study of wildlife; collection of field data, mapping, censusing, habitat evaluation, wetland delineation, use of literature and scientific writing.

234. Principles of Wildlife Animal Damage Control. II. 3 Hr. PR: Wildlife major or consent: WMAN 213 and WMAN 231. Basic principles of controlling wildlife damage to agriculture crops, forest resources, human lives, and human property. Includes methods of identifying damage caused by various wildlife species.


245. 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.

250. Pollution and Management of Aquatic Ecosystems. II. 3 Hr. PR: Junior standing. Biological and ecological effects of water pollution and loss of freshwater resources. Topics include effects of effluents, water diversion, and land use practices on aquatic resources in lake, river, and wetland environments, mitigation and management techniques, and regulatory structures.

280. Wildlife/Fisheries Field Tech. I, S. 3 Hr. PR: Junior or senior standing. Survey of methods and techniques frequently used in the field by wildlife and fisheries managers. Class is taught off-campus.

Women’s Studies (WMST)

40. 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.

145. 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.

150. 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.

160. Women’s Movements Since 1960. 3 Hr. Contemporary women’s movements; comparison of U.S. Second and Third Wave feminisms. Impacts of race, class, sexual orientations and controversies around pornography, rape, and reproductive rights.

190. Teaching Practicum. 1-3 Hr.

191 A-Z. Special Topics. I, II. S. 1-3 Hr. PR: Consent. Interdisciplinary studies on women and gender within the humanities, social sciences, and natural science. Topics change from semester to semester; students can enroll more than once.

194. Professional Field Experience. I, II. S. 1-18 Hr. PR: Consent. Supervised interdisciplinary experiences carried out in connection with government, social service, and other approved agencies, organizations, and women-centered projects.
Seminar. 1-3 Hr.

Senior Thesis. 1-3 Hr.

Honors. 1-3 Hr.

Methods and Perspectives in Women’s Studies. I, II. 4 Hr. PR: 9 hr. in approved women’s studies courses and junior standing, or consent. An exploration of major theoretical perspectives on and research methods appropriate to the interdisciplinary study of women and gender.

Independent Study. I, II, S. 1-6 Hr. PR: Consent. Individual study of an interdisciplinary issue in women’s studies and/or gender studies.

Wood Science (WDSC)


Primary Conversion and Grading. II. 3 Hr. PR: Forestry major or consent. Principles of the conversion of raw materials in log form to primary wood products. Elements of the grading of raw materials and primary products. Production planning and control.

Special Topics. 1-3 Hr.

Professional Field Experience. 1-18 Hr.

Forest Measurement Field Practice. S. 3 Hr. PR: Wood Industry major, FOR 5, CE 1, FMAN 122. Application of surveying and mensurational practices with emphasis on field problems.

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.

Wood Chemistry. I. 3 Hr. PR: Wood Industry major or consent, and CHEM 131 or CHEM 133. Chemical composition of wood including cellulose, hemicellulose, and extractives. Chemical processing of wood.

Harvesting Forest Products. II. 3 Hr. PR: MATH 4 or equivalent and WDSC 132. 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.)

Forest Roads. I. 4 Hr. PR: CE 5 and CS 5. A study of techniques and methods of design, layout and construction details of various standards of forest roads.

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.)

Light-Frame Wood Construction. I. 2 Hr. PR: Forestry major or consent. Use of wood in light-frame construction. Basic design procedures and construction methods.

Wood Adhesion and Finishing. II. 3 Hr. PR: Wood Industry major or consent; WDSC 123 and WDSC 141. Fundamentals of the bonding and finishing of wood including preparation, processing, and evaluation of adhesive and finishing systems.

Physical Behavior of Wood. II. 3 Hr. PR: WDSC 123, and PHYS 1, and MATH 4. Specific gravity and density of wood; relationships between wood and liquids and applications in wood seasoning; thermal, electrical, and acoustical properties.

Wood Mechanics. 3 Hr. PR: Wood industry major or consent; WDSC 123, and MATH 15, and PHYS 1. 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.)

Forest Products Protection. II. 3 Hr. PR: WDSC 123. Biological organisms responsible for deterioration of wood products, their control by preservative methods, and study of fire retarding methods.

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.

Forest Product Decision-Making. I. 4 Hr. PR: Junior standing in forestry and MATH 15 and STAT 101. 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.)

Wood-based Composite Materials. 3 Hr. PR: WDSC 132, and WDSC 240, and WDSC 241. Fundamentals of manufacturing wood-based composite materials, including processing, products, evaluation, and applications in the marketplace. (2 hr. lec., 1 hr. lab.)
West Virginia University Faculty
College of Agriculture, Forestry and Consumer Sciences
Division of Animal and Veterinary Sciences

Professors
E. Keith Inskeep, Ph.D. (U. Wisc.). Reproductive physiology.
Rosemary R. Haggett, Ph.D. (U. Va.). Dean and Director. Physiology and reproductive biology.

Associate Professors
L. Samuel Barringer, D.M.V. (U. Cal.). Veterinary medicine.
John R. Kunkel, D.V.M. (U. Minn.). Veterinary medicine.
Phillip I. Osborne, Ph.D. (Clemson). Extension Specialist. Livestock marketing and production.

Assistant Professors
P. Brett Kenney, Ph.D. (Kansas St. U.). Food science.
John Killefer, Ph.D. (Ore. St.). Nutritional biochemistry.

Adjunct Faculty
Robert L. Cochrane, Ph.D. (U. Wisc.).
Casey W. Ritz, Ph.D. (VPI).

Emeritus Faculty
Gerald C. Anderson, Ph.D. (U. Mo.)
Donald J. Horvath, Ph.D. (Comell U.).
William G. Martin, Ph.D. (WVU).
Marvin R. McClung, Ph.D. (Iowa St. U.).
W. Byron Moore, M.S. (WVU).
Robert L. Reid, Ph.D. (Aberdeen U.).
Paul M. Smith, M.S. (WVU). Food sciences.
James A. Welch, Ph.D. (U. Ill.).

Division of Family and Consumer Sciences
Child Development and Family Studies

Professor

Associate Professor
Carol Markstrom, Ph.D. (Utah St. U.). Social context of families and individuals, Adolescent development, Ethnicity.

Assistant Professor

Human Nutrition and Foods

Professors
Associate Professor

Instructor

Interior Design
Assistant Professors
Nancy G. Miller, Ph.D. (Utah St.). Interior materials and structures, Space planning.

Textiles, Apparel and Merchandising
Professor
Nora M. MacDonald, M.S. (Iowa St. U.). Apparel design, Clothing for special needs, Fashion merchandising.

Associate Professor

Assistant Professor

Adjunct Faculty
Claudia Asvestos
Diane Findley
Debra Krummel, Ph.D. (Penn St. U.).
Lucy Jackson-Bayles
Chet D. Johnson, M.D. (U. Kans.).
Ranjit K. Majumder, Ph.D. (U. Okla.).
Kari M. Price, M.S. (WVU).
Richard J. Strasburger, Ph.D. (WVU).

Emeritus Faculty
Gladys R. Ayersman
Babette Graf
Mary Rose Jones
Reva B. Neely
Betty Lou Ramsey
John A. Schultz
Carl B. Taylor

Division of Forestry
Professors

Associate Professors
Steven J. Hollenhorst, Ph.D. (Ohio St. U.). Recreation and Parks. Outdoor recreation.
Steven W. Selin, Ph.D. (U. Ore.). Recreation and Parks. Tourism development.

Assistant Professors
Dean W. Coble, Ph.D. (U. of Montana). Forest mensuration.
Rory F. Fraser, Ph.D. (Penn St. U.). Forest Management. Forest economics, Forest policy.
Linda Gribko, Ph.D. (WVU). Forest resources management systems.
Michael Schuett, Ph.D. (U. of Ill.). Outdoor recreation behavior, planning, and management of parks and natural resources.
Theresa Wang, M.S. (U. of Minn.). Outdoor recreation and environmental interpretation and education.

**Instructor**

**Adjunct Faculty**
Patricia M. Mazik, Ph.D. (Memphis St. U.). Fisheries.
Mark Twery, Ph.D. (Yale U.). Forest Management.

**Emeritus Faculty**
Eugene C. Bammel, Ph.D. (Syracuse U.).
Joseph M. Hutchision, Jr., M.S. (WVU).
William E. Kidd, Jr., M.S.F. (VPI & SU).
Robert L. Smith, Ph.D. (Cornell U.).
Earl H. Tryon, Ph.D. (Yale U.).
David E. White, Ph.D. (SUNY).
Harry V. Wiant, Jr., Ph.D. (Yale U.).
William L. Wylie, M.S. (WVU).

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**Division of Plant and Soil Sciences**

**Professors**
Associate Professors

Assistant Professors
Rajeev Arora, Ph.D. (U. Wisc.). Environmental horticulture, Crop physiology.
Louis McDonald, Ph.D. (U. Ky). Soil chemistry.

Adjunct Faculty
Tong-Man Ong, Ph.D. (Ill. St. U.). Genetics.
Thomas van der Zvet, Ph.D. (LSU). Plant pathology.
Paul F. Ziemkiewicz, Ph.D. (U. Br. Col.).

Emeritus Faculty
Robert E. Anderson, Ph.D. (U. Wisc.).
James L. Brooks, Ph.D. (U. Calif.).
Edward S. Elliott, Ph.D. (WVU).
Mannon E. Gallegly, Jr., Ph.D. (U. Wisc.).
Dale F. Hindal, Ph.D. (Iowa St. U.).
L. Morris Ingle, Ph.D. (Purdue U.).
Robert F. Keefer, Ph.D. (Ohio St. U.).
David O. Quinn, M.S. (WVU).
Oscar E. Schubert, Ph.D. (U. Ill.).
Rabindar. N. Singh, Ph.D. (VPI & SU).
Charles B. Sperow, Jr., M.S. (WVU).
Harold A. Wilson, Ph.D. (Iowa St. C.).
Robert J. Young, Ph.D. (Ore. St. U.).

Division of Resource Management
Agricultural and Resource Economics
Professors
Dale K. Colyer, Ph.D. (U. Wisc.). Production economics, Rural development.
Jerald J. Fletcher, Ph.D. (U. Cal.). Resource economics.
Tim T. Phipps, Ph.D. (U. Cal.). Resource economics, Agricultural Policy.
Peter V. Schaeffer, Ph.D. (U. Southern Cal.). Director, Regional science, Applied microeconomics.

Associate Professors

Agricultural and Environmental Education
Professors
Stacy A. Gartin, Ph.D. (Ohio St. U.). Communications, Program planning, Leadership development, Teaching methods.
Layle D. Lawrence, Ph.D. (LSU). Social science research, Curriculum development, Teaching methods, Extension education.

Associate Professor
Kerry S. Odeil, Ph.D. (Ohio St. U.). Associate dean. Research methodology, Microcomputer applications, Teaching methods.

Assistant Professor
Landscape Architecture

Professors
George W. Longenecker, M.F.A. (U. Ill.). Plant identification, Planting design.

Associate Professors
Donald R. Armstrong, M.L.A. (Iowa St.). Site design, Design implementation.
Alexander G. Karther, M.F.A. (U. Okla.). Design communication, Design Methodology.

Assistant Professor

Emeritus Professors
P. Vernon Armbrester, M.S. (WVU).
Alfred L. Barr, Ph.D. (Oklahoma St. U).
Gerald V. Eagan, Ph.D. (U. Tenn.).
Kendall Elliott, M.S., Ag. E. (WVU).
Warren G. Kelly, Ed.D. (U. Mo.).
Marion L. Kimmons, Ph.D. (U. Mo.).
Beryl B. Maurer, Ph.D. (Penn. St. U.).
Kenneth D. McIntosh, Ph.D. (U. Wisc.).
Leonard M. Sizer, Ph.D. (WVU).
Ronald L. Stump, M.S. (WVU).
Mary E. Templeton, M.S. (WVU).
George E. Toben, M.S. (U. Ill.).
Delmar R. Yoder, Ph.D. (U. Wisc.).

Africana Studies Program

Faculty Associates
Katherine Bankole, Ph.D. (Temple U.). Adjunct Assistant Professor, History, Africana Studies, Women’s Studies, Director, Center for Black Culture and Research, Coordinator, Africana Studies Program.
Amos J. Beyan, Ph.D. (WVU). Associate Professor, History.
Theresa Davis, M.F.A. (VA Commonwealth U.). Associate Professor, CAC, Division of Theatre and Dance.
Sandra Dixon, Ph.D. (Brown U.). Assistant Professor, Foreign Languages.
Calvin Masilela, Ph.D. (VPI and SU). Assistant Professor, Geography.
Robert Maxon, Ph.D. (Syracuse U.). Professor and Chair, History.
Jose V. Pimentel-Bey, Ph.D. (Temple U.). Assistant Professor, History and Africana Studies.
Judith A.M. Scully, J.D. (George Washington U.). Associate Professor, College of Law.
Reuben Simoyi, Ph.D. (Brandeis U.). Professor, Chemistry, Arts and Sciences.
Ethele Smith, M.A. (Hollins College). Assistant Professor, English.
Janice Spleth, Ph.D. (Rice U.). Professor, Foreign Languages.
Daniel Weiner, Ph.D. (Clark U.). Associate Professor, Geography, Director, International Programming.
Christopher Wilkinson, Ph.D. (Rutgers U.). Associate Professor, Music.
Rodger Yenger, Ph.D. (Syracuse U.). Professor, Political Science.
Paschal Younge, Ph.D. (WVU). Assistant Professor, Music.
Biology

Professors
Roy B. Clarkson, Ph.D. (WVU). Emeritus.
John Hall, Adjunct Professor. Emeritus.

Associate Professors
Otho C. Montiegel, M.S. (WVU). Emeritus.
Leah A. Williams, Ph.D. (WVU). Emeritus.

Assistant Professors

Clinical Assistant Professor

Chemistry

Professors
George A. Hall, Ph.D. (Ohio St. U.). Emeritus.
Jeffrey L. Petersen, Ph.D. (U. Wisc.). Physical inorganic chemistry, Transition metal complexes, X-ray diffraction.
Kenneth Showalter, Ph.D. (U. Colo.). Eberly Family Distinguished Professor. Physical chemistry, Chemical kinetics, Multistability and oscillating systems.

Associate Professors
Charles Jaffe, Ph.D. (U. Colo.). Theoretical chemistry, Molecular dynamics, Nonlinear mechanics.
Fred L. King, Ph.D. (U. Va.). Analytical chemistry, Mass spectrometry, Trace elements, Gas-phase ion chemistry.
Ronald B. Smart, Ph.D. (U. Mich.). Associate Chairperson. Environmental analytical chemistry, Electrochemistry, Trace metals, Coal chemistry.
Alan M. Stolzenberg, Ph.D. (Stanford U.). Inorganic chemistry, Bioinorganic chemistry, Organometallic chemistry.

**Assistant Professors**
Katherine J. Covert, Ph.D. (Cornell U.). Inorganic chemistry, Organometallic chemistry.
Terry Guillion, Ph.D. (William and Mary). Physical chemistry, Solid state NMR, Biological materials, Polymers.

**Communication Studies**

**Professors**
Donald W. Klopf, Ph.D. (U. Wash.). Emeritus.
Virginia P. Richmond, Ph.D. (U. Nebr.). Interpersonal, organizational, nonverbal, and instructional communication.

**Associate Professors**
Melanie Booth-Butterfield, Ph.D. (U. Mo.). Interpersonal, nonverbal, and instructional communication.
John D. Shibley, Ph.D. (Ohio St. U.). Film appreciation, Communication and nonviolence.

**Assistant Professors**
Steven C. Hines, Ph.D. (Purdue U.). Research methodologies, Interpersonal communication, Persuasion.
Matthew M. Miller, Ph.D. (Kent St. U.). Interpersonal and family communication, Personality differences, Argumentation.
Brian R. Patterson, Ph.D. (Ok. U.). Interpersonal, nonverbal communication, Communication theory, Communication development.

**Computer Science**

**Professors**
Franz X. Heringstein, Ph.D. (U. of Pitt.). Mathematics of computation.

**Associate Professors**
V. Jagannathan, Ph.D. (Vanderbilt U.). Distributed intelligent systems, Internet and security technologies.

Murali Sitaraman, Ph.D. (O.S.U.). Software engineering, Data structures, Software reuse.

Frances L. Van Scoy, Ph.D. (U. Va.). Programming languages and compilers, Software engineering, Parallel processing.

### Assistant Professors


William F. Klostermeyer, Ph.D. (U. Fla.). Design and analysis of algorithms, Combinatorics, Graph theory.

### Lecturers

Sheila K. Arbaugh, M.S. (WVU). Software development/engineering, Quality control.

Camille Hayhurst, M.S. (WVU). Software development/engineering, Database.

Cynthia D. Tanner, M.S. (WVU). Software development, Software engineering.

### Economics

#### Professors


Ronald J. Balvers, Ph.D. (U. of Pitt.). Financial economics, Macroeconomic theory.

Lewis C. Bell, Ph.D. (U. Ky.). Emeritus.


Thomas Campbell, Ph.D. (U. of Pitt.). Emeritus.


Tom S. Witt, Ph.D. (Wash. U., St. Louis). Econometrics, Energy economics, Regional economics.

#### Associate Professors

Victor Chow, Ph.D. (U. Ala.). Adjunct. Corporate finance, Portfolio management, Microeconomics.


### Assistant Professors

Subhayu Bandyopadhyay, Ph.D. (U. Md.). International trade.

Sudeshna Bandyopadhyay, Ph.D. (U. Md.). Labor economics.


Russell S. Sobel, Ph.D. (Fl. St.). Public economics, Public choice.


### English Language and Literature

#### Professors


Dennis Allen, Ph.D. (U. Minn.). Critical theory, Prose fiction.

Sophia B. Blydes, Ph.D. (Ind. U.). 17th and 18th century literature, Poetry, Drama.


Patrick Conner, Ph.D. (U. Md.). Chair. Eberly College Centennial Professor in English. Old English literature, Anglo-Saxon studies, Paleography, Humanities computing.


William W. French, Ph.D. (U. of Pitt.). Shakespeare and Renaissance drama and literature, Contemporary theatre, Modern drama.
Elaine K. Ginsberg, Ph.D. (U. Okla.). Early American literature, Contemporary women writers, Virginia Woolf.
Robert Markley, Ph.D. (U. Penn). Jackson Family Chair. 18th century studies, Critical theory.
Thomas Miles, Ph.D. (SUNY). Rhetoric, Psychoanalytical and mythological criticism, Scientific and technical writing.
Virgil L. Peterson, Ph.D. (UCLA). Emeritus.
Judith G. Stitzel, Ph.D. (U. Minn.). Women’s studies, Feminist pedagogy.
Cheryl Torsney, Ph.D. (U. Fla.). American literature, Women’s writing, Literary theory.

Associate Professors

Rudolph P. Almasy, Ph.D. (U. Minn.). Renaissance and Reformation studies, Composition.
Laura Brady, Ph.D. (Minnesota). Composition and rhetorical theory, Women’s studies.
Marilyn Francus, Ph.D. (Columbia). Restoration and eighteenth century literature.
W. Michael Grant, Ph.D. (Brown U.). Associate Chair. Medieval literature.

Assistant Professors

Patricia DeMarco, Ph.D. (Duke U.). Middle English language, literature, and culture.
Winston Fuller, M.A. (U. Colo.). Modern and contemporary poetry, Poetics.
Susan Shaw Sailer, Ph.D. (U. Wash.) Modern British literature, Irish literary renaissance.
Dorothy Sedley, M.A. (Sonoma St. C.). Emerita.
David Stewart, Ph.D. (Oxford). British romanticism, Literary theory.
Timothy Sweet, Ph.D. (U. Minn.). American studies, Literature and photography, Native American literature.
Barry Ward, Ph.D. (Ohio St. U.). Folklore, Medieval literature, American studies.

Assistant Professors

Patricia DeMarco, Ph.D. (Duke U.). Middle English language, literature, and culture.
Winston Fuller, M.A. (U. Colo.). Modern and contemporary poetry, Poetics.
Margaret Racin, M.A. (WVU). English education, Feminist criticism, Composition.
Ethel Morgan Smith, M.A. (Hollins Coll.). Creative writing, African American literature.
Susan Warshauer, Ph.D. (U. of Texas). Humanities, Computing, Drama.
Foreign Languages

Professors

Associate Professors
Axel Claesges, Ph.D. (Vanderbilt U.). German. German cultural and intellectual history, 19th century German literature, Commercial German.
Deborah Janson, Ph.D. German, 19th & 20th century literature.

Assistant Professors
Maria Amores, Ph.D., (Penn St. U.). Spanish, Foreign language acquisition.

Lecturers

Geology and Geography

Professors
Frank J. Calzonetti, Ph.D. (Oklahoma). Director of EPSCOR program. Energy, Industrial development.
Trevor M. Harris, Ph.D. (Hull U.). Chair. Geographic information systems.
M. Duane Nellis, Ph.D. (Oregon State U.). Dean, Eberly College of Arts and Sciences.
John J. Renton, Ph.D. (WVU). Geochemistry.
Richard A. Smosna, Ph.D. (U. Ill.). Carbonate sedimentation.
Thomas Wilson, Ph.D. (WVU). Geophysics.
Associate Professors
Robert Q. Hanham, Ph.D. (Ohio St. U.). Regional development.
J. Steven Kite, Ph.D. (U. Wisc.). Geomorphology.
Helen M. Lang, Ph.D. (U. Ore.). Mineralogy, petrology.
Daniel Weiner, Ph.D. (Clark U.). Director International Programs. Regional development.

Assistant Professors
Calvin O. Masilela, Ph.D. (Virginia Tech.). Planning, Urban and rural development.

Adjunct Faculty
Mary C. Behling, M.S. (U. Oh.). Computer statistics.
David J. Campagna, Ph.D. (Purdue). Remote sensing.
Michael Dougherty, Ph.D. (Virginia Tech.). Local economic development.
William H. Gillespie, M.S. (WVU). Paleobotany. Director, Forestry program for WV.
William C. Grady, M.S. (WVU). Coal petrology.
Mary Haas, Ph.D. (Ind. U.). Geographic education.
Michael E. Hohn, Ph.D. (Indiana U.). Computer geology. WVGS.
Lizbeth Pyle, Ph.D. (U. Minn.). Rural/urban planning.
Larry D. Woodfork, M.S. (Indiana U.). Economic and environmental geology.

History
Professors
Robert E. Blobaum, Ph.D. (U. Nebr.). Russia, East Europe, Poland, 20th century political and social history.
Emory L. Kemp, Ph.D. (U. Ill.). Emeritus.
Ronald L. Lewis, Ph.D. (U. Akron). Eberly Family Distinguished Professor.
Modern United States, West Virginia/Appalachia, Labor and social history.
John C. Super, Ph.D. (UCLA). Latin America, Spain, Early Latin America, Biography, Food and agriculture.

Associate Professors
Mary Lou Lustig, Ph.D. (Syracuse U.). Early United States colonial, Revolution, Constitution.
W. Reynolds McLeod, Ph.D. (U. Md.). Great Britain, Celtic Europe (Scotland), popular history, newspaper history.
A. Michal McMahon, Ph.D. (U. Tx.). United States, History of technology.
Steven M. Zdanty, Ph.D. (U. Penn). Modern Europe, France, Social history.

**Assistant Professors**
Katherine B. Aaslestad, Ph.D. (U. Ill.). Modern Europe, Germany, cultural history.

**Adjunct Assistant Professor**

**Humanities**

**Associate Professor**

**Assistant Professors**
Janet Kemp, Ph.D. (WVU). Visiting.
Carol Zwicke, Ph.D. (WVU). Visiting.

**Lecturers**

**Adjunct Faculty**
W. Michael Grant, Ph.D. (Brown U.). English.
Elizabeth Madison, Ph.D. (Ind. U.). English.
Charles M. Spring, Th.D. (Iliff School of Technology).

**International Studies**

Joe D. Hagan, Ph.D. (U. Ky.). Associate Director and Advisor, Professor of Political Science.
Paul D Hoyt, Ph.D. (Ohio St. U.). Advisor, Assistant Professor of Political Science.
Kenneth C. Maris, Ph.D. (U. Mich.). Professor of Geography.
Calvin O. Masilela, Ph.D. (Va. Polytechnic Inst. and St. U.). Assistant Professor of Geography.

**Mathematics**

**Professors**
Caulton L. Irwin, Ph.D. (Emory U.). Associate Director, Energy Research Center.
Variational methods, Optimization, Applied mathematics.
Alonzo Johnson, Ed.D. (Oklahoma St.). Emeritus.
Dening Li, Ph.D. (Fudan U.). Partial differential equations.
Michael E. Mays, Ph.D. (Penn St. U.). Number theory.
Cun-Quan Zhang, Ph.D. (Simon Fraser U.). Combinatorics, Graph theory.
Associate Professors
Weifu Fang, Ph.D. (Claremont). Applied mathematics.
John Goldwasser, Ph.D. (U. Wisc-Madison). Combinatorics, Graph theory.
Hong-Jian Lai, Ph.D. (Wayne St. U.). Combinatorics, Graph theory.
Betty L. Miller, M.S. (WVU). Emerita.
James E. Miller, Ph.D. (U. Ky.). Complex analysis.
Jerzy Wojciechowski, Ph.D. (Cambridge U.). Combinatorics, Graph theory.

Philosophy
Professors
Ralph W. Clark, Ph.D. (U. Colo.). Ethics, Business ethics, Metaphysics.
Mark Wicclair, Ph.D. (Columbia U.). Philosophy of law, Medical ethics, Ethics.
Associate Professors
Daniel Shapiro, Ph.D. (U. Minn.). Social and political philosophy, Ethics, Philosophy of law.

Adjunct Associate Professor
Jacqueline Glover, Ph.D. (Georgetown U.). Biomedical ethics. Department of Pediatrics, WVU School of Medicine.

Lecturer

Physics
Professors
Bernard R. Cooper, Ph.D. (U. Calif.). Claude Worthington Benedum Professor of Physics.
Larry E. Halliburton, Ph.D. (U. Mo.). Chairperson. Solid state, Magnetic resonance, Experiment.
Oleg Jefimenko, Ph.D. (U. Ore.). Emeritus.
Mohindar S. Seehra, Ph.D. (U. Rochester). Eberly Family Distinguished Professor.

Associate Professors
Wathiq Abdul-Razzaq, Ph.D. (U. Ill.—Circle Campus). Solid state physics, Experiment.

Assistant Professors
David Lederman, Ph.D. (U. Calif.). Magnetic and optical properties, Superlattices.
Earl E. Scime, Ph.D. (U. Wisc.). Plasma physics, Space science, Experiment.
Political Science

Professors
Orrin B. Conaway, Jr., Ph.D. (Syracuse U.). Emeritus.
Robert J. Dilger, Ph.D. (Brandeis U.). Inter-governmental relations, State politics.
Hong N. Kim, Ph.D. (Georgetown U.). Comparative politics (Asia).
Sophia L. Peterson, Ph.D. (UCLA). Emerita.
Gerald Pops, Ph.D. (Syracuse U.). Adjunct. Public administration.
George W. Rice, Ph.D. (Ohio St. U.). Emeritus.
David G. Williams, Ph.D. (SUNY—Albany). Adjunct. Public administration.
Rodger D. Yeager, Ph.D. (Syracuse U.). Comparative politics (Africa, political development).

Associate Professors
John C. Kilwein, Ph.D. (Ohio St. U.). Public law, Public policy (general, law, and policy).
Jeffrey S. Worsham, Ph.D. (U. Wis.). Public administration, Public policy (social welfare).

Assistant Professors
Paul D. Hoyt, Ph.D. (Ohio St. U.). International relations, Public policy (foreign policy), Middle East politics.
Jamie Jacobs, Ph.D. (U. of Pitt.). International relations, Public policy (environment), Latin American politics.

Psychology

Professors
Philip N. Chase, Ph.D. (U. Mass.). Verbal behavior, Organizational behavioral management.
Philip E. Comer, Ph.D. (WVU). Emeritus.
Barry A. Edelstein, Ph.D. (Memphis St. U.). Social competence, Clinical group psychology.
Georg H. Eifert, Ph.D. (U. of Frankfurt, Germany). Eberly Family Distinguished Professor. Integrative models and treatments of anxiety disorders, Conceptual advances in behavior therapy, New applications of classical conditioning principles.
Kennon A. Lattal, Ph.D. (U. Ala.). Centennial Professor. Animal learning and behavior, Issues in the history and philosophy of psychology, Human-pet relations.
Robert W. Miller, Ph.D. (Ohio St. U.). Adjunct Chairperson. Industrial organizational psychology/evaluation research.
Richard J. Seime, Ph.D. (U. Minn.). Adjunct. Adult behavior therapy and assessment, Eating disorders, Mood disorders.
Beth Sulzer-Azaroff, Ph.D. (U. Minn.). Adjunct.

Associate Professors
Andrew S. Bradlyn, Ph.D. (U. Miss.). Adjunct. Pediatric behavioral medicine, Child behavior therapy and assessment.
Carole V. Harris, Ph.D. (U. Fla.). Adjunct. Child and adolescent behavior therapy, Adolescent substance abuse, Pediatric behavioral medicine.
Kevin T. Larkin, Ph.D. (U. of Pitt.). Cardiovascular reactivity and its implication in the development of cardiovascular disorders and anxiety-related problems.
B. Kent Parker, Ph.D. (U. Utah). Stimulus control, memory, and complex sequential learning in animals, Research design.

Assistant Professors
Jeannie Sperry Clark, Ph.D. (Ohio U.). Adjunct. Factors associated with successful placement and improvement of psychiatric inpatients, Ethical decision in psychotherapy.
Bruce Corsino, Ph.D. (Fl. Inst. of Tech.). Adjunct. Ethics and psychology, Informed consent, End-of-life treatment issues.
Alfred L. Kasprzewicz, Ph.D. (U. of Pitt.). Adjunct. Behavioral medicine, Psychophysiology.
Tracy L. Morris, Ph.D. (U. Miss.). Peer relationships, Social anxiety, and Internalizing disorders in children; Parent-child interactions.
Julie Hicks Patrick, Ph.D. (U. of Akron). Decision-making. Caregiving issues related to chronic mental illness and retardation, Non-traditional family constellations.
Julie Smith, Ph.D. (WVU). Adjunct. Organizational performance systems, Innovation and creativity, Training systems.
Thomas J. Spencer, Ph.D. (WVU). Adjunct. Organizational behavior management.
Christina Sara Wilson, Ph.D. (Wayne St. U.). Adjunct. Clinical neuropsychology, Dementia, Head injury.

**Religious Studies**
**Associate Professor**

**Slavic Studies**
Marilyn Bendena, Ph.D. (Wayne St. U.). Associate professor of foreign languages.
Robert E. Blobaum, Jr., Ph.D. (U. Nebr.). Professor of history.
Johan Seynnaeve, Ph.D. (Cornell U.). Associate professor of foreign languages.
Mark B. Tauger, Ph.D. (UCLA). Assistant professor of history.

**Sociology and Anthropology**
**Professors**

**Associate Professors**

**Assistant Professors**

**Visiting Assistant Professor**

**Statistics**
Erdogan Gunel, Ph.D. (SUNY-Buffalo). Bayesian inference, Biostatistics, Categorical data analysis.
William V. Thayne, Ph.D. (U. Ill.). Experimental design, Statistical genetics, Regression analysis.

**Visiting Research Professor**

**Associate Professors**
Magdalena Niewiadomska-Bugaj, Ph.D. (Adam Mickiewicz U., Poznan, Pol.). Classification, Categorical data analysis, Statistical computing.

**Assistant Professor**
Michael Schuckers, Ph.D. (Iowa St. U.). Bayesian methodology, Hierarchical models, Survey sampling.
Adjunct Associate Professors
Michael D. Attfield, Ph.D. (WVU). Design and analysis of experiments.

Research Associate
Anthony A. Billings, M.S. (WVU). Statistical computing, Statistical modeling, Robust estimation, Nonlinear dynamic systems.

Center for Women’s Studies
Associate Professor

Assistant Professor

Center for Women’s Studies Faculty Associates: Over 100 faculty members at all ranks from nearly all of the university’s departments, schools, and colleges are affiliated with the Center for Women’s Studies through their teaching, research and service. Contact the Center for a current list.

College of Business and Economics
Accounting
Professors
Ann B. Pushkin, Ph.D. (VPI&SU). CPA. Auditing, EDP auditing, Accounting information systems, Microcomputer applications.
Gail A. Shaw, Ph.D. (U. Mo.). CPA. Financial accounting theory, Business combinations, not-for-profit.

Associate Professors
Bonnie W. Morris, Ph.D. (U. of Pitt.). CPA. Accounting information systems, Expert systems and artificial intelligence, Internal auditing.

Assistant Professor

Lecturers

Business Management
Professors
Jack A. Fuller, Ph.D. (U. Ark.). Heuristic decision making, Production planning and control, Systems analysis and design.
Ali H. Mansour, Ph.D. (U. Ga.). Management information systems, Management science, Production operations management.
Sydney V. Stern, Ph.D. (Ga. Tech.).
Associate Professor

Assistant Professors
Gerald Blakely, Ph.D. (U. N.C.). Human resources management, Organizational behavior.
James Denton, Ph.D. (Kent St. U.). Decision science, Operations management.
Monika Renard, Ph.D. (U. Md.). Human resource management.
Linda Sypolt, J.D. (WVU). Copyright/patents, Labor law.
Michael Wolfe, Ph.D. (U. Tex.). Information systems.

Instructor

Lecturer

Economics
Professors
Ronald J. Balvers, Ph.D. (U. of Pitt.). Financial economics, Macroeconomic theory.
Lewis C. Bell, Ph.D. (U. Ky.). Emeritus.
Thomas Campbell, Ph.D. (U. of Pitt.). Emeritus.
Ming-jeng Hwang, Ph.D. (Texas A&M U.). General theory, Urban and regional economics, Mathematical economics.
Kern 0. Kymn, Ph.D. (U. Chicago). General theory, Mathematical economics, Econometrics.
Patrick C. Mann, Ph.D. (Ind. U.). Utility economics, Industrial organization.

Associate Professors

Adjunct Associate Professor
Victor Chow, Ph.D. (U. Ala.). Corporate finance, Portfolio management, Microeconomics.

Assistant Professors
Sudeshna Bandyopadhyay, Ph.D. (U. Md.). Labor economics.
Eun-Soo Park, Ph.D. (Northwestern U.). Microeconomic theory, Game theory.

Finance
Professors

Associate Professors
Ashok Abbott, Ph.D. (VPI & SU). Financial institutions, Corporate finance, Mergers and acquisitions.
Victor Chow, Ph.D. (U. Ala.). Corporate finance, Portfolio management.
Terry L. Rose, Ph.D. (U. Ill.). Insurance, Risk management.
Assistant Professor

Management and Industrial Relations

Professors
Neil Bucklew, Ph.D. (Wis.) Economics, Industrial relations.
Randyl D. Elkin, Ph.D. (Iowa St. U.) Labor relations, International human resources, Conflict management.
Jack A. Fuller, Ph.D. (U. Ark.) Heuristic decision making, Production planning and control, Systems analysis and design.
Richard W. Humphreys, M.S. (U. Wis) Emeritus.
Ali H. Mansour, Ph.D. (U. Ga.). Management information systems, Management science, Production operations management.

Adjunct Professor
Sydney V. Stern, Ph.D. (Ga. Tech.). Dean.

Associate Professors
Gerald Blakely, Ph.D. (U.N.C.). Human resources management, Organizational behavior.
Thomas L. Blaskovics, Ed.D., (Wis.). Emeritus.
James Denton, Ph.D. (Kent St. U.). Decision science, Operations management.
Wilbur J. Smith, M.S. (U. Wis.). Government human resources programs, Creative thinking and writing.
Owen A. Tapper, M.S. (U. Wis.). Emeritus.

Assistant Professors
James Fairbank, ABD. (Penn. St. U.) Strategic management, Management of Technology and innovation.
Virginia F. Kleist, ABD. (U. Pitt). Management information systems.
Annette Ranft, Ph.D. (U.N.C.) Strategic management.
Linda Sypolt, J.D. (WVU). Copyright/patents, Labor law.

Adjunct Assistant Professor

Instructor

Marketing

Professors
Cyril M. Logar, D.B.A. (Kent St. U.). Health care marketing, Strategic marketing and planning, Marketing research.

Associate Professors
Robert Corey, Ph.D. (Penn St. U.). Channels of distribution, New product development, Direct marketing, Retail management, Business ethics.

Assistant Professor

Adjunct Assistant Professor
College of Creative Arts

Art

Professors
Bernard Schultz, Ph.D. (U. of Pitt.). Associate Dean, academic affairs, Art history, Italian Renaissance, Modern art, Art theory.

Associate Professors
Victoria Fergus, Ph.D. (Purdue U.). Art education, Undergraduate advisor.
Christopher Hocking, M.F.A. (LSU). Drawing, Painting, Printmaking.

Assistant Professors
Kristina Olson, M.A. (SUNY, Stoney Brook). Art criticism and Contemporary art, Curator.
Janet Snyder, Ph.D. (Columbia U.). Art history, Medieval art.

Music

Professors
Peter Amstutz, D.M.A. (Peabody Cons.). Coordinator of keyboard instruments, Piano.
John Beall, Ph.D. (Eastman School of Mus.). Composition, Theory.
Lawrence Christianson, B.A. (San Diego St. U.). Director of orchestral activities, Orchestra, Conducting.
Jon Crain. Emeritus.
Margaret S. Lorince, M.M. (Eastman School of Mus.). Emerita.
James E. Miltenberger, D.M.A. (Eastman School of Mus.). Piano, Piano Repertoire, Jazz.
George E. Schafer, Ph.D. (Eastman School of Mus.) Emeritus.
William Skidmore, M.M. (U. Ill.). Coordinator of Strings, Cello, Chamber music.
Robert H. Thieme, Jr., M.M. (WVU) Director of WVU Opera Theatre, Coordinator of Voice, Opera, Vocal Repertoire, Accompanying-coaching.
Don G. Wilcox, M.A. (Cal. St. at Long Beach). Director of Bands, Coordinator of large ensembles, Band, Conducting.
Frances Yeend. Emerita.
Associate Professors
David Bess, Ph.D. (WVU). Assistant Chair of Undergraduate Studies. Instrumental music education.
Rose M. Crain. Emerita.
John E. Crotty, Ph.D. (Eastman School of Mus.). Coordinator of Theory and Composition.

Assistant Professors
Peter Lightfoot, Prof. Diploma (Juilliard School). Voice.

Visiting Assistant Professors

Part-time
Ellie Mannette. Steel drum Manufacturing Performance technology.

Theatre and Dance
Professors
M. Kathryne Wiedebusch, M.A. (WVU). Dance

Associate Professors

Assistant Professors
School of Dentistry—See the WVU Health Sciences Center Catalog

College of Engineering and Mineral Resources

Chemical Engineering

Professors
Eugene V. Cilento, Ph.D. (U. Cinn.). Physiological transport phenomena, Biomedical engineering.
Dady B. Dadyburjor, Ph.D. (U. Del.). Chair. Catalysis, Reaction engineering, Coal liquefaction.
Rakesh K. Gupta, Ph.D. (U. Del.). Polymer processing, Rheology, Non-Newtonian fluid mechanics.
Hisashi O. Kono, Dr. ENGR (Kyushu U.). Fluidization, Powder technology, Reaction engineering.
Alfred H. Stiller, Ph.D. (U. Cincinnati). Chemistry (physical/inorganic chemistry), Solution chemistry, Coal liquefaction.

Associate Professors

Assistant Professor
Aubrey L. Miller, Ph.D. (Ill. Inst. Tech.). Hydrodynamics, Multiphase flow, Fluidization, Particle phonemena.

Civil and Environmental Engineering

Professors
Echol E. Cook, Ph.D., P.E. (Oklahoma St. U.). George B. Berry Chair of Environmental Engineering.
Biological waste treatment, Industrial waste processing, Environmental geotechnology.

Associate Professors
Mohammed A. Gabr, Ph.D., P.E. (N.C. State U.). Geotechnical aspects of waste containment and remediation, Soil-structure interaction, Groundwater and seepage, and In Situ testing.
Udaya B. Halabe, Ph.D., P.E. (MIT). Non-destructive evaluation and In-Situ condition.
Assessment of structures and materials, Wave propagation, Structural analysis and dynamics.
Assistant Professors
Karl E. Barth, Ph.D. (Purdue). Experimental and analytical analysis of steel structures.

Computer Engineering
Professors
Powsiri Klinkhachorn, Ph.D. (WVU). Microprocessor applications, Computer architecture, Binary and non-binary logic.
Associate Professors
Afzel Noore, Ph.D. (WVU). Associate Dean for Academic Affairs. Fault-tolerant computing, Design for testability, VLSI design and testing, Software engineering, Consumer electronics.
Assistant Professor

Computer Science
Professors
Franz X. Hiergeist, Ph.D. (U. of Pitt.). Mathematics of computation.
Jeffrey Voas, Ph.D. (College of William and Mary). Adjunct. Software engineering.
Associate Professors
V. Jagannathan, Ph.D. (Vanderbilt U.). Distributed intelligent systems, Internet and security technologies.
William F. Klostermeyer, Ph.D. (U. Fla.). Design and analysis of algorithms, Combinatorics, Graph theory.
Murali Sitaraman, Ph.D. (Ohio St. U.). Software engineering, Data structures, Software reuse.
Frances L. Van Scyoc, Ph.D. (U. Va.). Programming languages and compilers, Software engineering, Parallel processing.

**Assistant Professors**

Steven Atkinson, Ph.D. (Univ. of Queensland). Research. Language semantics, Formal methods.
Nancy Eickelmann, Ph.D. (Univ. of California). Research. Quality initiatives, Cost-reduction technologies, Process improvement methodologies.
Timothy Menzies, Ph.D. (Univ. of New South Wales). Research. Software engineering.

**Lecturers**

Sheila K. Arbaugh, M.S. (WVU). Software development/engineering, Quality control.
Frank P. Brelsford, M.S. (Johns Hopkins Univ.). Simulation and modeling.
Diane Cox, MBA. (Wake Forest Univ.). Business.
Jeffrey Edgell, M.S. (Stevens Inst. of Technology). Software engineering.
Mona Fahmy-Ammar, Ph.D. (Univ. of Notre Dame). Communications.
Brad D. Forbes, MED. (California Univ. of Pa.). Network land management.
Christopher P. Fuhrman, Ph.D. (Swiss Federal Inst. of Tech.). Computer engineering.
Camille Hayhurst, M.S. (WVU). Software development/engineering, Database.
Frank E. McFadden, Ph.D. (Univ. of Maryland). Computer science.
Sidney C. Morrison, M.S. (Penn St. Univ.). Application programming, Systems Analysis.
Kevin R. Niewoehner, MBA. (George Mason Univ.). Adjunct. Systems analysis.
Cynthia D. Tanner, M.S. (WVU). Software development software engineering.
Marc Tanner, M.A. (Massachusetts Inst. of Tech.). Computer engineering, Computer Science.

**Electrical Engineering**

**Professors**

Craig S. Sims, Ph.D. (SMU). Emeritus.

**Associate Professors**


**Assistant Professors**

Biswajit Das, Ph.D. (Purdue). Electronic and photonic devices.

**Lecturer**

Christopher P. Fuhrman, Ph.D. (Swiss Federal Inst. of Tech.). Computer engineering.
Kevin R. Niewoehner, MBA. (George Mason Univ.). Adjunct. Systems analysis.

**Industrial and Management Systems Engineering**

**Professors**


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Associate Professors
B. Gopalakrishnan, Ph.D. (VPI). Manufacturing systems, Engineering economy, Expert systems.
Garry Winn, Ph.D. (Ohio St. U.). Safety studies, Transportation safety.

Assistant Professors
Linda Frederick, Ph.D. (U. of Mich.). Industrial health/Ergonomics.
Michael J. Klishis, Ph.D. (WVU). Miner training, Curriculum development.
Dianne L. McMullin, Ph.D. (U. Neb.). Human factors, System safety.
David Whaley, Ph.D. (St. U. of NY). Industrial Hygiene/Environmental management.

Mechanical and Aerospace Engineering
Professors
Edward F. Byars, Ph.D., P.E. (U. Ill.). Emeritus.
Ismail Celik, Ph.D. (U. Iowa). Fluids engineering.
Steve Lewellen, Ph.D. (UCLA). Research, Fluid dynamics.
In-Meei Neou, Ph.D. (Stanford U.). Emeritus.
Harold Schall, B.S. (C. W. Post Coll.). Adjunct. Quality function deployment.
John E. Sneckenberger, Ph.D., P.E. (WVU). Mechanical design and automation.
James E. Smith, Ph.D. (WVU). Mechanical design.
Charles Stanley, Ph.D. (WVU). Pulmonary bioengineering, Mechanical instrumentation.
Charles E. Wales, Ph.D. (Purdue). Emeritus.
Richard E. Walters, Ph.D. (WVU). Emeritus.

Associate Professors
Bruce Kang, Ph.D. (U. Wash.). Experimental mechanics.
Gary Morris, Ph.D. (WVU). Associate Chairperson and Graduate Program Director. Experimental fluid mechanics, Aerodynamics, Combustion.
Timothy Norman, Ph.D. (Purdue). Advanced composite materials, Fracture mechanics, Experimental mechanics, Biomechanics.

Assistant Professors
Albert Ayala, Ph.D. (U. of Calif. at Davis). Thermofluid mechanics, Aerodynamics.
Andrei Smirnov, Ph.D. (Chalmers). Research.

Mining Engineering
Professors
Syd S. Peng, Ph.D. (Stanford U.). Chair. Charles T. Holland Distinguished Professor of Mining Engineering. Longwall mining, Ground control.

Associate Professors
Donald M. Bondurant, M.S.E.M. (WVU). Emeritus.

Visiting Assistant Professor
Lloyd English, Ph.D. (WVU). Mine ventilation, Mine management.

Petroleum and Natural Gas Engineering
Professors

Associate Professors

Extension and Outreach
Extension and Outreach is a unit within the College of Engineering and Mineral Resources (CEMR) that is composed of two programs: Mining Extension and Industrial Extension.

Professors

Associate Professors

Assistant Professors
Luther B. Ferguson. Emeritus.

Extension Agents
Thomas W. Hall, B.S. (Fairmont St. C.). Mine foreman training, Mandatory miner training, Mining methods.
Tom Mahoney, B.A., M.A. (Davidson, Johns Hopkins U.). Associate Director. Application of science, technology, and policy to enhance the effectiveness of economically productive activities worldwide.
Joseph E. Spiker, M.S. (WVU). Coal mining operations, Safety and health management, Education administration.
Ireland B. Sutton, B.S. (WV Tech). Surface mine blasting, Underground and surface power systems, Mandatory miner training
Merle Thomas, Jr., B.A., M.A.-Mathematics, (University of Texas). Computerized production control and scheduling systems. Designing and installing process controllers, programmable logic controllers, and device drivers.

College of Human Resources and Education

Educational Psychology
Professors
Daniel E. Hursh, Ph.D. (U. Kans.). Developmental and child psychology, Instructional and environmental design, Language development.

Associate Professors

Assistant Professors

Social and Cultural Foundations

Professors

Associate Professor
Esther E. Gottlieb, Ph.D. (U. of Pitt.). Adjunct. Comparative and international education, Qualitative research methodology, Teacher education.
Assistant Professors
Samuel F. Stack, Jr., Ph.D. (US Calif.). History, Philosophy and sociology of education, Educational theory, Comparative and international education.

Special Education
Professors
Gabriel A. Nardi, Ph.D. (U. Wisc.). Behavioral disabilities, Mental retardation.

Associate Professor
Gretchen Butera, Ph.D. (UC at Santa Barbara). Early intervention, Clinical supervision.

Visiting Instructors
Katrina Dennison, M.A. (WVU). Severe/profound handicaps, Early intervention, Clinical supervision.

Lecturers
Judy Werner, M.A. (Newark). Gifted, Technology in special education, Clinical supervision.

Speech Pathology and Audiology
Professors
Mary Ellen Tekieli Koay, Ph.D. (U. Okla.). Speech Pathology. Cleft palate, Neurophysiology, Neuropathologies, Clinical supervision.

Associate Professors

Assistant Professors

Teacher Education
Professors
Elizabeth F. Howard, Ph.D. (U. of Pitt.). Emerita.
Layle D. Lawrence, Ph.D. (LSU). Adjunct. Secondary agricultural education, Youth organization, Extension education.


**Associate Professors**

W. Scott Bower, Ph.D. (Ohio St. U.). Teaching strategies, Curriculum development, Teacher effectiveness.


Stacy A. Gartin, Ph.D. (Ohio St. U.). Adjunct, Adult agricultural education, Communications, Leadership development, Teaching methods.


**Assistant Professors**

Judy Abbott, Ph. D. (U. Tx.). Literacy education, Children’s writing, Motivation, Children’s literature.


**Technology Education**

**Professors**


**Associate Professor**


**Perley Isaac Reed School of Journalism**

**Professors**


William T. Slater, Ph.D. (Stanford U.). Dean. Public opinion, politics, and media.

**Associate Professors**


Richard A. Schreiber, Ph.D. (U. Mo.). Advertising, communication theory, and research.

Pamela D. Yagle, M.S.J. (WVU). Reporting, editing, language skills, and high school publications advising.

**Assistant Professors**


Ralph Hanson, Ph.D. (Ariz. St. U.). Reporting, editing, research.


Kurt E. Schimmel, D.B.A. (Cleveland St. U.). Professional services’ marketing/promotions, quantitative methods, marketing/promotional strategy research, and persuasion.
Lecturers
Andrew G. Fusco, J.D. (WVU). Journalism law, freedom of information, and first amendment issues.
Pam S. Hanson, B.A. (Iowa St.). News and feature writing, contemporary women’s fiction.
Emeriti Professors
Paul A. Atkins, M.A. (U. Va.).
John H. Boyer, Ph.D. (U. Mo.).
Charles F. Cremer, Ph.D. (U. Iowa).
Robert M. Ours, Ph.D. (C. William & Mary).
Guy H. Stewart, Ph.D. (U. Ill.). Dean.
William R. Summers, Jr., M.A. (U. Mo.).
Adjunct Assistant Professors

School of Medicine
Community Health Promotion

Professors

Assistant Professors

Visiting Assistant Professor

Department of Human Performance and Applied Exercise Science
Exercise Physiology

Professors
Irina Ullrich, M.D., (U. Minn.). Diabetes and exercise, Obesity, Osteoporosis.

Associate Professors
W. Guyton Hornsby, Ph.D. (LSU). Diabetes and exercise, Strength and conditioning.

Assistant Professors
Danny Bonner, M.S. (WVU). Adult fitness/athletic training.

Clinical Instructor
Paula Briggs, M.S. (WVU). Aquatic therapy.

Occupational Therapy

Associate Professor
James J. McPherson, OTR/L, Ph.D. (U of Wisconsin).

Assistant Professors
Melanie Collier, OTR/L, B.S. (U of Pennsylvania).
Anne Cronin, Ph.D., OTR/L (Univ. of Florida).
Randy P. McCombie, OTR/L, Ph.D. (Loyola University of Chicago). Interim Chair.

Physical Therapy

Professors
John J. Petronis, M.S. (WVU). Orthopedics physical therapy.

Associate Professor
MaryBeth Mandich, Ph.D. (WVU). Interim Chair. Pediatric and neuroscience physical therapy.
**Medical Technology**
Anna August, B.S. (I.U.P.). Adjunct Assistant Professor, Immunology.
Cathy Browning, B.S. (WVU). Adjunct Assistant Professor, Management.
Joyce Compton, M.S. (WVU). Adjunct Assistant Professor.
Patsy Fairchild, B.S. (WVIT). Adjunct Instructor; Summersville Memorial Hospital, Summersville, WV, Clinical teaching.
Barbara J. Gutman, M.Ed. (U. Pitt), Associate Professor, Immunohematology and blood Banking.
Sharon Hall, B.S. (WVU). Adjunct Instructor, Hematology.
Julia Hare, B.S. (WVU). Adjunct Instructor, Hematology.
Beverly Kirby, B.S. (WVU). Rural Health Coordinator, Adjunct Assistant Professor, Hematology.
Mary Ellen Koen, M.S. (WVU). Assistant Professor, Chemistry and instrumentation.
Karen S. Long, M.S. (WVU). Associate Professor, Microbiology and immunology.
Marie Miller, B.S. (WVU). Adjunct Instructor, Microbiology.
Dane W. Moore, Jr., M.S. (WVU). Professor Emeritus, Microbiology.
Judy Mull, M.S. (WVU). Adjunct Assistant Professor, Research.
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