This West Virginia University Institute of Technology (WVU Tech) 2016-2017 College Catalog is intended as a general reference on degree programs and their requirements, course offerings, admission, graduation requirements, and other academic rules and regulations of the institution. WVU Tech reserves the right to change, delete, supplement, or otherwise amend the contents of this catalog as necessary without prior notice. The operations of this institution are subject to continuing review and change by the West Virginia Higher Education Policy commission, the WVU Board of Governors, the WVU Tech Board of Visitors, institutional administrators, and members of the faculty.
West Virginia University Institute of Technology
Fall 2016 Academic Calendar

Monday, August 15, 2016..................................................New Student Orientation and Convocation
Tuesday, August 16, 2016 ..........................................................General Registration
Wednesday, August 17, 2016 .................................................. On-Campus First Day of Classes
Wednesday, August 17, 2016 ..................................Late Registration Fee in Effect for All Students Taking
Courses Beginning During the 1st Half of the Semester

Tuesday, August 23, 2016.................................................. Last day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit Attributes

Monday, September 05, 2016 .................................................Labor Day Recess: University Closed

Wednesday, October 05, 2016 .................................................. Mid-Semester
Wednesday, October 12, 2016 (by Noon) ............................... Mid-Semester Reports Due
Friday, October 14, 2016 .................................................. Textbook Selection Deadline (for Spring 2017)

Wednesday, October 26, 2016 .................................................. Last Day to Drop a Class

Tuesday, November 08, 2016 .................................................. Election Day: University Closed
Saturday, November 19, 2016 thru
Sunday, November 27, 2016 .................................................. Fall Recess

Monday, December 05, 2016 .................................................. Last Day to Withdrawal from the University
Tuesday, December 06, 2016 .................................................. Last Day of Classes

Wednesday, December 07, 2016 ................................................. Final Exam Prep Day

Thursday, December 08, 2016 thru

Wednesday, December 14, 2016 ............................................. Final Exam Period

Thursday, December 15, 2016 .................................................. Winter Recess Begins

Friday, December 16, 2016 (by Noon) ........................................ Final Grade Reports Due

Saturday, December 17, 2016 .................................................. Degree Conferral Date
West Virginia University Institute of Technology
Spring 2017 Academic Calendar

Thursday, January 05, 2017................................................................. New Student Orientation
Friday, January 06, 2017........................................................................ General Registration
Monday, January 09, 2017............................................................... On Campus First day of Classes
Monday, January 09, 2017........................................... Late Registration Fee in Effect for All Students Taking Courses Beginning During the 1st Half of the Semester
Friday, January 13, 2017..................................................... Last day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
Monday, January 16, 2017....................... Martin Luther King, Jr. Day Recess: University Closed
Friday, February 24, 2017........................................................................ Mid-Semester
Friday, March 03, 2017................................................. Mid-Semester Reports Due (by Noon)
Saturday, March 04, 2017 thru Sunday, March 12, 2017................................................................. Spring Recess
Tuesday, March 14, 2017...................... Textbook Selection Deadline (For Summer & Fall 2017)
Friday, March 24, 2017........................................................................... Last Day to Drop a Class
Friday, April 14, 2017............................. Friday Before Easter Recess: University Closed
Thursday, April 27, 2017...................................................... Last Day to Withdraw from the University
Friday, April 28, 2017........................................................................... Last day of Classes
Monday, May 01 thru Friday, May 05, 2017................................. Final Examination Week
Saturday, May 06, 2017....................................................................... Commencement
Monday, May 08, 2017 (by Noon).................................................... Final Grade Reports Due
Sunday, May 14, 2017................................................................. Degree Conferral Date
West Virginia University Institute of Technology
Summer 2017 Academic Calendar

Monday, May 15, 2017 .......................................................... General Registration
Monday, May 15, 2017 .......................................................... On-Campus First Day of Classes
Monday, May 29, 2017 ....................................................... Memorial Day Recess: University Closed
Friday, June 23, 2017 ........................................................... Final Exam for First Six-Week Session
Tuesday, July 04, 2017 ...................................................... Independence Day Recess: University Closed
Friday, August 04, 2017 ........ Final Exam for Second Six-Week Session and 12-Week Session
Monday, August 07, 2017 (by Noon) ................................. Final Grade Reports Due
Friday, August 11, 2017 ..................................................... Degree Conferral Date
SPECIAL DAYS OF CONCERN
2016-2017

Monday, October 3...............................Rosh Hashanah (Day of Special Concern)
Wednesday, October 12 .........................Yom Kippur (Day of Special Concern)
Wednesday, November 11.........................Veterans Day (Day of Special Concern)
Thursday, November 12........................Birth of Baha'u'llah (Day of Special Concern)
Saturday, January 28..........................Chinese New Year (Day of Special Concern)
Tuesday, April 11 ..................................Passover (Day of Special Concern)
Thursday, April 21.................................Feast of Rivdan (Day of Special Concern)
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Governance

Effective July 1, 2001, the West Virginia University (WVU) Board of Governors is vested by law with the authority for the control and management of the University. The board includes thirteen lay members, two faculty members, a staff member, and one student member. The University president, appointed by the Board of Governors, is the chief executive officer of the University. A Campus President provides leadership for WVU Tech as a divisional campus of the University. The Chair of the WVU Tech Board of Visitors, an advisory body, is a member of the WVU Board of Governors.

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

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

On the WVU Tech campus, the faculty are represented by the Faculty Assembly. This body is made up of all full-time faculty, including visiting appointments, as well as those with FEAP appointments. The Faculty Assembly is presided over by an elected chair.

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

Students are represented by the Student Government Association, which is made of executive officers and representatives elected by the student body. Members of the SGA serve on various campus committees.
## Frequently Contacted Offices

### Montgomery Campus

<table>
<thead>
<tr>
<th>Department</th>
<th>Phone</th>
<th>FAX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academics: College of Business, Humanities, &amp; Social Sciences</strong></td>
<td>304.442.3105</td>
<td>304.442.3488</td>
</tr>
<tr>
<td>227 COBE</td>
<td></td>
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</tr>
<tr>
<td>bhss.wvutech.edu</td>
<td></td>
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<tr>
<td><strong>Academics: Department of Nursing</strong></td>
<td>304.442.3346</td>
<td>304.442.3479</td>
</tr>
<tr>
<td>2400 Orndorff</td>
<td></td>
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<tr>
<td>nursing.wvutech.edu</td>
<td></td>
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</tr>
<tr>
<td><strong>Academics: Leonard C. Nelson College of Engineering &amp; Sciences</strong></td>
<td>304.442.3161</td>
<td>304.442.1006</td>
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<tr>
<td>Engineering Building</td>
<td></td>
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<tr>
<td>engineering.wvutech.edu</td>
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<tr>
<td><strong>Administration – Campus President</strong></td>
<td>304.442.1025</td>
<td>304.442.3838</td>
</tr>
<tr>
<td>217 Old Main</td>
<td></td>
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<tr>
<td>administration.wvutech.edu</td>
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<tr>
<td><strong>Admissions</strong></td>
<td>304.442.3146</td>
<td>304.442.3067</td>
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<tr>
<td>210 Old Main</td>
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<tr>
<td>admissions.wvutech.edu</td>
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<tr>
<td><strong>Athletics</strong></td>
<td>304.442.3121</td>
<td>304.442.3499</td>
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<tr>
<td>First Floor Baisi Athletic Center</td>
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<tr>
<td>goldenbearathletics.com</td>
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<tr>
<td><strong>Bookstore</strong></td>
<td>304.442.3106</td>
<td>304.442.3007</td>
</tr>
<tr>
<td>Third Floor Tech Center</td>
<td></td>
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<tr>
<td>wvutech.bnbookstore.com</td>
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<tr>
<td><strong>Cashier’s Office</strong></td>
<td>304.442.3176</td>
<td>304.442-1029</td>
</tr>
<tr>
<td>212 Old Main</td>
<td></td>
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<tr>
<td><a href="mailto:Tech-OSA@mail.wvu.edu">Tech-OSA@mail.wvu.edu</a></td>
<td></td>
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<tr>
<td><strong>Dean of Students</strong></td>
<td>304.442.3158</td>
<td>304.442.3464</td>
</tr>
<tr>
<td>325 Old Main</td>
<td></td>
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<tr>
<td><a href="mailto:TechStudentLife@mail.wvu.edu">TechStudentLife@mail.wvu.edu</a></td>
<td></td>
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<tr>
<td><strong>Diversity, Equity and Inclusion</strong></td>
<td>304.293.5496</td>
<td>304.293.8279</td>
</tr>
<tr>
<td>1085 VanVoorhis Road, Suite 250 WVU Main Campus</td>
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<tr>
<td><a href="http://diversity.wvu.edu">http://diversity.wvu.edu</a></td>
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<tr>
<td><strong>Financial Aid</strong></td>
<td>304.442.3228</td>
<td>304.442.3052</td>
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<tr>
<td>205 Old Main</td>
<td>1.888.554.8324</td>
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<tr>
<td>finaid.wvutech.edu</td>
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<tr>
<td><strong>Library</strong></td>
<td>304.442.3230</td>
<td>304.442.3091</td>
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<tr>
<td>Vining Library</td>
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<tr>
<td>library.wvutech.edu</td>
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<tr>
<td><strong>Police (Campus)</strong></td>
<td>304.442.3101</td>
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<tr>
<td>Old Learning Center Bldg.</td>
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<tr>
<td><strong>Office of the Campus Provost</strong></td>
<td>304.442.3207</td>
<td>304.442.3838</td>
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<tr>
<td>216 Old Main</td>
<td></td>
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<tr>
<td><strong>Office of the Registrar</strong></td>
<td>304.442.3151</td>
<td>304.442.3097</td>
</tr>
<tr>
<td>3400-3405 Orndorff Hall</td>
<td></td>
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<tr>
<td>techregistrar.wvutech.edu</td>
<td></td>
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<tr>
<td><strong>Residence Life</strong></td>
<td>304.442.3183</td>
<td>304.442.3464</td>
</tr>
<tr>
<td>325 Old Main, Montgomery, WV 25136</td>
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<tr>
<td>housing.wvutech.edu</td>
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<tr>
<td><strong>Student Success Center</strong></td>
<td>304.442.6262</td>
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</tr>
<tr>
<td>3rd Floor of Vining Library</td>
<td></td>
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</tr>
<tr>
<td><a href="mailto:Tech-Success-Center@mail.wvu.edu">Tech-Success-Center@mail.wvu.edu</a></td>
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# Beckley Campus

<table>
<thead>
<tr>
<th>Department</th>
<th>Phone</th>
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<tbody>
<tr>
<td><strong>Admissions</strong></td>
<td></td>
</tr>
<tr>
<td>313 South Kanawha Street</td>
<td>304.929.0319</td>
</tr>
<tr>
<td>Beckley, WV 25801</td>
<td></td>
</tr>
<tr>
<td><strong>Bookstore (All Inquiries to Montgomery Campus)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Faculty and Administrative Offices</strong></td>
<td></td>
</tr>
<tr>
<td>Learning Resource Center (LRC)</td>
<td>304.929.TECH (8324)</td>
</tr>
<tr>
<td>512 South Kanawha Street</td>
<td></td>
</tr>
<tr>
<td>Beckley, WV 25801</td>
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<tr>
<td><strong>Library</strong></td>
<td></td>
</tr>
<tr>
<td>First Floor Learning Resource Center (LRC)</td>
<td>304.929.0340</td>
</tr>
<tr>
<td>Beckley, WV 25801</td>
<td></td>
</tr>
<tr>
<td><strong>One Stop Shop (All Inquiries)</strong></td>
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<tr>
<td>• Financial Aid</td>
<td>304.929.TECH (8324)</td>
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<td>• Financial Services</td>
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<tr>
<td>• Registrar</td>
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<tr>
<td>512 Learning Resource Center (LRC)</td>
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<tr>
<td>Beckley, WV 25801</td>
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<tr>
<td><strong>Police (Campus)</strong></td>
<td></td>
</tr>
<tr>
<td>Suite 116 University Hall</td>
<td>304.929.COPS (2677)</td>
</tr>
<tr>
<td>510 Donaldson Lane</td>
<td></td>
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<tr>
<td>Beckley, WV 25801</td>
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<tr>
<td><strong>Student Life</strong></td>
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<tr>
<td>305 Learning Resource Center (LRC)</td>
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<td>Beckley, WV 25801</td>
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<tr>
<td><strong>Student Success Center</strong></td>
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<tr>
<td>305 Learning Resource Center (LRC)</td>
<td>304.929.0345</td>
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<tr>
<td>Beckley, WV 25801</td>
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<tr>
<td><strong>Tech Adventures</strong></td>
<td></td>
</tr>
<tr>
<td>704 South Kanawha Street</td>
<td>304.929.0327</td>
</tr>
<tr>
<td>Beckley, WV 25801</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:techadventures@mail.wvu.edu">techadventures@mail.wvu.edu</a></td>
<td></td>
</tr>
<tr>
<td>Beckley Mailing Address:</td>
<td></td>
</tr>
<tr>
<td>410 Neville Street</td>
<td>304.929.TECH (8324)</td>
</tr>
<tr>
<td>Beckley, WV 25801</td>
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</tbody>
</table>
1. General Information

A Short History of WVU Tech

The West Virginia University Institute of Technology (WVU Tech) was established in February 1895 under the name, Montgomery Preparatory School located in Montgomery, WV. In its earliest years, the school provided academic preparation for students from Southern West Virginia who were bound for West Virginia University. With the passing of time, as new community needs emerged the school changed in response to these needs. In 1917 the curriculum became vocational in nature and the school was renamed the West Virginia Trade School. In 1921 as its primary function shifted to the preparation of teachers for regional elementary schools the school became a junior college, the New River State School. Ten years later, the school name was changed to New River State College reflecting its mandate to provide baccalaureate education. Then, in 1941, when technical and business programs were added to serve regional businesses and industries, the college became the West Virginia Institute of Technology – and also the only technical college in West Virginia. In 1952 baccalaureate degrees in engineering were added. In 1996, the college was named West Virginia University Institute of Technology, when it became a regional campus of West Virginia University. Subsequently, in 2006, WVU Tech became a full division of West Virginia University. Starting in Fall 2016, following the acquisition of a campus in Beckley, WV, WVU Tech is offering classes on both the Montgomery and Beckley campuses for one academic year. WVU Tech will move in its entirety and offer courses on only the Beckley campus from Fall 2017 onwards.

Institutional Mission and Goals

Mission
West Virginia University Institute of Technology provides an accessible and supportive environment in which students are guided to be active and contributing members of society by fostering intellectual and personal growth through comprehensive educational experiences.

Vision
To be a nationally-recognized and preeminent regional undergraduate STEM (Science, Technology, Engineering, and Mathematics) teaching institution with well-balanced curricula across diverse academic disciplines.

Goals and Objectives
Goal 1: Engage undergraduate students in a challenging academic environment.

Objectives
1. Educate, retain, and graduate the leaders of tomorrow at the undergraduate level.
2. Encourage innovation in teaching and, through assessment of outcomes and objectives, transform the curriculum to provide students with the skills they need to succeed in a rapidly changing global society.
3. Strengthen relationships with state and regional primary and secondary education systems, as well as community and technical colleges, to facilitate a seamless, life-long learning process.

Goal 2: Excel in scholarly activity, professional development, and innovation throughout the institution.

Objectives
1. Increase scholarly activity addressing challenges faced by West Virginia, the nation, and the world.
2. Strengthen interdisciplinary activity in scholarship, professional development, and creativity.
3. Encourage interdisciplinary activity in scholarship, professional development, and creativity.

Goal 3: Maintain and strengthen an environment that promotes, attracts, supports, and includes diverse groups of students, faculty and staff.

Objectives
1. Incorporate diversity broadly into the curriculum.
2. Facilitate intercultural, intercommunity, and campus-wide outreach.

Goal 4: Advance national awareness, international activity, and global engagement.

Objectives
1. Promote international activity, world-wide engagement, and awareness of national and global issues.
2. Integrate global themes broadly into the curriculum.

Goal 5: Enhance the well-being and the quality of life of the people of West Virginia.

Objectives
1. Promote sustainable economic development and a cultural environment that improve the quality of life throughout the state.
2. Increase opportunities for West Virginians through life-long learning and community outreach.

Accreditation

West Virginia University Institute of Technology is accredited by The Higher Learning Commission as a division of West Virginia University. West Virginia University is a member of the North Central Association of Colleges and Schools. Information regarding affiliation status may be directed to North Central Association of Colleges and Schools, Higher Learning Commission, 30 North LaSalle Street, Suite 2400, Chicago, Illinois 60602-2504 (Phone: 1-800-621-7440).

Information regarding specialized program accreditation may be directed to the following accrediting agencies:


**Nursing BSN Program:** Commission on Collegiate Nursing Education, 1 DuPont Circle, NW, Suite 530, Washington, DC 20036-1120 (Telephone: 202-887-6791) http://www.aacn.nche.edu/ccne-accreditation (Accredited through WVU).

**Location**

**MONTGOMERY CAMPUS**

WVU Tech (Montgomery Campus) is located in Montgomery, West Virginia, 28 miles southeast of Charleston, the state capital. Situated on the Kanawha River in the rugged Allegheny Mountains, Montgomery has about 1,600 residents. Montgomery is a friendly and safe community, where city officials and college administrators have cooperated for more than 80 years in partnerships to benefit members of both the campus and community.

Major U.S. highways serving WVU Tech include Interstate Routes 64, 77, and 79, all of which run within thirty miles of the campus, and U.S. Route 60, a major east-west artery that runs adjacent to the campus. Air services are provided at Yeager Airport in Charleston; train services are provided by Amtrak; and bus services are provided by Kanawha Rapid Transit (KRT) and Mountain Transit Authority (MTA).

**BECKLEY CAMPUS**

WVU Tech (Beckley Campus) is located in Beckley, West Virginia. Situated in scenic Raleigh County in southern West Virginia, Beckley has a population of about 17,500. Beckley is a vibrant and growing community in close proximity to many of West Virginia’s wild and wonderful outdoor recreation areas.

Major U.S. highways serving the Beckley campus of WVU Tech include Interstate Routes 64 and 77. Within 11 miles of Beckley is Amtrak’s Prince Station. Air services are provided through Yeager Airport in Charleston, WV or Beckley Raleigh County Memorial Airport (ViaAir to Charlotte, North Carolina).

Within sixty minutes of both the Montgomery and Beckley campuses are some of the best “wild and wonderful” recreational opportunities in the eastern United States. Hawks Nest State Park, with its aerial tram to the bottom of the New River Canyon, is within 20 miles. The New River Gorge Bridge, the longest arch bridge east of the Mississippi River and third longest in the world, that plays host to the extreme adventure event, Bridge Day, is within 30 miles. Other nearby parks, Kanawha State Forest, Coonskin Park, Babcock State Park, Summersville Lake and Stephen’s Lake, are between one and two hours away and afford abundant opportunities to picnic, swim, boat, and fish. Adventure enthusiasts have next-door access to such highly desirable sports as zip lining, whitewater rafting, rock climbing, hiking, mountain biking, Frisbee Golf and the exhilarating winter sports of snowboarding, snowshoeing, snow tubing, and alpine, cross-country, and downhill skiing.
Social Justice and Mediation of Conflict

WVU Tech is committed to assuring that all individuals and groups have access to all of the benefits of the University. Such assurance is possible only in an atmosphere of mutual respect and trust, where basic concepts and principles of social justice are integral to daily practice. All groups on campus (students, faculty, staff, administrators, and constituent groups) have the legal and moral responsibility to promote opportunity, equality, civility, and respect for all peoples.

WVU Tech is also committed to assuring the resolution of conflict through mediation, a structured process of communication in which conflicting parties are guided in discussion and resolution of matters of conflict.

Information and assistance with filing a complaint or obtaining mediation services is available online at http://diversity.wvu.edu/ea/mediation-services/mediation or by telephone at 304.293.5600, by email at diversity@mail.wvu.edu, or by writing the Division of Diversity, Equity and Inclusion, West Virginia University, PO Box 6202, Morgantown, WV 26506-6202.

Tech Golden Bear Alumni Association

The goals of the Tech Golden Bear Alumni Association are twofold: to promote the interests of the University and to establish mutually beneficial relationships between the University, its alumni, and other appropriate constituent groups. All former students who completed academic courses at New River State College, West Virginia Institute of Technology, the Community and Technical College of West Virginia Institute of Technology and West Virginia University Institute of Technology qualify for active membership. Members of the faculty, both current and emeritus, hold honorary memberships, and friends of the University may be named to associate membership. Details about the Tech Golden Bear Alumni Association are available online at http://www.wvutech.edu/alumni, by email at tech-alumni@mail.wvu.edu, by telephone at 304.442.3131, or by writing WVU Tech Alumni Relations, 116 Old Main, 405 Fayette Pike, Montgomery, WV 25136.
2. Student Life and Services

Division of Student Life

The Division of Student Life is responsible for programs and services designed to help students achieve their educational goals. Departments under the Student Life umbrella include the Dean of Student’s Office, Student Activities, Student Government Association, University Police, Student Health and Counseling Services, Accessibility Services, Career Services & Cooperative Education, the Student Success Center, Student Support Services, Upward Bound, Residence Life, and Dining Services. The Division of Student Life is located in 325 Old Main on the Montgomery Campus and at 305 Learning Resource Center (LRC) on the Beckley campus. For more information about student life at WVU Tech, please call the Dean of Students Office at 304-442-3158 or visit http://studentlife.wvutech.edu/.

Student Conduct Code

Students and student organizations at WVU Tech are free to exercise their fundamental and constitutional rights, but in doing so are required to conduct themselves responsibly within the context of the university community. Because student status neither abridges nor extends the rights and responsibilities afforded by local, state, and national law, students are expected to abide by the rules and regulations WVU Tech sets forth governing their conduct. These are delineated in Policy 31: University Student Conduct Code, which was adopted by the West Virginia University Board of Governors on August 12, 2013, and which is described in the 2016-2017 Bearfacts. A copy of the Bearfacts may be accessed online at http://studentlife.wvutech.edu/.

Campus Life Office

WVU Tech strives to provide students with a memorable college experience through healthy and supportive social, recreational, and educational programs.

The Campus Life Office oversees the registered student organizations that cater to diverse interests (the professions, Greek life, faith, athletics, student government, and health care, among others). Active membership in student organizations affords opportunities to expand friendships, develop professional networks, pursue personal interests and hobbies, and cultivate talents as leaders and project managers. The Student Activities Office also provides student ID cards, registers students in clubs, and manages Tech Center room reservations.

The Campus Life Office is located at 325 Old Main on the Montgomery Campus and at 305 Learning Resource Center (LRC) on the Beckley campus. Details about programs and services are posted at http://studentlife.wvutech.edu/.

Student Government Association (SGA)

The Student Government Association (SGA) is made up of students who are chosen in campus-wide elections held each spring. One of the SGA’s most important functions is developing a budget by which student activity fees are appropriated to the many activities and organizations found on campus.
In addition to these financial responsibilities, SGA appoints student representatives to serve on most of the committees of Faculty Assembly, including publications, social activities, discipline, financial aid, academic affairs, athletics, and alumni activities.

Residence halls are self-governed through residence hall councils. Students are responsible for managing their operations, social activities, and care.

Fraternal organizations affiliated with WVU Tech maintain their own governing bodies.

Information about student organizations may be accessed online at http://studentlife.wvutech.edu/.

University Police

University Police provides patrol-protection to all WVU Tech campus property including, classrooms, laboratories, parking lots, and residence halls. WVU Tech officers are vested with full police powers and responsibilities identical to the local sheriff. Officers are responsible for public safety services including crime reports, investigations, traffic accidents, fire emergencies and enforcement of local, state and federal laws requiring police assistance.

The WVU Tech Police Department in Montgomery is located in the Old Learning Center Building (Beside COBE Hall) and in Suite 116 University Hall at 510 Donaldson Lane, but will move to 313 South Kanawha Street on the Beckley campus during the fall of 2016 semester. For details about campus police services, visit http://studentlife.wvutech.edu/campus-safety.

Student Health Services

The Montgomery campus Student Health Clinic is conveniently located in Suite 200 in Montgomery General Hospital and is open to all students for walk-in and by-appointment visits. From allergy shots and immunizations to doctor referrals, sports physicals and checkups, the clinic offers a full suite of essential medical services to keep students healthy and productive. Clinic visits are free of charge. Students with chronic health issues should schedule an initial visit so the clinic may establish a treatment plan for emergency situations. For details about the Beckley campus Student Health Clinic, please call 304.929.1241.

Accessibility Services

As a division of West Virginia University, WVU Tech partners with the main campus, to help WVU Tech students achieve success regardless of any physical, learning, psychological, sensory or other documented disability in compliance with guidelines of the Americans with Disabilities Act (ADA), Section 504, of the Rehabilitation Act of 1973, and current case law. For more information about available services, please call 304-293-5600 or visit http://accessibilityservices.wvu.edu/accomm.

Career Services and Cooperative Education and Internship Programs

The Career Services and Cooperative Education Office provides students with career development and employment services to meet their educational and professional goals.

- Golden Bear TRAK – Online career management system provides employment and internship/co-op opportunities, career development workshops, career fairs, resume distribution, and networking.
Career Coaching and Advising – One-on-one help with choosing the right career and the right academic major. Career services also provides access to free career assessments.

Career and Job Fairs – Career Services hosts multiple events throughout the academic year to connect students to employment opportunities.

Graduate and Professional School information – Assistance in selecting a graduate school, writing personal statements and information GRE, GMAT, LSAT, MCAT, TOEFL, and TSE examinations.

Through cooperative (co-op) and internship programs, students may:

• Earn money to finance their college education
• Explore career opportunities
• Enrich their classroom learning through real-world experience
• Accumulate actual career-related work experience
• Enhance their marketability after graduation
• Establish valuable professional contacts
• Improve their communication and interpersonal skills

Students who elect the cooperative education (co-op) program alternate longer periods of full-time study with periods of full-time paid employment. They are also required to commit to a minimum of three work periods. Students who elect the internship program gain the same valuable paid work experience but for shorter periods of time, usually one or two weeks.

Career Services and Cooperative Education Office is located in 326 Old Main. For more information: Call 304.442.3185, email: techcareerservices@mail.wvu.edu, or visit http://studentlife.wvutech.edu/student-services/career.

Counseling Services

A student’s time at WVU Tech may be filled with transitions, self-exploration and change. Whether a full- or part-time residential or commuter student, WVU Tech wants to help students complete their education. Services and programs are designed to support students through these experiences, help students succeed in college and guide them toward a more fulfilling life. Services are provided in an atmosphere that is welcoming, comfortable and multiculturally sensitive for all students, faculty and staff.

Counseling Services is located in 324 Old Main. For more information: Call 304.442.3209, email: Tech-Counseling@mail.wvu.edu, or visit http://studentlife.wvutech.edu/student-services/health-and-wellness/counseling.

Student Success Center

MONTOMGERY CAMPUS

Opened in April 2013, the Student Success Center (SSC), located on the third floor of Vining Library, is a powerful tool in every WVU Tech student’s academic success toolbox. The SSC provides academic advising for first-year students and free peer tutoring and skill building workshops for all WVU Tech students. The SSC also plans and executes new student orientation, a multi-day program designed to assist new students to transition smoothly to the WVU Tech community. Among the most popular destinations on campus, the SSC proudly hosted more than 12,000 student visits during its first year of operation.
The SSC is also a quiet and comfortable place to study, hang out with friends or grab a quick snack. The SSC Vending Café provides delicious meals and snacks on the go. Students can use their meal plans to make purchases at the Café. The Student Success Center at WVU Tech is dedicated to providing programs and advice to students from orientation to graduation. For more information about the SSC, call 304-442-6262 or visit http://studentlife.wvutech.edu/student-services/student-success.

BECKLEY CAMPUS

The Student Success Center on the Beckley Campus is housed in the Robert C. Byrd Learning Center. Many of the same services that are offered on the Montgomery campus are offered on the Beckley campus.

Student Support Services

Student Support Services (SSS) is a federally funded TRIO program through the United States Department of Education. It is designed to assist eligible WVU Tech students on their path toward degree completion. Services provided include but are not limited to academic, career, financial aid and graduate school advising as well as professional and peer tutoring, peer mentoring, workshops, computer lab with free printing, career opportunities and cultural activities. Services are provided free of charge to those who qualify.

Eligibility requirements for SSS include:
- U.S. citizenship
- Enrolled full time at WVU Tech

And one or more of the following:
- First generation college student (neither parent received a four year degree) Pell eligibility
- Verification of a documented disability through the West Virginia University Office of Accessibility Services.

Students can apply at any time during their undergraduate career at Tech, regardless of the semester. Participation in the program is on a first-come, first-served basis.

For more information about the services and operations of the SSS program please contact the program at 304-442-3477 or Tech-SSS@mail.wvu.edu. Applications can also be picked up in the SSS office on the Montgomery campus at 304 Old Main and at 305 Learning Resource Center (LRC) on the Beckley campus. Please visit our website at: http://studentlife.wvutech.edu/student-services/student-success.

Residence Life

Because living on campus helps students both strengthen their college connections and achieve better academically, WVU Tech requires all first- and second-year students who have completed fewer than 59 credit hours (including transfer credits) to live in University housing. The few exceptions to this policy, which must be verified, are:
- Students who will be residing with parents who live within commuting distance (50-miles radius of campus)
- Married students
- Students with children for whom they are the primary care-giver
- Students who are 21 years of age and older, and
- Students that are veterans
After careful consideration of how the relocation from Montgomery to Beckley may impact students, we have taken steps to alleviate what may be an unanticipated, financial burden regarding on-campus housing.

Accordingly, WVU Tech students enrolled as of January 1, 2016, who are exempt from residing on the Montgomery campus, will also be exempt from residing on campus in Beckley even if their permanent address is greater than 50 miles from the Beckley campus.

Likewise, students living on the Montgomery campus as of January 1, 2016 who choose to enroll at the Beckley campus beginning Fall 2016 will not be required to reside on the Beckley campus even if their permanent address falls outside of a 50 mile radius of the Beckley campus.

Given the demonstrated benefits of living on campus WVU Tech also strongly encourages upper-class students to live on campus as well. Complete information about on-campus living, as well as policy and procedures governing campus housing are posted online at [http://housing.wvutech.edu/](http://housing.wvutech.edu/). Residence Life is located in 326 Old Main on the Montgomery campus and at 305 Learning Resource Center (LRC) on the Beckley campus.

**Dining Services**

WVU Tech Dining Services provides a variety of culinary options in an inviting and lively environment on both campuses. Dining Services provides high-quality customer service, uses the finest products, and operates three dining venues on campus to meet the demands of busy WVU Tech students.

Students living in WVU Tech operated residence halls are required to enroll in a resident student dining plan as an integral part of the on-campus living experience. Details about dining options, meal plan requirements, and more services may be accessed online at [http://dining.wvutech.edu/](http://dining.wvutech.edu/)

**MONTGOMERY CAMPUS**

**The Bears Den**

This “all you care to eat” main dining hall on campus is conveniently located at the center of the WVU Tech campus in the Tech Center. The Bears Den accepts both the student meal plan and cash and is open for breakfast, lunch, and dinner.

**Student Success Center Vending Café**

Located in the Student Success Center on the third floor of Vining Library the Vending Café offers a wide range of hot and cold beverages, fresh food entrees and snacks. It’s a quick and easy option on the student meal plan.

**Tech Spot Grab and Go**

Opened in the Fall 2015 and located in the first floor of the Leonard C. Nelson College of Engineering & Sciences Building, The Tech Spot is the newest dining venue on campus. As a part of the student meal plan, The Tech Spot offers freshly brewed coffees, cold beverages, sandwiches, wraps, salads, and more.

**BECKLEY CAMPUS**
**Student Success Center Vending Café**

Located in the Learning Resource Center (LRC) the Café offers a wide variety of hot and cold beverages, fresh food entrees, and snacks.

**Bears Den**

The main dining hall located on the ground floor of the Robert C. Byrd Learning Resource Center is an “all you can eat” facility. Meal plans and cash will be accepted and the Bears Den is open for breakfast, lunch, and dinner.

**Athletics**

WVU Tech supports numerous intercollegiate competitive sports. For men, WVU Tech offers baseball, basketball, cross-country, golf, soccer, swimming, track & field, and wrestling. For women, WVU Tech offers basketball, cross-country, soccer, softball, swimming, track & field, and volleyball. WVU Tech is a proud member of the National Association of Intercollegiate Athletics (NAIA), River States Conference and the United States College Athletic Association (USCAA).

In the 2016-17 academic year, Tech’s athletics will be housed on the Montgomery campus in the Baisi Athletic Center, named in honor of the late Neal Baisi, the standout former coach, athletic director, and lecturer at WVU Tech. The Baisi Athletic Center is home to WVU Tech’s 2000-seat gymnasium, the recently fully renovated Tech swimming pool, the campus wellness center, and the fully-equipped weight room. For more information about athletics at, please visit goldenbearathletics.com.

**Student Identification Card**

Student Identification Cards are required of all students and are used for library privileges, admission to athletic events and facilities, social activities, student health services, and other college functions.

Student ID Cards may be obtained free of charge in the Office of Campus Life, 325 Old Main. There is a fee of $20.00 to replace lost or mutilated cards. To obtain or replace a student identification card, please call 304-442-3183.

Student Identification cards on the Beckley campus may be obtained at the One Stop Shop located in the Robert C. Byrd Learning Resource Center.

**Student Organizations**

WVU Tech extends recognition to a wide variety of student organizations; permitting students to join together to pursue common interests. Organizations on the Tech campus include fraternities, sororities, professional, and special interest groups. For a list of organizations, please visit the Student Life website at http://studentlife.wvutech.edu/ or contact the Office of Campus Life at 304-442-3183 located at 325 Old Main on the Montgomery campus and at 305 Learning Resource Center (LRC) on the Beckley campus.

**Tech Center – Montgomery Campus**

The Tech Center, the social hub of the Montgomery campus, affords such facilities as the Bear’s Den dining hall, activity room, television lounge, study lounge, ballroom,
bookstore, and game room. In addition, the Tech Center offers a total educational program, through which all on campus can informally get to know and understand one another.

**Bookstore**

The bookstore at WVU Tech is managed by Barnes & Noble, Inc. This affiliation enables Tech to offer both new and used print textbooks, the eTextbook option, textbook rentals, and a wide variety of merchandise. The bookstore is located on the top floor of the Tech Center and is open on business days year-round. For more information about the WVU Tech Bookstore call 304.442.3106. You can access the online bookstore at [wvutech.bnbookstore.com](http://wvutech.bnbookstore.com)

Orders for books for the Beckley campus will be completed through the Montgomery Campus Bookstore. Books will be delivered to a Barnes & Noble kiosk on the first floor in the Dining area located in the Learning Resource Center (LRC) according to the following schedule: August 16, 17, 19, and 20, 2016, from 9:00 a.m.-4:00 p.m.; Thursday, August 18th from 9:00 a.m. – 5:00 p.m., and August 22 & 23 from 9:00 a.m. – Noon.

**Vining Library**

The Vining Library houses more than 153,000 volumes, 380,000 microfiche plates, 18,400 microfilm reels, and is a Federal Government Documents Depository. The library provides access to a variety of electronic research databases, interlibrary loans, and audio-visual media. Textbooks are provided for short term use in the Reserve Section located at the Circulation Desk. Several areas are available for individual study or for use by study groups. Computers, printers, photocopiers, and wireless internet access are also available at the Vining Library. The third floor of Vining Library is home to WVU Tech’s Student Success Center. Information and links to library resources can be found at [library.wvutech.edu](http://library.wvutech.edu).

**Beckley Campus Library**

The library provides volumes, electronic resources, and study spaces. The Beckley Campus Library is located on the 2nd floor of the Learning Resource Center (LRC), at 512 South Kanawha Street and will be open throughout the 2016-2017 academic year.

**Students Called to Serve in the Military**

- Students who withdraw from the University for military service up to and including the 12th week of the semester will receive a full refund of their fees and be administratively withdrawn from their classes. No course grades or credit will be awarded.
- Students who leave the University for military service after the 12th week of the semester should work with the designated contact person in their home college (usually the academic associate/assistant dean). The student may also contact the Office of the University Registrar (304-293-5355). The contact person will assist the student in reviewing the student's eligibility for credit for their courses on a course-by-course basis with the instructors.
- The contact person will work with the student's instructors to gather grade information for the student. If the course is not in the student's home college, the contact person can work with his/her counterpart in the appropriate college. Several outcomes are possible: a. If the course is substantially complete and the student has done passing work, the student should receive the grade earned at that time. It is anticipated that this would be the outcome in the majority of the courses. NOTE: Students who receive orders with
sufficient advance notice are expected to notify their professors of their
deployment date and meet with their professors to come to an
agreement on what regular course assignments they can reasonably complete
prior to the deployment date (the details of this arrangement should be
included in a contract initialed by both the instructor and the student;
contracts must be placed in the student’s file). Students should not be
penalized for not completing assignments, quizzes, tests, or exams due after
their deployment date. b. If a critical competency has yet to be covered in a
competency-based course, the instructor should award a grade of "I" and work
with the student to develop a plan to complete that critical part of the course.
To alleviate confusion at a later date, the plan should be in writing and signed
by both the instructor and the student. Students called to active duty for a
relatively short duration that includes exam week may arrange for an "I" with
provision to make up the final exam after completing the period of duty. c. If
the student chooses to withdraw from the course. the contact person will work
with the appropriate University office to provide an administrative withdrawal.

**Leave for Military Drill**

In accordance with the “Veteran Friendly” designation, WVU faculty may allow
students who are members of the US Armed Forces (including the National Guard and Active
Reserve) to make up tests and assignments that are missed during a semester if the student
is officially called up for military service requirements for a limited period and if the delayed
coursework completion will not irreversibly impact the student’s ability to appropriately
master the required subject matter. Absence due to required military obligation should not
exceed a cumulative amount of three weeks. Students should notify faculty members of the
circumstances of their absence as far in advance as possible and work with faculty members
to agree upon a plan of action for completing course requirements.

**Tech Adventures**

Tech Adventures offers students opportunities to experience outdoor recreation
activities as part of the co-curricular program at WVU Tech. Launched in July 2016, the
program offers first year students outdoor orientation programs, outings, seminars, outdoor
equipment rental and trip planning resources. Activities vary from semester to semester and
include hiking, rock climbing, paddling, mountain biking and winter sports at the many
regional parks and forests of central West Virginia. The program offers students the
opportunity to challenge themselves to reach new heights both physically and mentally, visit
new places, learn outdoor skills and make new friends. Programs are led by program staff
and local guide services. In the near future, opportunities for student leadership positions
will be available. In addition to co-curricular activities, Tech Adventures is partnering with
the College of Business, Humanities and Social Science to offer academic courses in outdoor
skills and adventure recreation management. For more information about Tech Adventures,
call 304-929-0327, email TechAdventures@mail.wvu.edu or visit
http://studentlife.wvutech.edu/adventure/. Tech Adventures Office will be located at 704
South Kanawha Street, Beckley, WV 25801.

**First-Year Seminar (WVUE 191)**

Under the aegis of academic affairs, the first-year seminar is a required one-credit
course for all first-time, full-time first year students and full-time transfer students who enter
with fewer than 24 credit hours. This course is designed to assist new students in making a
smooth transition to the Tech community, and it includes units in goal setting, learning
preferences, critical thinking, information literacy, and communication, among others, all of
which are essential to successfully completing the all-important first semester. Instruction is
provided by members of the faculty and student life personnel. Guest experts are occasionally invited as speakers. Students have an opportunity to establish early relationships with faculty in their academic departments and confer with their academic advisors to develop short- and long-range academic and career plans.
3. Admission

Introduction

WVU Institute of Technology seeks to recruit and admit students who aspire to careers in engineering, sciences, business, humanities, social sciences, and nursing. It is important that the abilities and interests of students are appropriately matched to the rigor of Tech’s academic programs. Each candidate’s application, transcripts, and test results are carefully reviewed for compliance with admission standards. We assure equal educational opportunity to all. We welcome applicants without regard to race, religion, color, sex, sexual orientation, marital status, age, handicap or disability, veteran status, or national origin.

WVU Tech is subject to the undergraduate admissions policies and procedures of the West Virginia Higher Education Policy Commission (HEPC). These are described in detail in Series 23: Standards and Procedures for Undergraduate Admissions at Four-Year Colleges and Universities. (See https://www.wvhepc.org/resources/Series_23_2-7-13.pdf.)

The WVU Tech application is available online at admissions.wvutech.edu. All international and Montgomery students may contact the Montgomery Admissions office by writing WVU Tech Office of Admissions, 405 Fayette Pike, Montgomery WV, 25136, by calling 1.888.554.8324, or by email at tech-admissions@mail.wvu.edu. Beckley students may contact the Beckley Admissions Office at 400 S. Kanawha St., Beckley, WV 25801, by calling 304.929.0311, or by email at tech-admissions@mail.wvu.edu. In addition, applications may be available from high school counselors throughout West Virginia.

Applications are processed on a rolling decision basis. Students are encouraged to apply at their earliest opportunity because applicants are considered on a first-come, first-served basis. Those who apply for the fall term before May 1 will automatically receive priority consideration for institutional scholarships.

Because some degree programs have standards that exceed baseline requirements for admission to the University, admission to WVU Tech does not necessarily constitute admission into a specific degree program.

General Admission Categories

Freshman Students

Freshman applicants should submit the WVU Tech application, their official final high school transcript (sent directly from the high school), their ACT or SAT test scores, and proof of immunizations. The graduation date shown on the final high school transcript must precede the first day of classes of the term the student first enrolls at WVU Tech.

Courses that freshman applicants are expected to have successfully completed in high school include:

- 4 units of English (including grammar, composition, and literature)
- 3 units of social studies (including U.S. History)
- 4 units of college preparatory mathematics (three units must be algebra I and higher, Math I and higher; Transitional Math for Seniors will be accepted.)
- 3 units of science (all must be college preparatory, preferably biology, chemistry, or physics)
- 2 units of the same foreign language
• 1 unit of fine art

In addition to a 2.0 high school GPA and an 18 ACT composite or 870 SAT (combined Critical Reading and Math scores taken prior to March 2016) or a 950 SAT composite (combined evidence based Reading/Writing and Math scores taken March 2016 and after.)

In addition to the general requirements for admission, applicants to the Leonard C. Nelson College of Engineering and Sciences must also obtain an ACT math school of at least 19 or a SAT math score of 460 taken prior to March 2016 or a 500 SAT score taken March 2016 and after.)

Students who wish to pursue a career in engineering, but do not meet the above criteria for admission to the Leonard C. Nelson College of Engineering & Sciences can be admitted to the pre-engineering program. A pre-engineering student could be allowed to transfer to an engineering major after completing MATH 126 College Algebra and MATH 128 Plane Trigonometry, both with a ‘C’ or better grade.

**Transfer Students: Intra-University**

Students enrolled at WVU (either the Main Campus or Potomac State College) who wish to transfer to WVU Tech must: (1) submit the Change of Campus form that can be accessed at techregistrar.wvutech.edu/forms; and (2) fulfill all general admission requirements and all stipulated program admission requirements. If the transfer will take place before two full semesters has been completed, the student must also fulfill all freshman admission requirements.

**Transfer Students from Other Accredited Institutions**

Students wishing to transfer from a regionally accredited institution must be academically eligible to return to that institution and must have earned at least a 2.0 GPA for the academic work being transferred. The official acceptance of transfer students must take place at least one month prior to the registration date for the term of their admission.

Applicants should submit the WVU Tech application, official transcript(s) directly from each college attended, and for applicants with fewer than 24 transferable credit hours (excluding developmental courses), ACT or SAT test scores and an official copy of the high school transcript.

WVU Tech is subject to the transfer guidelines adopted by the HEPC as described in Series 17: Transferability of Credits and Grades at West Virginia Public Colleges and Universities. (See https://www.wvhepc.org/resources/133-17.pdf.) Thus, WVU Tech will accept a maximum of 72 semester hours of lower-division credits and grades from public community and technical colleges or regional campuses. Additional credit from accredited four-year colleges and universities may be accepted, but the major department and the Registrar will determine which courses may apply to a particular degree.

Students with fewer than 24 transferable credit hours must meet freshman admission standards and must take the course, WVUE 191, First-Year Seminar.

All transfer students will be required to complete at least 36 hours of credit in residence at WVU Tech prior to their graduation. Transfer students in engineering programs must take at least 24 credit hours of upper division engineering courses in residence at WVU Tech, and these must include the capstone design course(s) for the particular program.

**Evaluation of Transfer Credits**
All credits, grades and quality points shall be entered on the permanent record card of transfer students. Courses from non-accredited colleges will be shown on the transcript, but will not be accepted for credit. An exception is that such courses may be accepted for the Regents BA degree program with the approval of the program coordinator. Evaluation of transfer credits will be approved by the Registrar.

Transfer students must fulfill the graduation requirements of the college, including 40 hours of 300-400 level courses. Credits earned at a junior or community college may not be used to satisfy this requirement.

**International Students**

International students are urged to visit the WVU Tech web page for international students at [international.wvutech.edu](http://international.wvutech.edu). The application process and the scholarship program, that WVU Tech provides to academically qualified international students, are explained in depth.

The following checklists indicate materials and documents that are required of international applicants:

- Application for Admission
- Application Fee
- Official High School Transcripts – Equivalent of cumulative 2.0 or better secondary/high school GPA on a 4.0 scale
- Original Language of Issue (Translated)
- Evaluated High School Transcripts
  To ensure proper calculation of GPA and credit for courses taken, it is the responsibility of the Applicant to submit their academic records to an independent academic evaluator. While WVU Tech does not endorse a specific company or program, we suggest using World Education Services ([www.wes.org](http://www.wes.org)). The required evaluation to have completed on your transcripts is the WES Basic Course-By-Course (with GPA & course-levels).
- Proof of English Proficiency – TOEFL–61 or IELTS–6.0 required
  Students who are citizens of Canada, United Kingdom, Australia, Trinidad and Tobago, the British Virgin Islands or any other native English speaking countries are exempt from the TOEFL and IELTS requirements.
- ACT or SAT Scores – ACT composite score of 18 or SAT composite score of 870, (combined Critical Reading and Math scores taken prior to March 2016) or a 950 SAT composite (combined evidence based Reading/Writing and Math scores taken March 2016 or after) not including the writing portion
- Immunization Records
- Copy of Current Passport and/or Visa
- Financial Documentation
  Applicant must prove they can provide adequate financial support to cover the estimated expense of studies at WVU Tech for one full year (tuition/fees, living expenses, books & supplies, personal expenses, etc.).
  
  Applicant must submit official bank statement showing availability of the required amount. **The statement can be no older than six months, must be translated in English and show all Amounts in U.S. dollars ($).**

If student is being supported by a private sponsor, the sponsor must provide a letter declaring the intent of sponsorship in addition to the official bank statement.
If student is being sponsored by a government agency, the agency must provide official certification that the appropriate costs will be forwarded at the required level.

Transfer Applicants

- Applicants with less than 24 hours of college credit are also required to meet Freshman applicant requirements in addition to the Transfer requirements.
- Application for Admission
- Application Fee
- Official College Transcripts – 24 or more earned credit hours (equivalent to U.S. system) with a cumulative 2.0 or better college GPA on 4.0 scale
- Original Language of Issue, if International University Translated
- Evaluated College Transcripts
  - For international applicants from non-US schools, the required supporting documentation must include:
    - The original documents or certified (attested) copies of original documents in the original language of issue, and the official English translations of these documents
    - To ensure proper calculation of GPA and credit for courses taken, it is the responsibility of the Applicant to submit their academic records to an independent academic evaluator. While WVU Tech does not endorse a specific company or program, we suggest using World Education Services (www.wes.org). The required evaluation to have completed on your transcripts is the WES Basic Course-By-Course (with GPA & course-levels).
- If applicant attended a domestic university, translation and evaluation are not required.
- Proof of English Proficiency – TOEFL–61 or IELTS–6.0 required
- Students who are citizens of Canada, United Kingdom, Australia, Trinidad and Tobago, the British Virgin Islands or any other native English speaking countries are exempt from the TOEFL and IELTS requirements.
- ACT or SAT Scores – ACT composite score of 18 or SAT composite score of 870, (combined Critical Reading and Math scores taken prior to March 216) or 950 SAT composite (combined evidence based Reading/Writing and Math scores taken March 2016 or after) not including the writing portion
- Immunization Records
- Copy of Current Passport and/or Visa

Financial Documentation

- Applicant must prove he/she can provide adequate financial support to cover the estimated expense of studies at WVU Tech for one full year (tuition/fees, living expenses, books & supplies, personal expenses, etc.).
- Applicant must submit an official bank statement showing availability of the required amount. The statement can be no older than six months, must be translated in English and show all Amounts in U.S. dollars ($).
- If applicant is being supported by a private sponsor, the sponsor must provide a letter declaring the intent of sponsorship in addition to the official bank statement.
- If applicant is being sponsored by a government agency, the agency must provide official certification that the appropriate costs will be forwarded at the required level.

Application Deadlines

Spring Term – December 1
Fall Term – July 1
All documents received by WVU Tech in connection with international applications for admission become the property of the University. Under no circumstance will documents be duplicated, returned to the applicant, or forwarded to any agency or other college or University. Admission documents of applicants who do not enroll in the college will be destroyed after one year.

**GED and TASC Students**

Applicants who have completed the Test Assessing Secondary Completion (TASC) with a score of 500 on each of the five subtest categories or a General Equivalency Degree (GED) with an average standard score of 2250 (450) or above should have the following sent to the WVU Tech Office of Admissions:

- GED and TASC scores sent directly by the State Department of Education
- Transcript from high school last attended sent directly by the high school.

Applicants who earned the GED fewer than five years prior to applying must also have ACT or SAT scores sent to WVU Tech. Admission requirements for applicants who earned the GED five or more years prior to applying and have not attended another college may be waived.

**Homeschooled Applicants**

WVU Tech will accept admission applications from homeschooled students and those graduating from non-accredited high schools. If students are homeschooled or attended a non-accredited high school, they must submit a complete undergraduate application and SAT or ACT test scores. Homeschooled students must also submit course documentation as well as complete required courses to be eligible for admission. Immunization records must also be submitted before enrollment.

Homeschooled students must submit typed documentation (a manuscript or description) of their coursework. Minimally, this must include:

- The student’s name.
- A list and description of courses completed. Descriptions should include duration of study and content of the course.
- Grades earned for the courses completed.
- The number of credits earned for each course.
- Graduation date.

The courses must be broken down by 9th, 10th, 11th, and 12th grade years. The transcripts must bear the signature of the person who administered the curriculum.

Homeschooled applicants and applicants who attended non-accredited high schools must furnish documentation to validate learning in the academic core areas shown below. If the student completed units at an accredited high school or college, then transcripts of the units taken must be provided to WVU Tech.

The following high school unit requirements must be met for freshman admission:

- 4 units of English (including grammar, composition, and literature) 4 units of college preparatory mathematics (three units must be Algebra I and II and Plane Geometry.) Students interested in majors that emphasize math and science are encouraged to take math beyond Algebra II (such as pre-Calc, Calculus, and Statistics).
• 3 units of social studies (including U.S. History)
• 3 units of science (ALL units must be laboratory science.) Recommended units include: Biology, Chemistry, Physics, Anatomy, and Environmental Science
• 2 units of the same foreign language. American Sign Language is acceptable.
• 1 unit of fine arts (such as: Music, Band, Art, Theater, Dance, Drama, and Performance).

Upon completion of an application file with the required documentation, WVU Tech will review the entire application file of an individual who has been homeschooled or attended a non-accredited high school. Note: West Virginia residents who were homeschooled and are applying for WV PROMISE Scholarship or WV Higher Education Grant must have GEDs. Further questions regarding this should be directed to the WV Higher Education Policy Commission http://wvhepc.edu/

ACCESS (Attaining College Credits and Experiences while in Secondary School)

High school juniors and seniors may earn credit hours toward a degree at WVU Tech prior to their graduation. To be eligible for ACCESS admission, the high school junior or senior must:

• Complete the application for ACCESS Admission
• Submit a high school transcript
• Submit a letter of permission from your parent(s) or guardian(s)
• Submit a letter of recommendation from the guidance counselor or principal of the high school attended
• Have completed the sophomore year of high school
• Have earned a minimum average of B (3.00) for all high school courses attempted

Students selected for ACCESS admission may enroll for any freshman level class as long as the student has a sufficient academic background. Students enrolled under this program will receive grades and quality points as earned. Transcripts will be forwarded to any other college upon request of the student; however, the acceptance of these credits toward a degree will be determined by the individual college. Tuition and fees will be the same as those for regular college students.

Advanced Admission of High School Seniors

High school students who wish to spend their senior year at WVU Tech may apply for advanced admission as a full-time student. To be eligible for full-time advanced admission, the high school senior must:

• Complete an application for advanced admission as a full-time student
• Submit a high school transcript and ACT or SAT test scores
• Submit a letter of permission from your parent(s) or guardian(s)
• Submit a letter of recommendation from the guidance counselor or principal of the high school attended
• Have completed all requirements for graduation from high school except senior English
• Have earned a minimum average of 3.5 GPA or higher and a 26 ACT composite or 1170 SAT (combined Critical Reading and Math scores taken prior to March 2016) or a 1240 SAT Composite (combined evidence based Reading/Writing and Math scores taken March 2016 and after.)
Accepted students are admitted as full-time students with all of the rights and privileges offered other students. Cost of tuition and fees will be the same as those for all other full-time students.

**Early Enrollment Students**

Agreements are in place with several high schools in West Virginia by which students may enroll in selected college courses that also satisfy requirements for high school graduation. High school students who are interested in these early enrollment classes may obtain information about them from the high school counselor or the WVU Tech Office of Admissions.

**Veterans**

WVU Tech is approved by the WV Higher Education Policy Commission’s State Approving Agency for enrollment of veterans and dependents of deceased or 100% disabled veterans eligible for education benefits under current regulations. Those serving in the Army or Air National Guard or those on Active Duty or serving in a Reserve Unit may also qualify for educational assistance. The Office of the Registrar serves as the official institutional contact point for military and veterans’ programs and services.

New students who have not used their VA educational benefits must apply to the U.S. Department of Veterans Affairs and/or their National Guard or Reserve Unit to establish their eligibility for educational benefits. Those receiving funding through the U.S Department of Veterans Affairs must submit a Certificate of Eligibility and those funded under WV National Guard programs must submit a Notice of Basic Eligibility to the Veterans Affairs Office in order to be certified for educational benefits. Transfer students who have used educational benefits at another school must contact the Veterans Affairs Office and submit a Change of Program or Place of Training Form to receive benefits. All transfer credits must be reported to the Veterans Affairs Office and official transcripts must be submitted to the Office of Admissions. The student must also officially apply for WVU Tech admission and select a VA approved academic program before being certified to receive educational benefits. These guidelines also apply to students who are only enrolled in Extended Education courses. Continuing students need only verify their continued enrollment with the Veterans Affairs Office to continue their educational benefits. Please see techregistrar.wvutech.edu/va

It is the student’s responsibility to ensure that all tuition and fees are paid, unless they are enrolled under the Post 9/11 GI Bill (Chapter 33). Educational benefits checks should start arriving within 6 to 8 weeks after certification.

Any changes in approved course schedules including adding, dropping, and withdrawing from a course or courses MUST receive prior approval from the Veterans Affairs Office. Failure to obtain prior approval may jeopardize continued funding and may result in a significant overpayment of educational benefits that must be repaid to the VA. Students withdrawing from the institution must also contact the Veterans Affairs Office to avoid any overpayment. Any overpayment of education benefits will be calculated within the pay period in which the change occurred. Changes of academic program major MUST receive prior approval from the Veterans Affairs Office and U.S. Department of Veterans Affairs or appropriate Guard or Reserve Unit.

Students receiving educational benefits are expected to make satisfactory progress in attaining their educational goals and to attend their classes on a regular basis. The Veterans Affairs Office will closely monitor academic progress and class attendance. Any student not following these requirements may lose their benefits.
All forms necessary for educational benefits are available in the Office of the Registrar: Phone 304.442.3151 (Montgomery) 304.929-0337 (Beckley) – E-mail: Tech-Veterans-Affairs@mail.wvu.edu

Other Admission Categories

Regents Bachelor of Arts (RBA)

RBA Students need to complete the general WVU Tech admissions application. There are no application fees. For details, please see rba.wvutech.edu

WVU Tech’s Regents Bachelor of Arts (RBA) degree program is designed for adults who want to complete their college studies and obtain a bachelors degree. The program is affordable, flexible, and offers an opportunity to gain credits for work and life experience. Students tailor their academic course of study to meet individual needs.

Transient Students

A student wishing to take WVU Tech courses for transfer to another college may do so but, when registering, must present an official transient student permit from the college accepting the credits. This permit should include the number of semester hours permissible for transfer. The total cost of tuition and fees for the transient student is the same as that paid by regular WVU Tech students. Students from the WVU Morgantown campus or Potomac State College must complete a Dual Campus form if they will also be taking classes at their home institution, or a Change of Campus form if all courses during the term will be taken at WVU Tech. Forms can be found at techregistrar.wvutech.edu/forms.

WVU Tech students who wish to take courses at another institution for credit toward a WVU Tech program must meet with their advisor and complete a Transient Student Form. This form indicates the courses to be taken at the other institution and the course equivalencies when transferred to WVU Tech. This form must be submitted to the Office of the Registrar before the student attends another institution. If the student will be taking courses at WVU Morgantown campus or Potomac State College, they must either complete a Dual Campus form if they will also be taking classes at WVU Tech, or a Change of Campus form if all courses during the term will be taken at another campus. Forms can be found at techregistrar.wvutech.edu/forms.

Special Students

An individual who wishes to take courses, but not for a degree or certificate, is classified as a special student and may register for part-time studies, taking fewer than 12 hours of course credit in any semester. A special student who attempts 12 or more credit hours must apply for admission as a degree candidate by filing full credentials with the Office of Admissions. An overall grade point average of 2.00 or higher is required for admission. The tuition and fees for the special student is the same as those paid by regular college students.

An exception to this policy is granted to CTED students who are taking courses for certification for continuing employment, but who are not seeking a degree. These students are admitted under the 049T Career Technical Education Certificate major code, and are not bound by the 12 hour limit on special students.

Academic Common Market

The Academic Common Market provides opportunities for residents of other states
that are members of the Southern Regional Education Board to attend selected programs in West Virginia at reduced tuition rates. Application must be made through the higher education authority of the state of residence. Depending upon the state of residence, the WVU Tech Athletic Coaching Education and Aerospace Engineering 2+ programs are available through the Academic Common Market Program.

Visit [http://admissions.wvutech.edu/academic-common-market](http://admissions.wvutech.edu/academic-common-market) for details on the application process.

**Readmission of Students in Good Standing**

Students who left WVU Tech in good standing and who return to college after an absence of one or more terms, excluding summer, must apply for readmission.

**Readmission of Suspended Students**

First-level suspension is assigned when the student’s GPA falls below 2.0 for two consecutive semesters. The student on first-level suspension may request a waiver from the Dean of the college in question by way of written request and agreeing to an academic load not to exceed 14 credit hours. In cases when the waiver request is not approved, first-level suspension requires that the student sit out for a minimum of one semester before reapplying to WVU Tech.

Second-level suspension is assigned when the student returning from a first-level suspension fails to earn a 2.0 GPA in the next attempted semester. Second-level suspension cannot be waived and requires that the student sit out for at least one year before reapplying.

Third-level suspension is assigned when the student returning from second-level suspension fails to earn a 2.0 GPA in the next attempted semester. Third-level suspension cannot be waived and requires the student to sit out for at least four years before reapplying.

A student suspended at any level is entitled to petition the Committee on Classification and Grades of the Faculty Assembly for readmission. The Committee will evaluate the academic ability, character, circumstances, motivation, and any evidence presented by the student of improved circumstances or conditions that would support the application for readmission. If the Committee approves the petition, the student will return on academic probation and under whatever special circumstances the Committee deems advisable. The student would thus not have to reapply.

It is important to note that readmission to the college does not automatically mean readmission to the previous program.

**Policies Affecting Entering Status**

**Advanced Placement Program (AP)**

Academically qualifying high school juniors and seniors may earn college credit through the AP program of the College Entrance Examination Board. At the completion of the AP courses three-hour examinations will be administered. The final scores on the exam may demonstrate equivalency to selected WVU Tech courses. Details about the AP program are posted on the HEPC web page under academic affairs at [www.wvhepc.edu/](http://www.wvhepc.edu/)

**College Level Examination** Program (CLEP)
Incoming students who have gained a significant level of maturity through life experiences may receive college credit for their educationally-related experiences through the CLEP programs of the College Entrance Examination Board. Up to 35 hours of general education or elective credit may be earned through successful performance on CLEP general examinations. Although this program was designed primarily for adults, exceptionally well qualified high school seniors may elect the CLEP program. Courses for which credit may be earned through CLEP examinations are listed online at http://techregistrar.wvutech.edu/CLEPEquivalencies

**International Baccalaureate (IB)**

WVU Tech welcomes applications from students who have attended high schools that offer the international baccalaureate program. Credit given varies with level (standard or higher) and with score. The chart can be found at http://admissions.wvu.edu/admissions/equivalency.

**Academic Forgiveness**

WVU Tech allows academic forgiveness to some students who were not successful in their prior experiences at West Virginia colleges and universities. To be eligible the student cannot have been enrolled in any higher education institution for the four years prior to their admission to WVU Tech.

The petition for academic forgiveness is available on the Registrar’s web page at: techregistrar.wvutech.edu/academic_policies_and_procedures. The following conditions and rules apply:

- The request for academic forgiveness must be submitted during the term in which the student is initially readmitted. Assuming that all requirements are met, academic forgiveness would become effective on completion of the readmission semester.
- The official recommendation for academic forgiveness must be approved by the dean of the college the student plans to enter.
- Upon admission to WVU Tech under this policy, the student will receive credit for all courses completed with a grade of D or higher.
- The student admitted under the academic forgiveness policy must satisfactorily complete all coursework required by the respective program and academic college.
- Under no circumstances may the student admitted under the academic forgiveness policy complete fewer than 32 credit hours at WVU Tech prior to earning a degree.
- Students admitted under the academic forgiveness policy are expected to complete the required course work at WVU Tech. Any exceptions must be submitted to the department chair in writing.
- A student admitted under the academic forgiveness policy is subject to all regulations regarding probation, suspension, and expulsion.

If the application is approved, the changes will be applied to the student’s WVU Tech credits and transfer credits as applicable. Academic forgiveness is applied by excluding the GPA hours for which an “F” was earned. The “F” grades will still appear on the transcript, however, forgiven “Fs” will have an “E” notation and the hours will no longer appear in the GPA hours and will not be used in the calculation of the GPA. This can be viewed through the MIX/STAR academic transcript online once processed.
This policy pertains only to the calculation of the GPA required for graduation and does not pertain to GPA calculated for special academic recognition (such as graduation with honors) or to requirements for professional certification which may be within the province of licensure boards, external agencies, or the West Virginia Board of Education.

Academic Forgiveness for Regents Bachelor of Arts (RBA) Students

It is not necessary for students admitted to the RBA program to petition for academic forgiveness. WV HEPC policy (Regents Bachelor of Arts Degree Program Administrative Guidelines revised April 2007) dictates that all “F” grades received four years or more before admission to the RBA program are disregarded. Also, the only residence requirement for RBA students is that 24 credit hours must be earned within the state higher education system, including the community and technical colleges. At least 3 of the 24 graded hours must be completed at WVU Tech.

Developmental Courses

Developmental courses do not count toward Tech’s degree requirements or GPA calculations.
4. Expenses, Payments, Refunds, and Financial Aid

Educational Expenses

Educational expenses for which to plan include tuition, programmatic fees, student activities fees, room, board, and books. The schedule of costs for the current academic year at WVU Institute of Technology is available online at http://www.wvutech.edu/tuition.

The student enrolled in 12 or more credit hours is classified for purposes of tuition and fees as a full-time student. The student enrolled for fewer than 12 hours is classified for purposes of tuition and fees as a part-time student. The student who audits a course does not receive academic credit, but is charged the same as if the course was being taken for credit.

Personal expenses, such as transportation and entertainment, are over and above costs assessed by WVU Tech.

Residency Policy for Purposes of Tuition and Fees

Legal residents of West Virginia pay “resident” tuition at WVU Tech, and residents of other states and nations pay “non-resident” tuition. Residency policy is established in the WV Higher Education Policy Commission Series 25. https://www.wvhepc.org/resources/133-25.pdf

Students who believe they have been incorrectly classified, with respect to residency or who have had a change of status that affects their residency, may submit a petition for reclassification to the Provost. Appeals may be approved at that office or referred to the Residency Committee for further consideration. Appeals that are unsuccessful at that level may be taken to the President as the final level of appeal. The appeal form can be found at techregistrar.wvutech.edu/r/download/89328. It is important that petitioners include all requested documentation with the appeal form.

Paying Expenses

Student accounts may be paid online by electronic check or credit card through the West Virginia University STAR information system. Account details (current charges, payments previously made, and anticipated credits from financial aid and other third party-sources) are available at mix.wvu.edu (requires MIX ID and password).

Student accounts may also be paid by mail or in person at the Cashier’s Office, 212 Old Main, Montgomery, WV 25136 or at the Beckley Student One Stop Shop (Administrative Office) on the third floor of the Learning Resource Center. WVU Tech accepts payments by cash (do not send cash through the mail), check (payable to WVU Institute of Technology and bearing the Student ID number), money order, or cashier’s/bill pay check. Please note that a 2.25% processing fee will be added to all credit card payments beginning July 1, 2015.

Payments by check, money order, or draft are subject to the Non-Sufficient Funds Check Policy, a copy of which is available in the Cashier’s Office. A service charge of $25.00 is assessed for each check returned unpaid by the bank upon which it was drawn, unless the student can obtain an admission of error from the bank. If the check returned by the bank
was in payment of tuition and registration fees, the Cashier’s Office will declare the fees unpaid and registration cancelled. The return of the check unpaid constitutes late registration and a late fee may be levied. In such case, the student may be reinstated upon redemption of the unpaid check and payment of the $25.00 insufficient fund check assessment. The service charge on an unpaid, returned check is subject to change in accordance with state law. Please review Tuition and Fee Payment Schedule for important deadlines at: http://www.wvutech.edu/current_students/paymentschedule.

WVU Tech’s offers a convenient, low cost payment plan option called TuitionPay which is administered by Higher One. TuitionPay is a monthly installment payment plan that spreads the student’s tuition and fees over several months, interest free. There is a small enrollment fee based upon the type of plan that is chosen. To enroll in TuitionPay, please visit the following link: https://tuitionpay.higherone.com/TuitionPay/Welcome.aspx.

A 1.5% late fee will be assessed on all outstanding balances greater than and including $200 on the second day of each month. Therefore, it is important to allow 5-7 business days for payments to be received and posted.

Arrangements for payment from officially accepted scholarships, loan funds, grants, or contracts should be completed prior to the start of classes. Please refer to the academic calendar for specific dates.

Third-party billing may also be arranged. Should the third-party sponsor not pay all assessed charges, the student is responsible for paying the difference by the due date.

WVU Tech will withhold academic transcripts, diplomas, and official reports about the student’s record as long as the student has unpaid financial obligations to the Institution.

Students in debt for a previous semester or term are not permitted to register until all obligations have been paid.

The complete description of billing and payment options may be accessed at studentaccounts.wvu.edu/billing.

Refunds

Refunds of Tuition and Fees for Dropped Classes

If a student drops one or more classes the first week of the semester and has fewer than 12 hours after the drop, the following refund policies apply:

- Tuition, special, and refundable miscellaneous fees are refundable at 100% for the dropped classes during the first week of classes only.
- Refunds of tuition and fees for summer terms will be pro-rated based on the part of term.
- Laboratory fees are refundable at 100% during the first week of classes only and nonrefundable thereafter.
- Miscellaneous fees that are nonrefundable include transcript fee, graduation fee (if graduating), late payment fee, and reinstatement fee.

Classes dropped after the first week of the term will not be eligible for any refund of tuition and fees, including laboratory fees.

Refunds of Tuition and Fees for Withdrawal from the University
The student who officially withdraws from WVU Tech is eligible for a prorated refund of tuition, special fees, and certain miscellaneous fees, based upon the date of withdrawal. To withdraw officially and receive a refund, the student must submit a completed withdrawal form, available at the Office of the Registrar or on-line at techregistrar.wvutech.edu/forms. Every effort is made to process refunds within 30 days.

Refund schedules of tuition and fees for official withdrawal are determined by the WV Higher Education Policy Commission, and for the fall and spring semesters are posted online at studentaccounts.wvu.edu/refunds.

Refund periods for the summer semester, which are considerably abbreviated, are posted online at studentaccounts.wvu.edu/refunds.

Laboratory fees are refundable during the first week of classes only. Nonrefundable fees include the transcript fee, graduation fee (if graduating), late registration/payment fee.

Exceptions to the refund policy for withdrawal from the University include:

- 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 must submit a copy of their deployment orders to the WVU Tech Office of the Registrar.
- Students withdrawn administratively due to catastrophic illness or death will be provided a refund as approved by the Dean of Students or his/her designee.

Questions about WVU Tech’s refund policies should be directed to the Cashier’s Office.

If a student receives financial aid and s/he withdraws, s/he will be subject to the Refund and Repayment Policy. Federal regulations require that WVU Tech calculate eligibility for students who completely withdraw or are dismissed before completing the enrollment period. Students who receive all unsatisfactory grades (defined as at least one “F” and no passing grades) at the end of the grading period will be considered as unofficially withdrawn at the semester mid-point unless documentation is available that demonstrates continued class participation. Application of this policy may result in the necessity for a student to return financial aid funds to various Title IV federal aid programs.

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

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

1. Unsubsidized Direct Stafford Loan
2. Subsidized Direct Stafford Loan
3. Perkins Loan  
4. Direct PLUS (Graduate Student)  
5. Direct PLUS (Parent)  
6. Pell Grant  
7. FSEOG  
8. TEACH Grant

The return of financial aid may result in unpaid charges to WVU for tuition/fees and room/board. WVU will bill the student for any balance due. Students who owe a repayment to any federal financial aid program are no longer eligible for financial aid at any post-secondary institution. Eligibility may be regained after repayment is satisfied. If less Title IV aid was disbursed than was earned by the student, the student is entitled to a post-withdrawal disbursement within thirty days of withdrawal. Check with the Financial Aid Office for requirements.

**Refunds of Residence Hall Fees**

A resident who takes possession of an assigned residence hall space, and officially checks out in accordance with prescribed procedures will receive a refund that is pro-rated based on the number of days remaining in the term. Termination of the residence hall contract for disciplinary reasons may result in forfeiture of all prepaid fees.

**Refunds of Board Fees**

Board fees are refunded on a daily pro-rated basis.

No refunds are provided for housing and board due to closures of the institution as long as the residence halls are open and food service is being provided.

**Financial Aid – Types, Eligibility Requirements, and Deadlines for Application**

Grants, scholarships, loans, and employment are awarded through the Financial Aid Office to more than half of the students attending WVU Institute of Technology. Students seeking financial aid for a full academic year are encouraged to begin the application process as soon after January 1 as possible. Please note that the student applicant and/or the parent or guardian may be required to submit copies of federal tax forms to verify the accuracy of personal data. Students must be admitted to WVU Tech before financial aid can be awarded.

To apply for financial aid, first apply for a Federal Student Aid (FSA) ID, for student and a parent (if you are considered a dependent student for financial aid purposes) at [https://studentaid.ed.gov/sa/fafsa/filling-out/fsaid](https://studentaid.ed.gov/sa/fafsa/filling-out/fsaid). You will use the FSA ID to sign your online Free Application for Federal Student Aid (FAFSA), review your processed information, correct FAFSA data, and conduct other important business directly with the US Department of Education. Save the FSA ID you are issued because you will need it for future transactions. The FAFSA form is used to determine eligibility for the:

- Federal College Work Study (CWS)
- Federal Pell Grant
- Federal Perkins Loan
- Federal Stafford Loans
- Federal Supplemental Educational Opportunity Grant (SEOG)
- Higher Education Adult Part-Time Award
• West Virginia Promise Scholarship
• West Virginia Higher Education Grant

The Free Application for Federal Student Aid (FAFSA) information is generally available in the offices of high school guidance counselors by late November of each year. It may also be accessed online at www.fafsa.ed.gov. The completed applications must be postmarked by March 1 of the calendar year of enrollment (priority deadline date). It is necessary to submit the FAFSA form on an annual basis in order to continue being considered for federal and state financial aid programs.

The Financial Aid Office helps students and members of their families locate, apply for, process, and maintain eligibility for various types of financial aid. Members of the staff provide financial aid education through individual counseling, campus promotional events, and group presentations; they investigate and resolve individual financial aid questions; and they strive to provide timely and accurate financial aid processing that is in full compliance with all federal, state and University regulations.

The Financial Aid Office is located in 205 Old Main in Montgomery and in the student One Stop Shop (Administrative Office) on the third floor of the Learning Resource Center in Beckley.

WVU Tech will make every effort to facilitate financial assistance to eligible students. However, if the student and/or the parent or guardian fails to provide the necessary information in a timely manner, the University is not obliged to defer payment of fees.

**Types of Federal Financial Aid and Application Due Dates**

- **Federal College Work Study** - [www.ed.gov/programs/fws/](http://www.ed.gov/programs/fws/) - Recipients may work a maximum of 20 hours per week during full-time enrollment periods or a maximum of 40 hours per week during non-enrollment periods, such as breaks, holidays, and summers, providing there is evidence of intent to enroll the following semester. The rate of pay per hour is determined by the job description, with the lowest rate being equal to federal minimum wage. The priority deadline for FAFSA submission to the Processing Center is March 1.
- **Federal Direct Plus Loan** - [studentaid.ed.gov/types/loans/plus](http://studentaid.ed.gov/types/loans/plus) - The parent or guardian must authorize a credit check and, if approved, submit the Master Promissory Note (MPN). If the loan request is denied, the student may apply for an additional unsubsidized loan.
- **Federal Direct Subsidized and Unsubsidized Loan** - The Master Promissory Note (MPN) and entrance loan counseling must be completed by all first-time loan borrowers.
- **Federal Pell Grant** - Deadline to submit application form is the last day of enrollment in a given academic term.
- **Federal Perkins Loan** - A low-interest (5%) loan, the amount for which is determined by availability of funds - The Master Promissory Note (MPN) and entrance loan counseling must be completed by all first-time loan borrowers. Deadline for FAFSA submission to the Processing Center is March 1.
- **Federal Direct (Subsidized and Unsubsidized) Loan** - [www.aessuccess.org](http://www.aessuccess.org) - A low interest loan made available through the Department of Education.
- **Federal Supplemental Education Opportunity Grant (SEOG)** - Deadline for FAFSA submission to the Processing Center is March 1.
Other Types of Financial Aid and Application Due Dates

- **Campus Based Aid** – Decisions about campus-based aid are based upon consideration of both the FAFSA and the electronically submitted needs analysis materials. Deadline for application is April 1.
- **Institutional Scholarships** – Scholarship usually have unique and individual requirements and deadlines, and amounts awarded vary by program.
- **West Virginia Promise Scholarship** – [https://secure.cfwv.com/Financial_Aid_Planning/Scholarships/Scholarships_and_Grants/West_Virginia_PROMISE.aspx](https://secure.cfwv.com/Financial_Aid_Planning/Scholarships/Scholarships_and_Grants/West_Virginia_PROMISE.aspx) - Deadline for application by rising freshman students is March 1.
- **State Work-Study Program** – Similar to the Federal Work-Study Program except it is not based on need and 100% of wages are paid by the employer.
- **West Virginia Higher Education Grant** – The FAFSA form must be postmarked by March 1 of the calendar year of enrollment.

To the maximum extent practicable, WVU Tech provides employment that reinforces the educational programs or vocational goals of the college work-study students. Once notified of available positions by the various departments of the University, the Financial Aid Office staff has the sole responsibility for job placement.

Eligibility for Federal Financial Aid

To be eligible for, and keep, federal aid the student must:

- Enroll at least half time in an eligible degree or certificate program
- Be a U.S. citizen or an eligible non-citizen with a valid social security number
- Demonstrate financial need (except for certain loans)
- Make satisfactory academic progress as determined by the Satisfactory Academic Progress Policy for Financial Aid, which is available in the Office of Financial Aid
- Not fall into default on a Federal Perkins Loan, Federal Stafford Loan, or Federal PLUS loan at any school
- Not owe a refund on a Federal Pell Grant or a Federal Supplemental Educational Opportunity Grant or any other federal program at this or any other school
- Be registered with Selective Service, if male and between the ages of 18 and 25.

Satisfactory academic progress (SAP) is used to define successful completion of coursework to maintain eligibility for student financial aid. Failure to meet these standards will cause the aid recipient to be placed on financial aid probation or suspension.
Qualitative standard: must maintain a minimum cumulative 2.0 GPA.

1 to 28 hours – minimum GPA of 1.4
29 to 58 hours – minimum GPA of 1.7
59 to 88 hours – minimum GPA of 1.9
89+ hours – minimum GPA of 2.0

Quantitative standard: must complete a degree or certificate program within 150% of the average length of the program, and must successfully complete a minimum average of 67% of all attempted credit hours each semester.

At the end of the spring semester, a review of all financial aid recipients occurs to measure progress. All credits attempted in residence are reviewed, including credits attempted without financial aid. Students who initially fail to meet the minimum standards of progress will be placed on financial aid suspension.

Students who fail to meet the terms of SAP are suspended from financial aid eligibility, and are notified in writing. Students with mitigating circumstances may appeal for an extension period. Documentation of special circumstances, successful resolution of problem(s) causing academic distress and a program of study plan approved by the academic advisor must be submitted. Students will be notified of a decision in writing.

Students suspended from financial aid eligibility who do not have mitigating circumstances may be able to request reinstatement for financial aid. They must have made positive progress towards their degree since suspension from eligibility. Students may submit a Satisfactory Academic Progress Appeal Form for review. Students will be notified of a decision in writing.

If a student is enrolled in dual degree programs, seeking a second undergraduate degree or changing majors, an extension of the maximum timeframe provision of this policy may be requested. Requests will be evaluated on a case-by-case basis. The credits earned under all majors will be included in the calculation of attempted, earned, and maximum timeframe credits, as well as the GPA calculation. If a student continues to take classes towards a second major after completing all required coursework for a first degree that has not yet been awarded, aid may continue as long as SAP standards are met and the maximum timeframe is not exceeded.

All credits attempted and earned at any West Virginia University campus (WVU Tech, Morgantown or Potomac State) will be included when calculating the maximum time frame, GPA, and credit completion.

If a student is required to withdraw for military service, credit completion and maximum timeframe requirements will be waived for the semester of the student’s official withdrawal.

College credits earned while a student is in secondary education will be included in the cumulative credit completion ratio, GPA, and the maximum timeframe calculation.

Students who want to learn more about federal financial aid should check out the following website https://studentaid.ed.gov. Students with specific questions concerning federal financial aid should call West Virginia University Institute of Technology’s Financial Aid Department by phone at 304.442.3228 or 888.554.8324, or by e-mail at tech-financial-aid@mail.wvu.edu.
Determining Financial Need

The amount and combination of financial aid resources that can be awarded are usually governed by financial need. Need is the difference between the total cost of attending college and Expected Family Contribution (EFC), which is the amount the student and the student’s family will contribute toward this. The difference between total cost and the EFC is the projected financial need. Sources of revenue, including income, assets, and benefits (for example, unemployment benefits or Social Security), are all taken into consideration in determining financial need.

Transfer Students

Financial aid does not automatically follow the student who transfers to WVU Tech from another school (including West Virginia University). To continue receiving aid, the student should check with the Office of Financial Aid as soon as possible to find out what aid will be available. It is the transfer student’s responsibility to:

• Submit an academic transcript from all previous schools attended.
• Apply anew through the WVU Tech Office of Financial Aid.
• Change the federal school code to WVU Tech - 003825 online at www.fafsa.ed.gov.
• Notify any state grant programs of intent to transfer.

Notice of Financial Aid Award

An award letter will be sent after the student’s financial aid is arranged by the Financial Aid Office. The student who wishes to accept or decline any of the aid offered should do so within 30 days of receiving the award letter by replying online by way of the STAR Information System intranet account.

When pending financial aid is not available at registration, the student should arrange to pay the costs and request reimbursement. Please note that, to comply with federal regulations, it may be necessary to reduce some financial awards so that financial aid will not exceed the actual cost of education at WVU Tech.

Disbursement

Student aid is disbursed each term unless otherwise stated by scholarship donors or other third parties. Disbursements are electronically sent to WVU Tech for payment of tuition, fees, room, and board. Any overpayment is disbursed to the student by:

• E-Refund - Your funds can be transferred to any US bank of your choice by signing up for E-Refund. Refunds after July 1, 2016 will be processed in a new E-Refund portal that will be available for sign-up at http://studentaccounts.wvu.edu/refunds.
• Paper Check - If the above option doesn’t apply, a paper check will be mailed to the student. The check will be mailed to the mailing/local address on file in the STAR system. This process can take up to 14 business days.
Student Responsibilities

It is the student’s responsibility to:

• Review and consider all information about the school’s program before enrolling.
• Complete all application forms accurately and submit them on time to the right place.
• Accurately complete the application for student financial aid. (Errors can result in long delays in receiving financial aid. Intentional misreporting of information on an application for federal financial aid is a violation of law and considered a criminal offense that is subject to penalties under the U. S. Criminal Code.)
• Return all additional documentation, verification, corrections, and new information requested by either the Office of Financial Aid or the agency to which the application was submitted.
• Read, understand, and keep copies of all signed forms and relevant materials.
• Accept responsibility for all signed agreements.
• Notify the lender of any changes in name, address, or school status.
• Perform in a satisfactory manner the work agreed upon in accepting a College Work-Study award.
• Know and comply with the deadlines for application or reapplication for aid.
• Know and comply with the school’s refund procedures.
• Know and comply with the satisfactory academic progress policy for financial aid.
5. Academic Programs

Undergraduate Education at WVU Tech

Goals of Undergraduate Education at WVU Tech

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

Students at WVU Tech can expect to acquire:

- Basic foundation in liberal studies, with humanities, social sciences, natural sciences, and the arts integrated into degree programs, to help facilitate understanding of the world at large and competencies to deal with social, cultural, and technological change.
- Critical thinking and problem-solving skills; the ability to read and listen critically, ask appropriate questions, gather relevant information, and apply critical analysis to reach logical conclusions; the underpinnings of these skills are mathematical literacy and proficiency in oral and written communications.
- Proficiency in their major field of study, so that as graduates they are competitive in the job market or are prepared for graduate or professional schools.
- Knowledge, understanding, and appreciation of diversity (of languages, cultures, ideas, and peoples), desire to treat all persons in a manner consistent with social justice.
- Commitment to and practice of ethical behavior, responsible citizenship, and public service.

Official Program Designations

**Degree Program**: An area of study approved as such by WVU Institute of Technology and the WVU Board of Governors

**Official Degree Designations**: e.g. B.A. – Bachelor of Arts; B.S. - Bachelor of Science.

**Major**: Field of study within an approved degree program that has its own prescribed curriculum; a degree program may have more than one major.

**Minor**: Strategic work in an area of study; may not duplicate the major field of study; requirements for a minor are set by the granting academic unit; must include at least 15 credit hours of coursework, with a minimum of nine credit hours at the upper division level (course numbers 300 or above).

**Area of Emphasis**: A specific subject area of study which has limited course offerings within an approved degree program and major. Normally, a minimum of 12 credit hours and no more than 18 credit hours would be expected for an area of emphasis within a baccalaureate degree program.
**Undergraduate Certificate Program**: a coherent, specialized curriculum designed for students in search of a specific body of knowledge for personal/career development of professional continuing education. Normally a minimum of 12 and no more than 21 credit hours constitute a certificate program at the baccalaureate level.

**Academic Programs**

**College of Business, Humanities & Social Sciences**

<table>
<thead>
<tr>
<th>PROGRAM/MAJOR</th>
<th>DEGREE</th>
<th>MAJOR CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>B.S.</td>
<td>008T</td>
</tr>
<tr>
<td>Athletic Coaching Education</td>
<td>B.S.</td>
<td>025T</td>
</tr>
<tr>
<td>Aviation Management</td>
<td>B.S.</td>
<td>054T</td>
</tr>
<tr>
<td>Business Management</td>
<td>B.S.</td>
<td>010T</td>
</tr>
<tr>
<td>Career Technical Education</td>
<td>B.S.</td>
<td>011T</td>
</tr>
<tr>
<td>Criminal Justice</td>
<td>B.S.</td>
<td>012T</td>
</tr>
<tr>
<td></td>
<td>&gt;Correction Area of Emphasis</td>
<td>ET16</td>
</tr>
<tr>
<td></td>
<td>&gt;Law Enforcement Area of Emphasis</td>
<td>ET17</td>
</tr>
<tr>
<td>Forensic Investigation</td>
<td>B.S.</td>
<td>051T</td>
</tr>
<tr>
<td>Health Services Administration</td>
<td>B.S.</td>
<td>013T</td>
</tr>
<tr>
<td>History and Government</td>
<td>B.A.</td>
<td>014T</td>
</tr>
<tr>
<td>Interdisciplinary Studies</td>
<td>B.A./B.S.</td>
<td>016T</td>
</tr>
<tr>
<td>Psychology</td>
<td>B.A.</td>
<td>022T</td>
</tr>
<tr>
<td>Public Service Administration</td>
<td>B.S.</td>
<td>023T</td>
</tr>
<tr>
<td>Regents Bachelor of Arts</td>
<td>B.A.</td>
<td>024T</td>
</tr>
<tr>
<td></td>
<td>&gt;Business Area of Emphasis</td>
<td>01RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Creative Arts Area of Emphasis</td>
<td>02RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Cultural Studies Area of Emphasis</td>
<td>03RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Government Area of Emphasis</td>
<td>04RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Health Care Services Area of Emphasis</td>
<td>05RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Information Studies Area of Emphasis</td>
<td>06RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Labor Studies Area of Emphasis</td>
<td>07RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Sciences Area of Emphasis</td>
<td>08RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Social Sciences Area of Emphasis</td>
<td>09RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Organizational Management Area of Emphasis</td>
<td>10RT</td>
</tr>
<tr>
<td></td>
<td>&gt;Marketing Area of Emphasis</td>
<td>11RT</td>
</tr>
<tr>
<td>Sport Management</td>
<td>B.S.</td>
<td>026T</td>
</tr>
</tbody>
</table>

**Certificate Programs**

Undergraduate Certificate Program: Fraud Examination (Accounting)  CM01

**Non-Degree Programs**

<table>
<thead>
<tr>
<th>PROGRAM/MAJOR</th>
<th>DEGREE</th>
<th>MAJOR CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies</td>
<td></td>
<td>002T</td>
</tr>
<tr>
<td>Military Science</td>
<td></td>
<td>044T</td>
</tr>
<tr>
<td>Pre-Law</td>
<td></td>
<td>020T</td>
</tr>
<tr>
<td>Pre-Nursing</td>
<td></td>
<td>047T</td>
</tr>
<tr>
<td>Pre-Med</td>
<td></td>
<td>048T</td>
</tr>
<tr>
<td>Pre-Pharmacy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### WVU School of Nursing

Nursing  
BSN  
019T

### Leonard C. Nelson College of Engineering and Sciences

<table>
<thead>
<tr>
<th>PROGRAM/MAJOR</th>
<th>DEGREE</th>
<th>MAJOR CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering (2+2 with WVU)</td>
<td>B.S.A.E.</td>
<td>030T</td>
</tr>
<tr>
<td>Biology</td>
<td>B.S.</td>
<td>031T</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>B.S.Ch.E.</td>
<td>032T</td>
</tr>
<tr>
<td>&gt;Life Sciences Area of Emphasis</td>
<td></td>
<td>ET15</td>
</tr>
<tr>
<td>Chemistry</td>
<td>B.S.</td>
<td>033T</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>B.S.C.E.</td>
<td>034T</td>
</tr>
<tr>
<td>Computer Engineering</td>
<td>B.S.Cp.E.</td>
<td>035T</td>
</tr>
<tr>
<td>Computer Science</td>
<td>B.S.</td>
<td>036T</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>B.S.E.E.</td>
<td>037T</td>
</tr>
<tr>
<td>&gt;Electrical Energy Systems Area of Emphasis</td>
<td></td>
<td>ET18</td>
</tr>
<tr>
<td>Electronic Engineering Technology</td>
<td>B.S.E.E.T.</td>
<td>038T</td>
</tr>
<tr>
<td>Engineering Technology</td>
<td>B.S.E.T.</td>
<td>039T</td>
</tr>
<tr>
<td>&gt;Civil Emphasis</td>
<td></td>
<td>ET12</td>
</tr>
<tr>
<td>&gt;Environmental Emphasis</td>
<td></td>
<td>ET13</td>
</tr>
<tr>
<td>&gt;Mechanical Emphasis</td>
<td></td>
<td>ET14</td>
</tr>
<tr>
<td>Industrial Technology</td>
<td>B.S.</td>
<td>040T</td>
</tr>
<tr>
<td>Information Systems</td>
<td>B.S.</td>
<td>050T</td>
</tr>
<tr>
<td>Mathematics</td>
<td>B.S.</td>
<td>041T</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>B.S.M.E.</td>
<td>042T</td>
</tr>
</tbody>
</table>

### Non-Degree Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Engineering</td>
<td>029T</td>
</tr>
<tr>
<td>Pre-Engineering</td>
<td>028T</td>
</tr>
</tbody>
</table>

### Academic Minors

- Accounting  
- Biology  
- Business Administration  
- Chemistry  
- Computer Science  
- Criminal Justice  
- Economics  
- Finance  
- Fraud Examination  
- History and Government  
- Human Resources Administration  
- Marketing  
- Mathematics  
- Political Science  
- Professional Writing and Editing  
- Psychology  
- Risk and Insurance
Courses required to complete the minor are determined by the academic department in which the minor is offered and may not be taken on a pass/fail basis. Course substitutions may not be made without written approval of the academic department. A student may not complete a minor in his or her major field.

To assure that completion of the minor is appropriately recognized and posted to the transcript, the student should: (1) formally declare the intent to complete a minor by submitting an Academic Status Update for General Student form with the appropriate minor code entered (techregistrar.wvutech.edu/forms); (2) consult with the academic advisor to incorporate course requirements for the minor into schedule planning; and (3) when applying to graduate and receive a diploma, indicate the minor for which certification is requested.

Academic Advising

New students will be advised initially in the Student Success Center. As the student transitions into their chosen academic program, an advisor from the major department will be assigned to the student. Advisors assist students in understanding major and university requirements; major matriculation processes; course registration planning and processes; prerequisites; the General Education Foundation (GEF); probation and suspension; and academic options. WVU Tech students are required to meet with their academic advisors prior to registering for classes each term.

At the same time, though, students are also expected to become familiar with the Undergraduate Catalog, as it relates to their academic goals and standing. Students should be able to articulate the requirements of their major and of WVU Tech, the matriculation process for their major, plan for their scheduling and registration, use the WVU Tech website, and make full use of academic advising.

General Education Foundation (GEF)

In previous years WVU Tech offered general education through the General Education Curriculum (GEC), which as been replaced for the 2016-17 academic year with the General Educations Foundations (GEF) structure described below.

Purpose

The General Education Foundations (GEF) provides students with academic and intellectual breadth to appreciate the broad context of their actions, their choices, and their world, beyond their major field(s) of study. WVU Tech aims to help students build the foundational skills and knowledge necessary to reason clearly, communicate effectively, think critically, and contribute to society. The General Education Foundations (GEF) are designed to ensure that students meet these goals through inquiry-based learning across disciplines. In conjunction with a major field, and in consultation with their advisors, students will design programs of study that satisfy the GEF. The GEF works to fulfill the University’s goals of (1) creating well-rounded students with a broad base of skills and knowledge, (2) linking together the courses that students take at WVU Tech, and (3) instilling in students a permanent connection to learning and education, giving them the skills to learn what they need outside a formal educational environment. The GEF strives to
help students be thoughtful participants in a democratic society and to achieve the intellectual integration and awareness they will need to adapt to changes and meet challenges in their personal, social, and professional lives.

Policies Governing This Curriculum

1. Students will take between 31 and 37 credits, organized into eight foundation areas (F1 through F8).
2. Courses used to satisfy requirements of the GEF may also simultaneously satisfy major or other requirements for an undergraduate degree at WVU Tech. Colleges may elect to restrict the number of credits that can be shared between the GEF requirements and others required for their program(s). All undergraduate students must, at a minimum, complete 120 credits (or higher as established by their degree program) to earn a baccalaureate degree at WVU Tech.
3. In addition to fulfilling seven foundation areas (F1 through F7) (22-28 credits), students will choose a minimum of three courses (9 credits) to fulfill foundation area F8, the Focus. Working in consultation with their advisors, students will select these courses from the list of GEF courses and from any combination of disciplines. This Focus foundation area may be considered a flexible or concentrated area, depending on the courses chosen. Students should work with advisors to determine the best mix of appropriate classes for the Focus.

Descriptions of Requirements

GEF courses are grouped according to specific expected outcomes, which are in addition to the AACU LEAP skills that are recognized as institutional objectives.

F1. Composition and Rhetoric (3 or 6 credits)

Effective, concise, and clear use of English, in both speech and writing through various media, is essential to success both during the course of study and in a career or future professional life. The English Area ensures that students have understood the fundamentals of communicating in English and works in tandem with college- or program-based communication requirements.

-Students will demonstrate effective communication in English, completing ENGL 101 and ENGL 102 or ENGL 103 (WVU Course – not offered at WVU Tech).

F2A/B. Science & Technology (4-6 credits)

A fundamental grasp of the nature of science is essential for responsible, sustainable, and intelligent interaction with the world. Each of us must be able to evaluate scientific developments, technological advancements, and our evolving natural world in order to thrive.

-Students will apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions. Students must complete either two lecture courses for a minimum 6 of credits from F2A or one lecture/laboratory combination for a minimum of 4 credits from F2B. Students electing to fulfill the Foundation Area 2 requirement by completing F2B must successfully complete a science lecture course and its corresponding laboratory. Students who complete only
the lecture or laboratory component for one science combination and complete only the lecture or laboratory from a different lecture/laboratory combination will not satisfy the Area 2B requirement. However, the lecture/laboratory component for any courses not used to satisfy another GEF requirement can be used to satisfy the Foundation Area 8 (GE Foundation Focus) requirement.

F3. Mathematics and Quantitative Skills (3-4 credits)

Mathematics and quantitative skills are necessary in education, the workplace, and nearly every field of human endeavor. Quantitatively literate citizens must have the capacity to understand numerical aspects of daily life and apply critical reasoning to data.

-Students will demonstrate effective use of quantitative techniques and practical application of numerical, symbolic, or spatial concepts.

F4. Society & Connections (3 credits)

As global citizens, we must understand human behavior in its many forms and expressions, which may include methods of communication, familial and professional relationships, or our place in social, political, and economic systems. Civic knowledge and engagement are critical to individual, societal, and global survival.

-Students will demonstrate understanding and analysis of human behavior, societal and political organization, or communication.

F5. Human Inquiry & The Past (3 credits)

Human development reminds us of the continued importance of understanding events in a larger context of past experience, philosophical inquiry, or spiritual questing. A fundamental knowledge of our forebears, their successes, mistakes, obsessions, and weaknesses allow us to progress. A fundamental grasp of the realm of human thought, reason, ethics, or beliefs enables us to understand our world and ourselves.

-Students will interpret historical events or philosophical perspectives to identify patterns, develop analytical reasoning, apply methods of critical inquiry or expand problem-solving skills.

F6. The Arts & Creativity (3 credits)

Creativity, as expressed through works of art, is a defining human characteristic. Regardless of the medium, art communicates and connects us to human innovations and achievements of the past, present, and shared future. Artistic expression employs integrative and creative thinking that promotes transformative ideas capable of crossing disciplinary and cultural boundaries.

- Students will apply methods and principles of critical and creative inquiry to the production or analysis of works of art.
F7. Global Studies & Diversity (3 credits)

The world is more than our familiar neighborhoods and people who share our individual beliefs and traditions. We can come to appreciate our global society when we consider other ways of life, experiences, means of expression, histories, and modes of being. As we seek to expand our knowledge beyond the confines of our own experiences, we open up our minds and our worlds. Embracing human diversity enriches our understanding, including the understanding of what we have in common.

• Students will apply methods and principles of critical inquiry to explore global issues and cultural, linguistic, or experiential diversity.

F8. Focus (9 credits)

The GEF designates 9 credits (normally 3 three-credit courses) of Focus coursework. Working with their advisors, students will select three additional courses from the list of those approved for the GEF to maximize connections, incorporate additional competencies, and encourage true breadth of study. Such courses may lead to a minor or even a second major, and are intended to help students capitalize on the range and diversity of courses offered at WVU Tech.

Courses at WVU Tech Fulfilling the GEF Objectives

Composition & Rhetoric GEF F1 (6 Hrs) (Choose Two)

ENGL 101
ENGL 102

Science and Technology GEF F2A/B (4-6 Hrs)

F2A. Lecture Courses (Select Two)  Group F2B. Laboratory Science courses (Select One)

BIOL 105  BIOL 107  CS 101
BIOL 111  BIOL 112
CHEM 111  CHEM 112
CHEM 115  CHEM 116

PHSC 101  PHSC 102  PHYS 101  PHYS 102  PHYS 111  PHYS 112

3. Math & Quantitative Skills  GEF F3 (3 Hrs)

MATH 121  MATH 126A  MATH 126B  MATH 126C
MATH 123  MATH 126  MATH 155  MATH 156
MATH 128  MATH 150  MATH 156  STAT 211
ECON 225
4. Society & Connections  GEF F4 (3 Hrs)

<table>
<thead>
<tr>
<th>BIOL 122</th>
<th>GEOG 240</th>
<th>POLS 220</th>
<th>SOCA 221</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>JRL 101</td>
<td>PSYC 101</td>
<td>SOCA 232</td>
</tr>
<tr>
<td>COMM 102</td>
<td>MILS 101</td>
<td>PSYC 241</td>
<td></td>
</tr>
<tr>
<td>CSAD 270</td>
<td>MILS 102</td>
<td>SEP 271</td>
<td></td>
</tr>
<tr>
<td>ECON 201</td>
<td>MILS 201</td>
<td>SEP 272</td>
<td></td>
</tr>
<tr>
<td>ECON 202</td>
<td>MILS 202</td>
<td>SOCA 101</td>
<td></td>
</tr>
<tr>
<td>ECON 401</td>
<td>POLS 102</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Human Inquiry & the Past  GEF F5 (3 Hrs)

<table>
<thead>
<tr>
<th>HIST 152</th>
<th>HIST 261</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 153</td>
<td>HIST 277</td>
</tr>
<tr>
<td>HIST 203</td>
<td></td>
</tr>
</tbody>
</table>

6. Arts and Creativity  GEF F6 (3 Hrs)

<table>
<thead>
<tr>
<th>ARHS 101</th>
<th>ENGL 232</th>
<th>ENGL 241</th>
<th>ENGL 263</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 131</td>
<td>ENGL 233</td>
<td>ENGL 242</td>
<td>ENGL 272</td>
</tr>
<tr>
<td>ENGL 132</td>
<td>ENGL 234</td>
<td>ENGL 258</td>
<td>MUSC 111</td>
</tr>
<tr>
<td>ENGL 212</td>
<td>ENGL 235</td>
<td>ENGL 261</td>
<td>MUSC 115</td>
</tr>
<tr>
<td>ENGL 225</td>
<td>ENGL 236</td>
<td>ENGL 262</td>
<td></td>
</tr>
</tbody>
</table>

7. Global and Diversity Studies GEF F7 (3 Hrs)

<table>
<thead>
<tr>
<th>GEOG 102</th>
<th>POLS 260</th>
<th>SOCA 207</th>
<th>SPAN 204</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 108</td>
<td>PSYC 281</td>
<td>SOCA 235</td>
<td>WGST 225</td>
</tr>
<tr>
<td>HIST 179</td>
<td>SM 275</td>
<td>SPAN 101</td>
<td></td>
</tr>
<tr>
<td>HIST 180</td>
<td>SM 375</td>
<td>SPAN 102</td>
<td></td>
</tr>
<tr>
<td>POLS 103</td>
<td>SOCA 105</td>
<td>SPAN 203</td>
<td></td>
</tr>
</tbody>
</table>

8. Focus GEF F8 (9 Hrs)

| Objectives 2-7 |

**Academic Advancement**

**College Level Examination Program (CLEP)**

Students with significant learning associated with life experiences may earn up to 35 hours of general education or elective credit for this experience through the College Level Examination Program (CLEP). Although the CLEP program was designed primarily for adults, exceptionally well-qualified high school seniors are eligible to utilize the CLEP program as well. The following table lists the minimum CLEP test scores required for equivalency to WVU Tech courses.
The inventory of CLEP examinations is dynamic and changes over time. Some CLEP examinations may no longer be offered and may not appear in the above list. Students should check with the Office of the Registrar to determine if/how WVUIT will recognize the learning and credit associated with CLEP examinations that do not appear on the above list.

<table>
<thead>
<tr>
<th>CLEP Examination Name</th>
<th>WVUIT Equivalent Course</th>
<th>Minimum Score</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Examinations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Composition</td>
<td>ENGL 101</td>
<td>59</td>
<td>3</td>
</tr>
<tr>
<td>College Composition Modular</td>
<td>No Credit</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Humanities</td>
<td>Humanities Elective Credit</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>College Mathematics</td>
<td>Mathematics Elective Credit</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>Natural Sciences Elective Credit</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>Social Sciences and History</td>
<td>Social Sciences Elective Credit</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>Subject Tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Accounting</td>
<td>ACCT 201 &amp; ACCT 202</td>
<td>54</td>
<td>6</td>
</tr>
<tr>
<td>Information Systems</td>
<td>ISYS 101</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Introductory Business Law</td>
<td>BCOR 320</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Management</td>
<td>BCOR 370</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Marketing</td>
<td>BCOR 350</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Composition and Literature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Literature</td>
<td>ENGL 241</td>
<td>59</td>
<td>3</td>
</tr>
<tr>
<td>Analyzing and Interpreting Literature</td>
<td>ENGL 131</td>
<td>59</td>
<td>3</td>
</tr>
<tr>
<td>English Literature</td>
<td>ENGL 262</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>History and Social Sciences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Government</td>
<td>POLS 102</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>History of the United States I: Early</td>
<td>HIST 152</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Colonization to 1877</td>
<td>HIST 153</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td>History of the United States II: 1865 to the Present</td>
<td>HIST 153</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td>Human Growth and Development</td>
<td>PSYC 241</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Educational Psychology</td>
<td>Social Sciences Elective Credit</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Introductory Psychology</td>
<td>PSYC 101</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Introductory Sociology</td>
<td>SOCA 101</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Macroeconomics</td>
<td>ECON 202</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Microeconomics</td>
<td>ECON 201</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization I: Ancient Near East to 1648</td>
<td>HIST 101</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization II: 1648 to the Present</td>
<td>HIST 102</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Science and Mathematics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>BIOL 101 &amp; BIOL 102 (no credit for the associated labs)</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>Calculus</td>
<td>MATH 155</td>
<td>50</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry</td>
<td>CHEM 115</td>
<td>70</td>
<td>4</td>
</tr>
<tr>
<td>College Algebra</td>
<td>MATH 126</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Precalculus</td>
<td>MATH 123</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>World Languages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>French Language – Level 1</td>
<td>Humanities Elective Credit</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>French Language – Level 2</td>
<td>Humanities Elective Credit</td>
<td>52</td>
<td>6</td>
</tr>
<tr>
<td>German Language – Level 1</td>
<td>Humanities Elective Credit</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>German Language – Level 2</td>
<td>Humanities Elective Credit</td>
<td>52</td>
<td>6</td>
</tr>
<tr>
<td>Spanish Language – Level 1</td>
<td>SPAN 101 &amp; SPAN 102</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>Spanish Language – Level 2</td>
<td>SPAN 203 &amp; SPAN 204</td>
<td>63</td>
<td>6</td>
</tr>
</tbody>
</table>
Credit by Examination

A current student with sufficient proficiency in material covered by a specific course may apply for credit for this course by examination. A student who desires to obtain credit by examination must petition the chair of the program that provides the course to be allowed permission to attempt an examination for credit.

The chair of the concerned department shall determine the general proficiency of the student by preliminary examination. Assuming strong performance by the student, the chair may recommend to the committee on Classification and Grades that the student be given the opportunity to attempt examination for credit. If approved, the student will then sit for a comprehensive departmental examination that is administered by an examining board of one or more faculty, who are appointed by the department in which credit is being sought. Credit will be granted if a minimum grade of “C” is attained. The test and results shall be presented to the Classification and Grades Committee for final review (a fee of $20 per credit hour will be assessed).

A student who fails a departmental examination may not apply to retake it. Nor may a student request an examination on the basis of an audit course or one in which a grade less than “C” was earned.

Academic Credit for Military Training

Academic credit may be granted to veterans or National Guard or Reserve members for successful completion of formal service-school training programs on the basis of evaluations made by the Commission on Accreditation of Service Experiences and published in the American Council on Education’s (ACE) “Guide to the Evaluation of Educational Experiences in the Armed Services.”

Students who apply for such credit are required to submit official records such as the DD-214, transcript of in-service training, certificates or diplomas, or in-service training certified on DD Form 295 (Application for Evaluation of Educational Experiences during Military Service). Students may also request a record of their educational experiences (course work and occupational) associated with the Army, Marine Corps, Navy, and Coast Guard by submitting a request through the Joint Services Transcript Portal. Active duty National Guard and Reserve in listed Air Force personnel may request an official transcript of their education experiences through the Community College of the Air Force (CCAF).

Classification of Students by Class Rank

Class rank is based on the total number of credit hours shown on the official record in STAR at the beginning of each term. Classifications are as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>1-28 hours, inclusive</td>
</tr>
<tr>
<td>Sophomore</td>
<td>29-58 hours, inclusive</td>
</tr>
<tr>
<td>Junior</td>
<td>59-88 hours, inclusive</td>
</tr>
<tr>
<td>Senior</td>
<td>89 or more credit hours</td>
</tr>
</tbody>
</table>
Credit Hours

Academic advancement is measured by credit hours. Earning one credit hour generally means attending a 50-minute lecture class (one clock hour) each week of the full term. Laboratory credit of one credit hour generally means laboratory work of two to three clock hours per week. Course descriptions in the catalog show the number of credit hours for the course and the number of hours of lecture and/or laboratory per week. Credit hours for web-based courses are determined by comparison of the amount of material presented to that covered in an equivalent face-to-face course. Students are expected to devote additional hours to study outside of the classroom or laboratory for academic success.

Required Credits

WVU 191 First-Year Seminar, is required of all first-time, full-time freshman students and full-time transfer students enrolling with fewer than 29 credit hours. This course is designed to assist new students in transitioning smoothly to the Tech community. Students who do not pass this course (WVU 191) must continue to re-enroll until they pass the course.

Each degree program specifies its unique combination of required courses and electives. The pattern sheets that appear later in this catalog delineate these individual sets of requirements. All WVU Tech baccalaureate level programs must require at least 120 credit hours of course work.

Credit-Hour Load

The maximum credit-hour load for fall and spring terms is 20 credit hours, and the maximum allowable for summer is 14. Exceptions may be permitted after consultation with the student’s advisor. Registration for loads in excess of these maxima must be accompanied by a properly executed waiver form signed by the student’s advisor, department chair, and dean of the college.

Summer Term

WVU Tech has one summer term, which begins mid-May and ends in early August. Requirements for admission and work performance for the summer term are the same as for fall and spring terms. Courses are offered in a variety of time frames, e.g., one week, three week, six week, eight week, and 12 week. Summer offerings vary from year to year. For complete information concerning course offerings during the summer term, please visit courses.wvu.edu. Most summer courses have an on-line format.

Class Attendance

At WVU Tech, class attendance contributes significantly to academic success. Students who attend classes regularly tend to earn higher grades and have a higher passing rate. Excessive absences may jeopardize students’ grades or even their ability to continue in their courses. There is a strong correlation between regular class attendance and academic success. Faculty are strongly encouraged to require attendance in all 100-level classes.

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

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

Institutional excuses for college-sponsored activities are granted by the academic deans and Provost at WVU Tech, and are to be honored by each instructor. These excuses are defined for a particular period of time. Missed course work is to be made up in a timely manner, and the student is expected to be proactive in communicating with the instructor when missing class with an excused absence. Students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. Such make-up examinations should be of comparable difficulty to the original examination.

Instructors are urged not to schedule examinations or field trips on "Days of Special Concern" that are identified in the university and academic calendars.

**Final Examinations**

The last week of each regular term in the academic year is designated as finals week. Final examinations for the summer term are given on the last day of classes. Students who take one section of a multi-section course may be required to take a departmental final examination, given during the regular final examination period. All final examinations, unless otherwise approved by the Provost, must be given according to the official final examination schedule provided by the Academic Affairs Office. The only tests permitted during the week of classes preceding finals are final examinations for evening classes (classes meeting at 6 p.m. or later or classes meeting at 4 p.m. or later if the class meets once a week), practical laboratory tests, make-up examinations, and regularly scheduled short quizzes. If a student has more than three final examinations in one day, the student may make arrangements to take one of the examinations on a different day. Finals are held in classrooms regularly scheduled unless students are otherwise notified.

**Last Week of Classes**

Practical laboratory tests, make-up examinations, and regularly scheduled short quizzes are the only tests permitted for day classes during the week of classes preceding finals week unless the faculty member petitions the Provost and the petition is approved by the beginning of the second week of the semester in which the final exam is to be given.

**Auditors**

An auditor registers for a course and pays full fees for it; however, an auditor cannot receive academic credit for the course. The student who wishes credit for an audited course must let one semester pass before enrolling in it for credit. The student may change his or her status from audit to grade or grade to audit only during the registration period. Attendance requirements for auditors are determined by the instructor of the course. The
instructor may direct the Registrar to remove an auditor from a class list or grade report if attendance requirements are not met.

**Visiting Students**

Full-time WVU Tech students and those employed by the University (administration, faculty, or other regular University employees) may attend classes as visitors. Visiting students must have permission in writing from their advisor and/or supervisor, and all visiting students must have permission from the instructor of the course. A visitor will not receive credit and may not apply for credit by examination in a visited class.

**Transcripts**

Students desiring official copies of their college records should make requests to the Office of the Registrar at least one week before the transcripts are needed. Two weeks may be necessary at the beginning or end of a term. The first transcript is furnished without charge, but a fee must accompany each additional request. All financial obligations to the college must be satisfied before a transcript will be issued. Unofficial transcripts may be obtained by printing them from the STAR transcript page.

**Change of Schedule and Course Withdrawals**

Changes in a student’s schedule will be processed when a Change in Schedule form has been properly signed and returned to the Registrar. No additions to a student’s schedule may be made after the late enrollment period without the approval of an academic dean. All withdrawals after the first week of classes must be approved by an advisor.

A student must have satisfactorily completed the English sequence by the end of three semesters. A student, who has not passed ENGL 102, must take the proper English sequence consecutively and cannot withdraw from the course.

Students enrolled in English courses ENGL 090 or ENGL 091 may not withdraw from these courses. Credit for these courses may not be counted toward a degree program.

A student has two weeks after the day designated as midterm to withdraw from a course with a “W” grade. This date is given in the academic calendar. Note: Different dates will be in effect for part-of-term courses, e.g. eight-week or five-week courses. In an emergency or when extenuating circumstances justify an exception, an academic officer may recommend in writing that the student receive a grade of “W”.

Students may withdraw from the institution as late as the last day of classes. The official date will be shown in the academic calendar. A complete withdrawal is initiated by completing a Withdrawal Form, which is available from the Registration and Records Office.

During the summer, the deadline for withdrawal with a “W” is approximately three weeks in a six-week session and approximately seven weeks in a twelve-week session. These dates are given in the academic calendar.

**Changing Majors**

A student indicates a major at the time of application for admission and remains in that major until graduation or until receiving approval to change to another major. Such approval is granted when the student completes an Academic Status Update form; available
in the Registration and Records Office. Changes in major must be processed by the end of the first week of each term in order to be in effect for the current term.

Some majors – pre-professional, pre-engineering, general engineering – are not associated with degrees. It will be necessary for any student admitted under one of these majors to change to a degree program once they have earned 30 credit hours of college-level credit.

**Academic Progress and Grading**

**Courses**

Most courses taught at WVU Tech extend over one full term, although there are some courses that are exceptions to this norm (e.g., four-week or eight-week courses). Courses are considered successfully completed and credit for successful completion is awarded only when the student attends a class over its entire scheduled time frame and submits the necessary work to meet all requirements. Any exceptions to this practice must be approved by the Classification and Grades Committee. Courses taught during the summer term or as part-of-term courses have the same credit value as their counterpart courses that are taught during fall and spring terms. Web courses also earn the same credit as their counterpart courses that are offered in a face-to-face mode.

**Evaluation of Student Progress**

WVU Tech discourages evaluation by final examination only. Student progress should be measured and evaluated by a variety of methods that are consistent with the objectives of the course. The student is responsible for all materials presented or assigned in scheduled instructional sections. Students who do not complete all assigned work may earn an incomplete “I” or a failing grade “F”. If the grade is incomplete “I”, the student must submit a written contract to the instructor that is built upon a time line to finish the course within the next full term. A student has one regular term (excludes summer) in which to complete a course in which an “I” grade was awarded. Otherwise, the “I” grade will automatically be converted into an “F” grade.

**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
P pass (see Pass/Fail Grading below)
X auditor, no grade and no credit
CR credit but no grade
S satisfactory
U unsatisfactory (equivalent to F)
IF incomplete grade not removed by next regular term (computed as an F)
UF unforgivable F (not eligible for D/F repeat policy)
Pass/Fail Grading

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

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

A course taken on a pass/fail basis is graded as a graded course. The grade of “P” does not affect grade point average. However, any “F” grade affects a student’s grade point average regardless of whether it is a regular grade or a pass/fail grade, with the exception that no grades for developmental (90-level) courses are counted in computing the grade point average.

A student chooses the option of pass/fail grading for a course during the registration period. Once the registration period has ended, he or she may not change the grade status in the course.

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

Grade Points

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

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

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

- Courses with a grade of “W”, “P”, “S”, and “X” carry no grade value. The grade of incomplete “I” initially carries no grade value.
- The grade of “I” is given when the instructor of the course believes that the work is unavoidably incomplete or that an additional examination is justified. There must be a written contract between the student and instructor, including a timeline for completion of the work. To remove the grade of I, a student does not register for the course again; instead, he or she arranges to submit incomplete or supplemental work to the original instructor of the course.
When a student receives the grade of “I” and the incomplete grade is later removed, the grade point average is calculated on the basis of the new grade. If the “I” grade is not removed within the next full semester enrolled, the grade is treated as an “F” (failure). The Classification and Grades Committee may allow a student to postpone removal of the “I” grade if the student can justify a delay.

**Grade Point Average (GPA) Calculations**

All academic programs have baseline standards of scholastic quality that must be met or exceeded. Grade Point Average (GPA) is computed on grades earned in courses taken at WVU Tech and transfer institutions. GPA is based on all work for which a student received a letter grade other than “W”, “WU”, “P”, “S”, and “X”. A grade received in a developmental course is not calculated in the GPA.

To calculate grade point average:

1. Multiply the number of credit hours per course by the numeric value of its letter grade to obtain the number of grade points earned for each course.
2. Add all of the grade points earned for all of the courses completed.
3. Divide the total grade points earned by the total number of credit hours for all courses whose grades carry a numeric grade value.

The following example shows how to do it. Assume 16 credit hours completed earned the following grades:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Grade</th>
<th>Value</th>
<th>Credits x Value</th>
<th>Grade Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101</td>
<td>3</td>
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<td>3</td>
<td>3 x 3 =</td>
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<tr>
<td>Psychology 201</td>
<td>1</td>
<td>P</td>
<td>0</td>
<td>1 x 0 =</td>
<td>0</td>
</tr>
</tbody>
</table>

GPA = 39 divided by 15, for a grade point average of 2.6.

Note that a similar process may be used to calculate the GPA for all credits (including those transferred from other institutions), for credits earned at the institution, or for credits earned in the major.

**D/F Repeat Policy**

WVU Tech has a D/F repeat policy for undergraduate students who have not received the first baccalaureate degree. If a student earns a “D” or “F” in a course at WVU Tech or any school in the WV State System and the course is taken no later than the semester or summer term in which the student completes the sixtieth (60) hour (includes any class in which the student earns a grade as well as all transfer classes), the student may “D/F repeat” that course. The course can be repeated only at WVU Tech or another campus of West Virginia University. Students have only one opportunity to improve their original
grades under the D/F repeat policy. The new grade becomes the grade that counts toward the student’s cumulative GPA and credit hours for graduation, even if the repeated course grade is lower than the original grade in the course. The D/F repeat policy will be enacted any time an eligible course is repeated.

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

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

Other Repeating Courses

Courses repeated, but not eligible for the provisions of the D/F repeat policy, follow this procedure:

• The original grade is included in determining the overall GPA. It is excluded from earned or degree hours and is marked with an (A).
• The original grade is not deleted from the student’s permanent record.
• The second grade is entered on the student’s transcript and marked as included (I) in the semester that the course was repeated.
• Courses repeated more than once (including D/F repeats) are handled the same way with the final attempt carrying earned or degree hours. All attempts are used for determining GPA.

Grade Periods

Mid-semester and final grades are submitted through the STAR grade entry system each semester. Instructors are also encouraged to post early alert grades near the beginning of the semester. The mid-term grades are progress reports only. Students have access to mid-term and final grades through the MIX/STAR system. Grades are not mailed. A student having an error in a grade received or a grade omitted should contact the instructor immediately. An instructor who makes an error in reporting a grade may request a grade change by completing a form provided by the Office of the Registrar.

Grade Appeals

If a student wishes to dispute an hourly examination grade or any grade of importance, the student must see the faculty member involved by the next class meeting after receipt of the grade. If the dispute is over a final examination grade or a final grade, the student must see the faculty member within two weeks after the next term begins.

If not satisfied with the faculty member’s decision, the student is directed to make an appeal to the appropriate department/division chair within one week.

If still dissatisfied, the student is directed to make an appeal to the appropriate academic dean, stating the grievance in writing, within two weeks after the meeting with the department/division chair. The written appeal by the student to the academic dean must
include a statement of the facts and evidence to be presented by the student in support of the charges made with sufficient clarity to reasonably disclose the claim for a grade change.

Within two weeks after receiving the grievances in writing, the academic dean will bring together the student and the faculty member involved, and the faculty member’s department chair/division director for a hearing of appeal. A student who desires may choose a faculty member or another student as the student’s representative at the hearing.

If not satisfied with the results of the hearing, the student may, within one week, appeal the case in writing to the chair of the Academic Appeals Committee.

The Academic Appeals Committee shall consist of five faculty members and two student members determined in accordance with the respective constitutions of the Faculty Assembly and the Student Government Association. The Committee will elect its own chair.

Once a written appeal is made to the Committee by a student, the Committee will appoint a faculty member from the same area of study, or from an associated field in which the dispute is involved. The faculty member chosen by the Committee from the area of dispute will function in the same mode as any other member of the Committee for purposes of hearing the particular appeal case and is neither an advocate for the student or the faculty member involved in the appeal. The purpose for the selection is to insure that someone with expertise in the subject area of dispute will be a member of the Committee.

A member of the Academic Appeals Committee involved in such a dispute will be disqualified and the Committee will appoint a replacement.

Members of the Committee have the authority to determine whether or not an academic evaluation was “prejudicial, capricious, arbitrary, or discriminatory” and to recommend a change in grade. However, only the faculty members of the Committee have the authority to determine what the new grade shall be. The Committee will direct the Registrar to make the appropriate amendment(s) to the academic record of the student.

**Summer Grade Appeal Policy**

Any student whose May graduation was delayed by a grade of “D” or “F” in a required course may request a special summer procedure be instituted for grade appeals. If the faculty member is not on campus, the student may start the appeal process by notifying the department chair or dean within three (3) weeks of the posting date of final grades. For summer grade appeals, the Campus Provost, or his/her designee is empowered to appoint summer replacements for faculty representatives on the committee who are not available.

The Dean of Students will appoint student replacements as needed. Other than exceptions noted above, all other portions of the regular Grade Appeals Policy are in effect.

**Withdrawal from Classes**

**Deadlines**

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

**Procedures for Withdrawing from Individual Courses**

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

- The course load would be reduced below the minimal number of hours required to qualify for financial aid, housing, varsity athletic competition, or international full-time student status.
- The courses to be dropped are required to fulfill academic probationary conditions.
- The courses from which the student wants to withdraw might be co-requisite with other courses he or she is taking, or prerequisite to other courses required for the next term.

**Withdrawal from All Classes for the Term**

A student may completely withdraw from the institution any time before the last day designated for complete withdrawal from the university.

- Students who decide to leave WVU Tech during a term should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all financial obligations and for following established procedures. This includes the submission of appropriate information and signature of forms in person at the Office of the Registrar.
- Students who are unable to withdraw in person because of illness, accident, or other valid reasons must send notification of their request to withdraw along with all appropriate required information to the Office of the Registrar. The request to withdraw must be verified in writing along with a signature.
- If a student is an international student attending WVU Tech on a visa, the student must report to the Office of the Registrar.
- With the help of their academic advisors, students are responsible for determining how withdrawal from the institution may affect their future status, including such aspects as financial aid suspension for failure to make progress toward a degree, or violation of established eligibility for scholarships, fellowships, or financial aid.
- Students called to active military duty during any given semester have specific options regarding the credit hours.

**Financial Aid Refund and Repayment Policy**

Federal regulations require that WVU Institute of Technology recalculate eligibility for financial assistance for students who completely withdraw, drop out, or are dismissed before completing the enrollment period. Students who receive all unsatisfactory grades (defined as at least one “F” and no passing grades) at the end of the grading period will be considered as unofficially withdrawn at the semester mid-point unless documentation is available that demonstrates continued class participation. Application of this policy may result in the necessity for a student to return financial aid funds to various Title IV federal aid programs including Federal Pell Grant, Federal SEOG, Federal Perkins Loan, and William D. Ford Federal Direct Student and PLUS loans.
A student earns Title IV federal aid based upon the length of time the student remains enrolled during the enrollment period. Students who withdraw on or before completing more than 60 percent of the semester may be required to return a portion of federal financial assistance. The determination of 60 percent of the term is computed by dividing the total number of calendar days in the term into the number of calendar days completed as of the date of student withdrawal. Scheduled breaks of five consecutive days or more are excluded. The percentage of Title IV assistance which the student has earned is equal to this percentage of the term completed. If the withdrawal occurs after more than 60 percent of the term is completed, the percentage earned is considered to be 100 percent.

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

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

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

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

**Probation and Suspension**

Any student who’s overall or WVU Tech GPA falls below 2.0 will be placed on academic probation during the semester immediately following the drop in GPA. Transfer students who do not have a GPA of 2.0 or better may be admitted conditionally, and will be placed on a probationary status. The student is removed from probation when the overall and WVU Tech GPAs return to levels of 2.0 or greater.

A student who fails to improve their GPA while under academic probation becomes subject to suspension. A suspension means that the student may not enroll in courses at Tech, and that the student is not in good academic standing. Most institutions will not admit a student in this status. Courses taken at another institution while the student is suspended may not be transferred to WVU Tech except by petition to the Classification and Grades Committee.

A first-level suspension is given if a student is in probationary status and fails to earn at least a 2.0 GPA for any semester or summer term. A first-level suspension will require the student to wait for one semester before being readmitted. A first-level suspension may be waived by the dean of the college in which the student was enrolled.

A second-level suspension is given if a student is in probationary status, has returned from a first-level suspension, and fails to earn at least a 2.0 GPA for any semester
or summer term. A second-level suspension requires the student to wait for at least one year before being readmitted. A second-level suspension cannot be waived.

A third-level suspension is given if the student is in probationary status, has returned from a second-level suspension, and fails to earn at least a 2.0 GPA for any semester or summer term. A third-level suspension requires the student to wait for at least four years before being readmitted. A third-level suspension cannot be waived. A student who returns from a third-level suspension will be subject to another four-year suspension if they do not successfully remove themselves from probationary status.

Prior probationary history will be disregarded should a student who has successfully removed themselves from academic probation again fall into probationary status. Students have the right to appeal suspensions of any level to the Classification and Grades Committee. The burden rests with the student to prove extenuating circumstances that would justify the lifting of a suspension.

While a student is in a probationary status they may be enrolled for no more than 14 credit hours in a regular semester, may not participate in more than one extracurricular activity in a semester, and may not serve in the Student Government Association.

**Dean’s List**

To recognize academic excellence by students enrolled for 12 semester hours or more, the Dean’s List is published at the end of each regular semester. This list contains names of all full-time students whose grade average is 3.5 or higher.

Each student whose grade average in a particular semester is 3.5 or higher receives a certificate from the appropriate dean. Certificates distinctively marked “with highest honors” are awarded to students with a 4.0 average in a particular semester.

The calculation of a student’s end-of-term grade point average can be affected by his/her performance in a developmental course. Developmental courses are considered to be remedial and are identified by course numbers less than 100. If a student passes a developmental course, a grade of "P" will be recorded. There are no quality points associated with a passing grade for a developmental course, thus it does not impact the student’s term GPA. If a failing grade is earned in a developmental course, the failing grade will be included in the calculation of the student’s term GPA. A failing grade earned in a developmental course prevents a student from being considered for the Dean’s List.

**NOTE:** The 3.5 GPA requirement for Dean’s List is applicable to all students at the institution in the 2016-2017 academic year, regardless of the year of the catalog by which they are governed.

**Academic Misconduct**

**Academic Dishonesty**

Honesty among the members of any group is required for the smooth functioning of the group. In college, new experiences, awareness, and the academic life with its freedoms, frequently put individual honesty to the test. Without honesty, both individual and institutional goals would be compromised. Therefore, academic dishonesty will not be tolerated.
It is presumed that the student has gained a basic understanding of the meaning of the term dishonesty prior to entering college. Academic dishonesty includes any deceitful act committed to affect any student’s scholastic standing. All parties knowingly associated with the act are guilty of dishonesty whether or not they directly benefit from the act.

Examples of academic dishonesty include, but are not limited to: (1) plagiarism of an item submitted for a grade such as a question answer or an exam, quiz, or laboratory report, a submitted paper, experimental data, a computer program, or homework; (2) falsifying experimental data; (3) using work accomplished by another person; (4) assisting another person to cheat; (5) falsifying records; and (6) improperly accessing computer stored information.

While this policy will apply for all courses in the institution, each faculty member may establish a policy statement, within the framework of this policy, on cheating and resulting penalties for their courses, to be included in the course syllabus. It is a faculty and student responsibility to prevent academic dishonesty.

When academic dishonesty is suspected, the faculty member must discuss the matter with the student, normally within five business days of determining that an instance of dishonesty has occurred. A penalty should be assessed only when the evidence justifies such action or where the student provides a written admission of guilt. Possible penalties the faculty member may utilize range from failure on the item in question to dismissal from the course with a failing grade. In the event of dismissal from the course for reasons of academic dishonesty, a student may not withdraw to avoid a failing grade.

Process to Initiate a Charge of Academic Dishonesty

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

1) Notify the student in writing of the charge and the penalty and schedule a conference within five academic days of discovering the infraction.

2) Meet with the student to discuss the issue, to review all relevant materials, and to complete the Notification of Academic Misconduct (NAM) form. If the student accepts responsibility for both the charge and the sanctions, he or she signs the NAM, and the case is closed. Within five business days of resolution of the case, faculty should make three copies of the NAM form: one for the student, one for faculty records, and one for the Associate Dean of Students. If the student does not accept responsibility as charged, he or she may appeal to the chair of the department. If the student and chair reach a resolution, the chair should make three copies of the NAM form: one for the student, one for departmental records, and one for the Associate Dean of Student Life. These copies should be distributed within five academic days of resolution of the case. If the student and the chair do not reach a resolution, the student may appeal to the Associate Dean of Students who will refer the appeal to the Student Conduct Board. This appeal must be initiated within five academic days of the student’s meeting with the chair.

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

4) If the student disagrees with the decision of the Student Conduct Board, he or she may appeal to the Campus Provost, whose decision is final.
Graduation

Requirements for Graduation

A student becomes eligible to graduate when he or she completes the requirements of the University and major degree program according to the catalog in effect at the time the student first entered WVU Tech. With the consent of the student's advisor and department chair, a student may choose to meet the conditions published in a later catalog. However, degree programs reserve the right to change requirements for graduation. If such changes are made, they may, at the discretion of the program, be applied to students already enrolled, provided the new requirements do not impose extension of time for completion of a degree.

As a general rule, a student has seven years to complete degree requirements in a baccalaureate program. The student may become subject to additional requirements if this period is exceeded. If the student interrupts his/her program for a period greater than one academic year, he/she will be subject to the requirements of the catalog that is in effect when he/she returns. The student may petition the Classification and Grades Committee to continue under their original catalog in that event. The student has the option to follow a program as outlined in any catalog issued after his/her initial enrollment or readmission, but he/she must satisfy all requirements of the program as outlined in the selected catalog. Combining and/or selecting program requirements from several catalogs is not permitted.

Degree requirements vary from program to program. The minimum total of semester hours for a B.A. or a B.S. degree is 120. The student is responsible for completing all course requirements including any required core requirements listed in the pattern sheet and should schedule a graduation check with the Registrar during both of the last two semesters preceding graduation. If a substitution or waiver is approved by the advisor and dean, a signed waiver form must be on file in the Office of the Registrar. Candidates for graduation taking courses under the transient student status must see that a transcript is received in the Office of the Registrar no later than ten (10) calendar days after the Commencement date.

Graduation requirements for baccalaureate degrees from WVU Tech include the following:

1. Thirty of the last 36 hours taken in residence at WVU Tech. (exception will be made for students admitted to medical, dental, and law schools prior to meeting degree requirements provided they have completed a minimum of 92 undergraduate hours at Tech.
2. A minimum of 40 semester hours in upper-division courses.
3. Minimum 2.0 average in all courses attempted.
4. Minimum 2.0 average in all courses attempted at WVU Tech
5. Minimum 2.0 average in all courses attempted at WVU Tech, in major and minor, as indicated below:
   a. Engineering professional courses - all biology (for Chemical Engineering), chemistry, engineering, math, and physics
   b. Engineering Technology/Industrial Technology professional courses - all engineering technology, industrial technology, restricted technical electives, and required math and science
   c. Business and Accounting professional courses - all business, accounting, finance and economics. All Business Management and Accounting majors must sit for the Business Program Assessment Examination
d. Biology professional courses - all science, math (including statistics), nursing, and psychology

e. All other Baccalaureate Majors and Minors – all courses in major area and all courses within any elected minor area

Students admitted to professional schools may apply for graduation after successful completion of their first year providing that all other degree requirements have been met except for their major. A minimum of 120 semester hours, including professional school, is required.

**Application for Graduation**

A formal application for graduation must be filed in the Office of the Registrar by the date listed in the academic calendar. A degree will not be awarded until an application is filed. The application should specify all degrees, minors, and areas of emphasis that the applicant expects to be awarded.

**Graduation with Honors**

WVU Tech recognizes distinguished academic achievement by awarding degrees cum laude, magna cum laude, and summa cum laude. This distinction can be awarded on initial or second baccalaureates.

All candidates for a baccalaureate with a Total Institutional GPA and an Overall GPA of 3.8 or higher graduate summa cum laude. Those with a grade point average of less than 3.8, but equal to or above 3.6, graduate magna cum laude. Those with a GPA of less than 3.6, but equal to or above 3.4, graduate cum laude.

The grade point average for honors consideration for a baccalaureate is based on baccalaureate-level college work attempted through the final semester. This calculation includes baccalaureate-level college work attempted at institutions accredited by regional accreditors in the United States. Credit hours earned with a grade of P or S are not considered in the determination. Grades of F, however, are computed as hours attempted. The grade point average through the penultimate semester will be used for notations in the commencement programs. Students must meet residency requirements within the WVU system to be considered for graduation with honors.

The GPA for honors consideration for entry-level professional degrees is based on baccalaureate-level and professional-level work attempted through the last semester. This calculation includes baccalaureate-level and professional-level college work attempted at all regionally accredited higher education institutions attended. Credit hours earned with a grade of P or S are not considered in the determination.

Students entering and completing a second baccalaureate program following completion of the initial degree are eligible to receive the honors designation. Grade point averages for graduation with honors on second baccalaureates shall be computed on all baccalaureate-level work, excluding credit earned with a P or S. This includes work completed for the first degree as well.
Dual Degrees/Doubl e Majors

The dual degree is the concurrent awarding of two distinct baccalaureate degrees (i.e. B.A., B.S., B.S.E., etc.). Students pursuing two majors in different degree programs must be admitted into each degree program and fulfill all requirements for each degree. Students should pay particular attention to GEF requirements for each degree. Simultaneous completion of dual baccalaureate degrees requires students to complete a minimum of thirty hours beyond their primary degree. For a degree program that requires a minimum of 120 credit hours, students must complete a minimum of 150 credit hours to earn both degrees.

The double major is the awarding of one degree with two majors (e.g. a student who completes majors in English and history earns one B.A. degree). The completion of double or multiple majors must lead to the same degree and can only be achieved simultaneously. Students must be accepted into each major and fulfill all requirements of each major in addition to satisfying all institutional requirements. This may be completed within the minimum credit hour requirement for the degree or may require more credits than the degree minimum. Students who complete multiple majors within one degree will be awarded one degree, and the transcript will list the degree and each major.

Second Degrees

Some students decide to continue their undergraduate studies after receiving their first bachelor’s degree. Students who attempt to earn dual baccalaureate degrees from WVU Tech but do not fully complete requirements for both degrees simultaneously will become second degree candidates. Students who have previously earned a bachelor’s degree, whether from WVU or another institution, must complete a minimum of thirty hours beyond the first degree. Second degree candidates must meet all requirements for their degree program, major, college, or school and the University, including residence requirements. GEF requirements, however, are generally considered satisfied by completion of the first undergraduate degree. In the event that courses taken for the first bachelor’s degree are required courses for the second degree program, the college or school granting the second degree may approve course substitutions. In no circumstance may the coursework in the second degree program be fewer than thirty credit hours after the conferral of the first degree.

Students must have an assigned academic advisor in each department from which the student will earn a degree prior to registering for the last full term before graduation.

Students who receive a Regents BA degree may qualify for a second baccalaureate after one academic year.

Location for Study and Graduation

WVU Tech will continue to offer a full spectrum of programs and courses in Montgomery in Fall 2016, and Spring 2017. Students with few credits needed to meet degree requirements will likely be able to complete degrees in Montgomery by May 2017. However, this depends on the number of credits that are completed successfully towards that goal in each semester and whether classes are scheduled so that prerequisites can be satisfied. Students with a higher count of credits to complete their degree can study in Montgomery through Spring 2017, and then complete their degree requirements on the Beckley campus, starting in Fall 2017. WVU Tech will offer all of the courses that are needed to complete a degree on the Beckley campus, beginning in Fall 2017.
If a student plans to study towards a second WVU Tech degree or major, or add a minor, it will still be possible to pursue that plan on the Beckley campus from Fall 2017 onwards.

**Cooperative Education**

**General Description**

The Cooperative Education Program (Co-Op) alternates terms of on-campus study with terms of full-time employment. As an elective program, Co-Op presents students an opportunity to receive both practical and theoretical training in their chosen field of study over a five-year period. There are several advantages for students who elect to participate in this unique program. The Co-Op experience helps students decide early in their college career whether they wish to pursue their chosen academic major and helps students academically by adding new dimensions of understanding to their academic studies. The Co-Op Program also helps students establish contacts in their field, gain 12 to 20 months of practical work experience, and earn the funds to defray college education expenses.

**Co-Op Eligibility Requirements**

- Be in the process of completing the first year of a declared BA/BS academic curriculum as outlined in the college catalog
- Earn and maintain at least a 2.2 grade point average, although specific employers may require a higher grade point average
- Be enrolled as a full-time student
- Must be available for 3 work terms

A. **FRESHMEN**
   Students may apply to the program during their second semester of study. Upon successful completion of their freshmen year, students are eligible to accept a Co-Op assignment.

B. **UPPERCLASSMEN (30 credit hours)**
   Students who have completed more than 30 credit hours may apply to the program if grade point average, student status, and availability requirements are met.

C. **TRANSFER STUDENTS** may apply to the program during their first semester on campus. Upon successful completion of the first on-campus semester, transfer students are eligible to accept a Co-Op assignment.

**Co-Op Availability**

Co-Op work assignments are available to students enrolled in all BA/BS academic programs, depending upon the needs of potential employers.

**Co-Op Employment**

Cooperative Education participants, while on work assignments, are considered to be enrolled as full-time students at WVU Tech. Therefore, student status and financial aid, while not disbursed during Co-Op terms, are maintained. Participants will enroll in a Co-Op course for each work term and this enrollment will be documented on the student’s academic transcript.
Housing arrangements, while the responsibility of the student, are often coordinated by the employer. Each employer establishes his or her own policy on wage and benefit packages. Participants will receive term performance evaluations. There is no obligation on the part of the student or employer to continue employment upon graduation.

**Internship Program**

The Internship Program was created to better serve both employers and students when career related employment opportunities develop that do not meet the three-term cooperative education work requirement. To be eligible, students must meet the same academic requirements as stated for the Cooperative Education program.

**Departmental Practicums/Internships**

A number of programs require supervised Practicum/Internships. The Practicum/Internship is designed to combine theory and practice in a field integrated with the academic program. Examples include the Department of Social Sciences in the College of Business, Humanities and Social Sciences which require the Practicum Internship and Practicum Seminar for B.S. degree programs in Criminal Justice, Forensic Investigation, Health Services Administration, and Public Service Administration. The Practicum/Internship and Practicum Seminar are arranged with cooperating sponsors during the student’s senior year for up to 12 credit hours.
College of Business, Humanities And Social Sciences

General Information

The College of Business, Humanities and Social Sciences is one of two academic colleges at West Virginia University Institute of Technology. It includes many of the liberal and humanistic programs and courses commonly found in American colleges. These programs and courses make important contributions to the broad purposes of the institution, which endeavors to provide students with a knowledge of society, human experiences past and present, and the world in which we live; to foster an understanding and appreciation of the human, cultural, economic, political, environmental, ecological, and technological factors that have shaped human history and current concerns; and to develop the interests and creative capacities of students to their fullest extent.

The college offers courses necessary for the General Education Foundation (GEF). All four-year programs require between thirty-one and thirty-seven semester hours in GEF courses designed to meet the broad functions of the University and to assure students the breadth of knowledge deemed essential to an educated person. They include courses from the humanities, sciences, natural sciences, and mathematics.

The College of Business, Humanities and Social Sciences also has an important part in fulfilling the career-oriented functions of the institution, as well as preparing students for graduate/professional study. It provides a variety of programs, training persons to serve the business, industrial, and governmental needs of the state and nation and for service to the community through a wide range of online courses designed to meet the changing needs and interests of the region and the state.

Degree Programs:  

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<td>History and Government, B.A.</td>
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<tr>
<td>Interdisciplinary Studies, B.A./B.S.</td>
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<tr>
<td>Psychology, B.A.</td>
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<tr>
<td>Public Service Administration, B.S.</td>
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<tr>
<td>Regents, B.A.</td>
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<tr>
<td>Sport Management, B.S.</td>
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Minors

<table>
<thead>
<tr>
<th>Program</th>
<th>Code</th>
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<tbody>
<tr>
<td>Accounting</td>
<td>UT01</td>
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<tr>
<td>Business Administration</td>
<td>UT03</td>
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<tr>
<td>Criminal Justice</td>
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<td>Economics</td>
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<tr>
<td>Finance</td>
<td>UT06</td>
</tr>
<tr>
<td>Fraud Examination</td>
<td>UT07</td>
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<tr>
<td>History and Government</td>
<td>UT09</td>
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<td>Human Resources Administration</td>
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<td>Marketing</td>
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<td>Political Science</td>
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<tr>
<td>Professional Writing and Editing</td>
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<tr>
<td>Psychology</td>
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<tr>
<td>Risk and Insurance</td>
<td>UT18</td>
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<tr>
<td>Sport Management</td>
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**Certificate Programs**

- Undergraduate Certificate Program in Fraud Examination  CM01

**Non-Degree Programs**

- General Studies  002T
- Pre-Law  044T
- Pre-Nursing  020T
- Pre-Med  047T
- Pre Pharmacy  048T
- Military Science
ACCOUNTING – Major Code 008T
Bachelor of Science

The accountant is concerned with all phases of business or government operation and, through the application of accurate cost analysis and accounting techniques, provides management with the facts and figures necessary to the management decision-making process. The accountant’s decisions will determine the ultimate accuracy and validity of future management decisions.

The accounting curriculum at WVU Tech prepares the student for a broad range of positions in business and government. The program provides the student with strong accounting, business, & technical skills to be competitive in the modern technology-oriented job market. Graduates may pursue graduate work as well as seek such professional certifications as Certified Management Accountant (CMA), Certified Internal Auditor (CIA), Certified Fraud Examiners (CFE), and IRS Enrolled Agent (EA). The graduates are also qualified to sit for the Certified Public Accountant (CPA) Exam. However, to get the CPA certificate, they need an additional 30 undergraduate/graduate credit hours. Contact the department chair for details.

Note: Restricted electives must be taken from ACCT 461, ACCT 420, ACCT 421, ACCT 442, ACCT 451, and ACCT 491.

Program Learning Outcomes

On completion of the program, students will be able to:

• Explain & apply the Generally Accepted Accounting Principles (GAAP) & IFRS
• Demonstrate proficiency in manual and computerized accounting systems.
• Prepare, interpret and analyze financial statements.
• Demonstrate critical thinking, problem solving, and written communication skills.
• Discuss and apply the code of professional ethics for accountants.
# Accounting –Major Code 008T
## Bachelor of Science

### First Semester
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>WVUE 191</td>
<td>First Year Seminar</td>
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<tr>
<td>ACCT 201</td>
<td>Principles of Accounting</td>
<td>3</td>
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<tr>
<td>ENGL 101</td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
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<tr>
<td>MATH 123</td>
<td>Finite Math 1 (GEF F3)</td>
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<td>GEF F2B</td>
<td>Science and Technology</td>
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<td>BUSA 101</td>
<td>Introduction to Business</td>
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<tr>
<td>CS 101</td>
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<td>Composition &amp; Rhetoric (GEF F1)</td>
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<td>GEF F5</td>
<td>Human Inquiry &amp; The Past</td>
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<td>ACCT 311</td>
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<td>ECON 201</td>
<td>Prin. of Microeconomics (GEF F8)</td>
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<td>MANG 386</td>
<td>Business Statistics</td>
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<td>BCOR 320</td>
<td>Legal Environment of Business</td>
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<tr>
<td>GEF F4</td>
<td>Society &amp; Connections</td>
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### Fourth Semester
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<tr>
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<td>ECON 202</td>
<td>Prin. of Macroeconomics (GEF F8)</td>
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<tr>
<td>BLAW 420</td>
<td>Law for the CPA</td>
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<td>GEF F6</td>
<td>The Arts &amp; Creativity</td>
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<td>GEF F7</td>
<td>Global Studies &amp; Diversity</td>
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### Fifth Semester
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<tr>
<td>FIN 325</td>
<td>Financial Management 1</td>
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<tr>
<td>ACCT 432</td>
<td>Advanced Cost Management</td>
<td>3</td>
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<tr>
<td>BCOR 370</td>
<td>Managing Individuals &amp; Teams</td>
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</tr>
<tr>
<td>ACCT 415</td>
<td>Advanced Accounting</td>
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### Sixth Semester
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<th>Credits</th>
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<tbody>
<tr>
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<tr>
<td>ACCT 322</td>
<td>Accounting Systems</td>
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<tr>
<td>BCOR 350</td>
<td>Principles of Marketing</td>
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<td>FIN 326</td>
<td>Financial Management 2</td>
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### Seventh Semester
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<td>ACCT 441</td>
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<tr>
<td>ENGL 305</td>
<td>Technical Writing</td>
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<tr>
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<td>General Elective(s)</td>
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### Eighth Semester
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<th>Course</th>
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<tbody>
<tr>
<td>ACCT 450</td>
<td>Accounting Technology</td>
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<tr>
<td>ECON 331</td>
<td>Money and Banking</td>
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</tr>
<tr>
<td>BCOR 360</td>
<td>Operations &amp; Quant Bus Methods</td>
<td>3</td>
</tr>
<tr>
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<tr>
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**Note:**
1. Restricted electives must be taken from ACCT 420, ACCT 421, ACCT 442, ACCT 451, ACCT 461, and ACCT 491.
2. Prior to graduation, students must complete 15 hours of community service and take the ETS Business Test, which is offered once a year in the spring.

**Note:** Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours: **120**
Undergraduate Certificate Program in Fraud Examination – Code CM01

The undergraduate Certificate Program in Fraud Examination is offered online and is designed to prepare entry-level public accountants, governmental accountants, law enforcement officers, other business and finance professionals for positions in fraud analysis, fraud investigation, and compliance in business, government and nonprofit organizations. The program provides skills necessary to prevent, detect, investigate, and deter perpetration of fraud and help enhance their opportunity for advancement in several career fields.

The certificate program includes the following six courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 420</td>
<td>Fraud Examination</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 421</td>
<td>Fraud Management: Legal &amp; Ethical Issues</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 422</td>
<td>Adv. Fraud Investigations/Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 423</td>
<td>Information Security and Controls</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 348</td>
<td>Financial Statement Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 449</td>
<td>Case Studies in Fraud Examination &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td><strong>18 credit hours</strong></td>
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</table>

On completion of 18 credit hours, the student will be awarded an Undergraduate Certificate in Fraud Examination.

Courses are offered over a span of three semesters starting in fall semester as follows:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Fall Semester</td>
<td>*ACCT 420</td>
<td>Fraud Examination</td>
</tr>
<tr>
<td></td>
<td>ACCT 423</td>
<td>Information Security and Controls</td>
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<tr>
<td>Spring Semester</td>
<td>ACCT 422</td>
<td>Adv. Fraud Investigation/Analysis</td>
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<tr>
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<td>ACCT 348</td>
<td>Financial Statement Analysis</td>
</tr>
<tr>
<td>Summer (First 6 wks)</td>
<td>ACCT 421</td>
<td>Fraud Management: Legal &amp; Ethical Issues</td>
</tr>
<tr>
<td>Summer (Second 6 wks)</td>
<td>ACCT 449</td>
<td>Case Studies in Fraud Examination &amp; Management</td>
</tr>
</tbody>
</table>

*Must have completed the pre-requisite course ACCT 201 in order to enroll in ACCT 420
ATHLETIC COACHING EDUCATION – Major Code 025T
Bachelor of Science

The College of Physical Activity and Sport Sciences at West Virginia University offers a Bachelor of Science degree in Physical Education with an emphasis in Athletic Coaching Education (ACE) at WVU Tech. The ACE Program provides students with an opportunity to study coaching and the important roles coaches have in society. The program provides students with hands on practicum experience in coaching throughout the curriculum. Athletic Coaching Education graduates are employed as coaches, strength and conditioning specialists, and work in the health and fitness industry.

During the initial hours of course work, students may enroll in courses in the Pre-Athletic Coaching Education Program. Applicants must meet the following requirements for admission to the ACE major:

- Achieve a 2.5 GPA in all coursework at the time of application to ACE
- Achieve a “C” or better in all Probationary ACE required courses (ACE 105, ACE 106, ACE 168, ACE 256, ACE 265; ATTR 121, PET 124, PET 125, PET 175; and three PE activity courses (27 credits).
- All ACE probationary required coursework completed (with advisor’s approval, students may be admitted when they are within 9 credit hours of completing the Pre-ACE required coursework)
- 30 credits of GEF – MUST include the following (ENG 101, MATH 121 or MATH 126, BIOL 111, CS 101, PSYC 241, WVUE 191, SEP 271, and SEP 272)
- West Virginia Coaching Certification
- Sport First Aid Certification
- CPR/AED Certification
- Signed ACE Admission Application

Program Learning Outcomes

This program has the following specific outcomes:

- Graduates may coach on the collegiate level
- Graduates may apply for graduate school and graduate assistantships in coaching
- Graduates may work in area businesses and coach locally
- Graduates will recognize the importance and significance of the role of coaching
- Graduates will recognize the importance of continuing emotional, intellectual, and physical development throughout their lives

To graduate with an undergraduate ACE degree, students must have:

- Minimum 2.0 GPA
- “C” or better in all ACE probationary and major courses
- “C” or better in all minor classes
- ACE Admission Application and ACE faculty approval
- Negative result on a TB test
- Background check approval
- WVSSAC Coaching Certification (includes ASEP Coaching Principles, ASEP Sport First Aid and WV Rules and Regulations)
- Sport First Aid Certification (certification must be current once admitted into program and until graduation)
- CPR Certification (certification must be current once admitted into program and until graduation)
- AED Certification (certification must be current once admitted into program and until graduation)
- Completed one minor or area of emphasis (sport management, strength & conditioning, personal trainer, group fitness, sport communication, sport and exercise psychology, etc.)
- Apply for graduation with the Office of the Registrar and the Chair’s Office
# Athletic Coaching Education – Major Code 025T
## Bachelor of Science

### First Semester
- **ENGL 101**  Composition & Rhetoric (GEF F1)  
- **GEF F2**  Science and Technology  
- **GEF F3**  Mathematics & Quantitative Skills  
- **WVUE 191**  First Year Seminar  
- **ACE 106**  Intro to Athletic Coaching  
- **PE 220**  Striking/Fielding Games

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 101</td>
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</tr>
<tr>
<td>GEF F2</td>
<td>4-6</td>
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<tr>
<td>GEF F3</td>
<td>3</td>
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<tr>
<td>WVUE 191</td>
<td>1</td>
</tr>
<tr>
<td>ACE 106</td>
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<tr>
<td>PE 220</td>
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</table>

Total 15-17 credits

### Second Semester
- **ENGL 102**  Composition & Rhetoric (GEF F1)  
- **SEP 272**  Psych Perspectives of Sport (GEF F4)  
- **GEF F5**  Human Inquiry & the Past  
- **ACE 265**  Diversity & Sport  
- **ACE 168**  Sport Officiating  
- **PET 244**  Motor Learning & Performance

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 102</td>
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<tr>
<td>SEP 272</td>
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<td>ACE 265</td>
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<td>ACE 168</td>
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<td>PET 244</td>
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Total 16 credits

### Third Semester
- **PET 124**  Human Body: S & F  
- **ACE 315**  Sport for Excep. Athlete (GEF F7)  
- **GEF F8**  Focus  
- **ACE 105**  Nutrition for Coaches  
- **ACE 256**  Prin. & Prob. Of Coaching  
- **PE 221**  Invasion Games

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PET 124</td>
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<td>ACE 315</td>
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<td>GEF F8</td>
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<td>ACE 105</td>
<td>3</td>
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<tr>
<td>ACE 256</td>
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<td>PE 221</td>
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Total 15 credits

### Fourth Semester
- **GEF F8**  Focus  
- **ACE 368**  Sport Movement Analysis  
- **EXP 365**  Exercise Physiology I  
- **ACE 410**  Training Theories for Coaches  
- **ATR 121**  Sport Injury Control & Management  
- **PE 223**  Net/Wall Games

<table>
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<th>Course</th>
<th>Credits</th>
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<td>EXP 365</td>
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<td>ACE 410</td>
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<tr>
<td>ATR 121</td>
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<tr>
<td>PE 223</td>
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Total 14 credits

### Fifth Semester
- **ACE 369**  Basic Strength & Conditioning  
- **ACE 489**  Practicum Coaching Youth Sport  
- **ACE 491**  Professional Field Experience  
- **SM 426**  Liability in Sport

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACE 369</td>
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</tr>
<tr>
<td>ACE 489</td>
<td>3</td>
</tr>
<tr>
<td>ACE 491</td>
<td>3</td>
</tr>
<tr>
<td>SM 426</td>
<td>3</td>
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Total 15 credits

### Sixth Semester
- **ACE 450**  Career Planning in Sport  
- **ACE 488**  Practicum Coaching Excep. Athletes  
- **ACE 491**  Professional Field Experience  
- **SM 426**  Liability in Sport

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACE 450</td>
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<td>ACE 488</td>
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<td>ACE 491</td>
<td>3</td>
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<tr>
<td>SM 426</td>
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</table>

Total 15 credits

*Students may apply to the ACE major when all courses above have been completed successfully*

### Seventh Semester
- **GEF F6**  The Arts & Creativity  
- **ACE 369**  Basic Strength & Conditioning  
- **ACE 489**  Practicum Coaching Youth Sport  
- **ACE 491**  Professional Field Experience  
- **SM 426**  Liability in Sport

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GEF F6</td>
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<tr>
<td>ACE 491</td>
<td>3</td>
</tr>
<tr>
<td>SM 426</td>
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Total 15 credits

### Eighth Semester
- **ACE 450**  Career Planning in Sport  
- **ACE 488**  Practicum Coaching Excep. Athletes  
- **ACE 491**  Professional Field Experience  
- **SM 426**  Liability in Sport

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACE 450</td>
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<td>ACE 488</td>
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<td>ACE 491</td>
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<tr>
<td>SM 426</td>
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</table>

Total 15 credits

*For admission to ACE, all probationary coursework must be completed with a “C” or better and students must provide proof of First Aid/CPR/AED certification for admission. With advisor approval, students may be admitted to ACE when they are within 9 credit hours of completing the Pre-ACE required coursework.*

**NOTE:** Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours: 120-122
Aviation Management – Major Code 054T
Bachelor of Science

The Bachelor of Science in Aviation Management (BSAM) program will prepare graduates for employment in the aviation industry with emphasis on positions at regional airlines, including line pilots, instructor pilots, check airmen, and managerial roles. The degree allows students to obtain rigorous flight training in conjunction with the personal and intellectual growth afforded by a college program. These outcomes are achieved through successful completion of a solid foundation in business and management classes, in-depth aviation coursework, and the university’s comprehensive general education foundation (GEF).

Airline hiring standards and Federal Aviation Administration (FAA) regulations require professional pilots to have significant flight experience prior to employment. The BSAM program allows students to receive flight training early in the program and subsequently build additional flight experience as instructor pilots while completing the remainder of the degree online. It is possible for BSAM students to complete 1500 flight hours by graduation.

With the exception of the flight training component, all GEF, business, and aviation courses necessary for the degree are offered online through the WVU eCampus learning system. Courses involving flight are offered in conjunction with an approved flight training provider. Restricted electives must be approved by the academic advisor and selected from AVIA, ACCT, BCOR, MANG and MKTG courses.

The Bachelor of Science in Aviation Management curriculum requires 120 credit hours and is composed of four principle elements emphasizing breadth of knowledge and the development of technical and analytical skills. These include:

- 36 hours from the University GEF;
- 21 hours of upper division business core classes;
- 60 hours of aviation courses and electives including 24 hours of flight related courses; and
- 3 hours of electives.

Program Outcomes
- Graduates will obtain the FAA certifications as outlined in the program in a timely manner.
- Graduates will have a cumulative pass rate on FAA practical tests (flight tests) of 80% or above. Individual students will repeat no more than two FAA practical tests during the course of the program.
- Graduates will develop a thorough knowledge of aeronautical theories, practices, regulations, and procedures.
- Graduates will develop the ability to think critically and communicate effectively.
## Aviation Management-Major Code 054T
### Bachelor of Science

#### First Semester
- **AVIA 101**: Private Pilot 3
- **AVIA 191**: Professional Field Experience 3
- **AVIA 241**: Multi-Engine Rating 2
- **AVIA 281**: Professional Field Experience 1
- **AVIA 383**: Aircraft Systems 3
- **ENGL 101**: Composition and Rhetoric (GEF F1) 3

#### Second Semester
- **AVIA 201**: Instrument Rating 4
- **AVIA 281**: Professional Field Experience 3
- **AVIA 231**: Commercial Pilot 4
- **AVIA 385**: Air Traffic Control and Airspace 3
- **ENGL 102**: Composition and Rhetoric (GEF F1) 3

#### Third Semester
- **AVIA 281**: Professional Field Experience 4
- **AVIA 382**: Aerodynamics and Aircraft Perf. 6
- **AVIA**: Restricted AVIA Electives 13

#### Fourth Semester
- **AVIA 380**: Aviation Weather 3
- **AVIA 484**: Aviation Safety 3
- **GEF F2A**: Science and Technology 3
- **AVIA**: Restricted AVIA Elective 3
- **Elective**: Elective 3

#### Fifth Semester
- **AVIA 480**: Human Factors in Flight 3
- **BCOR 370**: Managing Individuals and Teams 3
- **GEF F2A**: Science and Technology 3
- **GEF F3**: Mathematics and Quantitative Skills 3
- **GEF F4**: Society and Connections 3

#### Sixth Semester
- **BCOR 350**: Principles of Marketing 3
- **GEF F5**: Human Inquiry & the Past 3
- **GEF F6**: The Arts and Creativity 3
- **GEF F7**: Global and Diversity Studies 3
- **Restricted Elective**: Restricted Elective 3

#### Seventh Semester
- **AVIA 489**: Aviation Law 3
- **GEF F8**: Focus 3
- **GEF F8**: Focus 3
- **MANG 330**: HR Management Fundamentals 3
- **MANG 350**: Leadership in Business 3

#### Eighth Semester
- **AVIA 486**: Aviation Mgmt. and Leadership 3
- **GEF F8**: Focus 3
- **MANG 422**: The Individual and the Organization 3
- **AVIA**: Restricted AVIA Electives 3
- **Restricted Elective**: Restricted Elective 3

*Conducted by the approved flight training provider

Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Restricted AVIA Electives include: **AVIA 301, AVIA 302, AVIA 304, AVIA 306, AVIA 351, AVIA 352, AVIA 381, AVIA 483, AVIA 485, AVIA 487, AVIA 488**

Restricted Electives include: **ACCT, BCOR, MANG, and MKTG courses.**

Total Credit Hours: **120**
BUSINESS MANAGEMENT – Major Code 10T
Bachelor of Science

The degree in business management provides a foundation in the areas of accounting, financial management, marketing, production management, organizational behavior, and economics. The program permits the student to obtain depth in these areas through restricted electives. Restricted electives are limited to 300 and 400 level classes with the following course codes: BLAW, BCOR, MANG, MKTG, ACCT, ECON, and FIN. A minimum grade of “C” is required in BCOR 350, BCOR 360, BCOR 370, and MANG 386. The program requirements for electives and restricted electives allow the student to obtain a minor in marketing, accounting, finance, economics, or human resources administration. Please note that several classes in the minors are offered only once every other year. To complete minor requirements, it is the student’s responsibility (1) to take classes when they are offered and (2) to meet course prerequisites.

Program Exit Competencies:
On completion of the program, students will be able to:
- Demonstrate proficient knowledge and skills within core business component
- Demonstrate proficiency in applying analytical abilities in business decision-making
- Demonstrate critical thinking and written communication skills
- Demonstrate the use of current business technology in basic decision-making applications
- Show the ability to work effectively in teams as a leader or a follower.
## Business Management – Major Code 010T
### Bachelor of Science

#### First Semester
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<thead>
<tr>
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<td>BUSA 101</td>
<td>Introduction to Business</td>
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<tr>
<td>ENGL 101</td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Finite Math 1 (GEF F3)</td>
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<td>WVUE 191</td>
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<td>Prin. of Microeconomics (GEF F8)</td>
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<td>CS 101</td>
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<td>Human Inquiry &amp; The Past</td>
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<td>ECON 202</td>
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<td>BCOR 370</td>
<td>Managing Individuals &amp; Teams</td>
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<td>BCOR 350</td>
<td>Principles of Marketing</td>
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<td>GEF F6</td>
<td>The Arts &amp; Creativity</td>
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<td>ENGL 305</td>
<td>Technical Writing</td>
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<td>MANG 330</td>
<td>HR Management Fundamentals</td>
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<td>MKTG 300-400</td>
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<tr>
<td>FIN 325</td>
<td>Financial Management 1</td>
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<tr>
<td>ACCT 331</td>
<td>Managerial Accounting</td>
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<tr>
<td>MANG 386</td>
<td>Business Statistics</td>
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<td>PSYC 101</td>
<td>Introduction to Psychology (GEF F4)</td>
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<td>MKTG 485</td>
<td>Global Marketing</td>
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<td>Elective(s)</td>
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#### Seventh Semester
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<tr>
<td>MANG 420</td>
<td>Business Information Systems</td>
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<td>ECON 301</td>
<td>Intermediate Micro-Economic Theory</td>
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<td>MANG 422</td>
<td>The Individual &amp; the Organization</td>
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<tr>
<td>BCOR 460</td>
<td>Contemporary Business Strategy</td>
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<td>MANG 375</td>
<td>Business Simulation</td>
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<td>GEF F7</td>
<td>Global Studies &amp; Diversity</td>
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<td>Restricted Elective(s)</td>
<td>6</td>
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<tr>
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</tbody>
</table>

### Notes:
1. Students must take the ETS Business Test, which is offered once a year in the Spring.
2. Students must complete 15 hours of community service.
3. Students must earn a "C" grade or better in BCOR 350, BCOR 360, BCOR 370, and MANG 386.

**NOTE:** Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours - 120
CAREER-TECHNICAL EDUCATION – Major Code 011T
Bachelor of Science

The Department of Career-Technical Education provides opportunities for Industrial, Technical, Occupational Foods and Health Occupations teachers to meet State Department of Education certification requirements and pursue advanced professional development. These opportunities are provided through special summer sessions on campus and classes throughout West Virginia during the fall and spring semesters. Students, who meet the state requirements, take advantage of advanced professional development opportunities, and meet General Education Foundation requirements, will be awarded the Bachelor’s Degree in Career-Technical Education. Enrollment is limited to those currently employed as teachers in a career-technical program area.

For additional information:

Department of Career-Technical Education
West Virginia University Institute of Technology
3414 Orndorff Hall
Montgomery, WV 25136
Telephone (304) 442-3125

Program Learning Outcomes

Teachers completing the Career-Technical Education program will be able to:

- Incorporate learning goals into instructional plans.
- Incorporate intended learning outcomes & learning objectives into instructional plans.
- Incorporate student characteristics into instructional plans for purposes of instructional design.
- Incorporate teacher characteristics into instructional plans.
- Apply a personal framework for teaching in development of an instructional plan.
- Plan instructional strategies that are consistent with intended learning outcomes and objectives.
- Select, develop, and modify instructional materials to meet intended learning outcomes and objectives.
- Determine appropriate classroom procedures and organizational strategies to support the instructional environment.
- Incorporate information from various sources in planning for instruction.
- Select assessment or evaluation strategies to measure learning outcomes, objectives, and instructional effectiveness.
- Maintain a positive learning environment to support mastery of learning outcomes and objectives.
- Communicate with students to provide a context for learning that is consistent with instructional plans.
- Organize students, materials, and the classroom environment in ways that are consistent with instructional plans.
- Manage the instructional environment to enhance student learning and development consistent with instructional plans.
- Implement a variety of instructional strategies and materials consistent with instructional plans.
• Utilize questioning strategies consistent with instructional plans.
• Provide verbal and/or nonverbal feedback to students.
• Evaluate the effectiveness of the instructional process.
• Evaluate student progress toward mastery of learning outcomes and objectives.
• Organize, interpret, and summarize evaluation data for instructional planning and delivery and management.
• Report student evaluation results to students, parents, and appropriate school administrative personnel.
• Use available evaluation results.
• Establish and implement a continuing education plan to meet personal and professional goals.
• Demonstrate management skills to carry out nonteaching responsibilities.
• Follow school policies, rules, and regulations.
• Demonstrate skills necessary to work with school committees and community groups.
<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>First Semester</td>
<td>ENGL 101</td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
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<td></td>
<td>CTED 485</td>
<td>Teaching Methods in CTE</td>
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<tr>
<td></td>
<td>GEF F5</td>
<td>Human Inquiry and the Past</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GEF F8</td>
<td>Focus</td>
<td>3</td>
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<tr>
<td></td>
<td>GEF F8</td>
<td>Focus</td>
<td>3</td>
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<tr>
<td>Second Semester</td>
<td>ENGL 102</td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
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<td>Society and Connections</td>
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<td>PSYC 241</td>
<td>Intro to Human Dev</td>
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<td>CTED 201</td>
<td>Intro to Career-Technical Education</td>
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<td>CTED 307</td>
<td>Computer Applications in CTE OR</td>
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<td>CTED 493</td>
<td>Advanced Computer Applications</td>
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<td>GEF F8</td>
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<td>CTED 308</td>
<td>Application of Basic Skills in CTE</td>
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<td>CTED 304</td>
<td>Safety in CTE</td>
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<td>GEF F2</td>
<td>Science &amp; Technology</td>
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<td>The Arts &amp; Creativity</td>
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<td>GEF F7</td>
<td>Global Studies and Diversity</td>
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<tr>
<td>Fourth Semester</td>
<td>CTED 409</td>
<td>Coord of Career-Tech Youth Act</td>
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<td>CTED 303</td>
<td>Org/Mgmt of Schools, Shops, Labs</td>
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<td>Occupational Analysis</td>
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<td>Math and Quantitative Skills</td>
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<td>CTED 423</td>
<td>Industrial Processes (Occ. Update)</td>
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<td></td>
<td>CTED 302</td>
<td>Course Construction &amp; Planning</td>
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<td>Coordination of Co-Op CTE</td>
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<td>CTED 305</td>
<td>Methods of Examination in CTE</td>
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<td>History &amp; Philosophy of CTE</td>
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<td>CTED 421</td>
<td>Teaching Special Students in CTE</td>
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<td>CTED 423</td>
<td>Industrial Processes (Occ Update)</td>
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<td>CTED 423</td>
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Note: Occupational Updating can be satisfied with a combination of CTED 422, CTED 423, CTED 424, and/or CTED 425.

NOTE: Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours – 121 – 123
The Criminal Justice program is designed to provide a multidisciplinary understanding of crime and the criminal justice system. The curriculum was developed in conformance with the Academy of Criminal Justice Sciences' Ad-Hoc Committee on Minimum Standards for Criminal Justice Education. The program prepares graduates for local, state, and federal law enforcement, corrections, courts, homeland security, investigation, and related careers. The program also offers an excellent background for those wishing to pursue graduate studies or law school. Among its notable features are courses in criminal law, law enforcement administration, criminal investigations, corrections, juvenile justice, research methods, and a semester long capstone practicum externship.

Core classes for the Criminal Justice major are: CMJS 120 Survey of Criminal Justice, CMJS 245 Criminal Law, SOCA 232 Criminology, CMJS 310 Law Enforcement Administration, CMJS 320 Courts and Judicial Systems, POLS 313 American Constitutional Law, SOCA 311 Social Research Methods, CMJS 475 Seminar in Criminal Justice-Capstone, and HUMS 489 Practicum Internship. In addition, twenty-one hours of restricted electives must be chosen from the following: FRNX 315 Interviewing Theories and Practice, FRNX 318 Crime Scenes, PSYC 281 Intro to Abnormal Psychology, ACCT 421 Fraud Management: Legal/Ethical Issues, ECON 225 Elementary Business and Economics Statistics, CMJS 133 Juvenile Justice, CMJS 134 Substance Abuse Policy, CMJS 240 Correctional Counseling, CMJS 250 Community Based Corrections, CMJS 410 Criminal Investigations, POLS 102 Introduction to American Government, POLS 400 Terrorism and National Security, SOCA 101 Introduction to Sociology, SOCA 207 Social Problems-Contemporary America, SOCA 302 Deviant Behavior, and SOCA 305 Social Stratification and Power in American Society. The core and restricted elective classes make up the professional courses for the Criminal Justice major. General electives must be approved by the student's academic advisor.

Students majoring in Criminal Justice may select an emphasis in Law Enforcement (CMJS 133 Juvenile Justice, CMJS 134 Substance Abuse Policy, POLS 400 Terrorism and National Security, CMJS 410 Criminal Investigations), or Corrections (CMJS 133 Juvenile Justice, CMJS 240 Correctional Counseling, CMJS 250 Community Based Corrections, and SOCA 207 Social Problems). An emphasis is not required for the B.S. in Criminal Justice. Criminal Justice majors qualify for a minor in Sociology.

Non-majors may minor in Criminal Justice by completing CMJS 120 Survey of Criminal Justice, CMJS 133 Juvenile Justice, and nine credits selected from the following: CMJS 310 Law Enforcement Administration, CMJS 320 Courts and Judicial Systems, CMJS 410 Criminal Investigations, ACCT 421 Fraud Management: Legal/Ethical Issues, HUMS 320 Public Administration, SOCA 313 American Constitutional Law, POLS 400 Terrorism and National Security, SOCA 302 Deviant Behavior, and SOCA 311 Social Research Methods.

In addition to fulfilling graduation requirements outlined in the pattern sheet, students must also achieve an overall GPA of 2.0 in program professional courses and participate in program assessment.

The Criminal Justice program has the following learning outcomes:

- The student will be able to specify the decision points and alternative outcomes at each stage of the criminal justice process.
- The student will be able to apply the scientific method to a criminal justice
research problem.

- The student will be able to effectively communicate in written and oral form.
- The student will become culturally competent and aware of diversity in the work environment.
## Criminal Justice - Major Code 012T
### Bachelor of Science

### First Semester

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<tr>
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<th>Course Title</th>
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<td>MATH 123</td>
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<td>GEF F2B</td>
<td>Science and Technology</td>
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<tr>
<td>GEF F5</td>
<td>Human Inquiry &amp; The Past</td>
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### Second Semester

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*May substitute a higher level math course

**A list of restricted electives is available in the department and in the catalog.

*** Prerequisite is MATH 123

****Prerequisite is ECON 225

**NOTE:** Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours: 120
# Criminal Justice–Corrections Emphasis-Major Code ET16
## Bachelor of Science

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**May substitute a higher level math course**

**A list of restricted electives is available in the department and in the catalog.**

***Prerequisite is MATH 123***

****Prerequisite is ECON 225***

**NOTE: Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.**

Total Hours: 120
Criminal Justice—Law Enforcement Emphasis — Major Code ET17
Bachelor of Science

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*May substitute a higher level math course

**Prerequisite is MATH 123

***Prerequisite is ECON 225

****A list of restricted electives is available in the department and in the catalog.

**NOTE:** Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours: 120
Forensic Investigation – Major Code 051T
Bachelor of Science

The curriculum of the program emphasizes breadth of knowledge and the development of analytical skills. Familiarity with fundamental theories and practices within the social and natural sciences, enhanced communication skills, and an understanding of the limits and uses of forensic techniques form a base from which the student develops either a plan for entry into a graduate program or a career path. The program emphasizes the historical evolution of investigative techniques and terminology and the use of scientific methods to reconstruct the recent past. The program is appropriate for those planning a career as investigators as well as current practitioners. The curriculum combines classroom instruction, hands-on laboratory and practical field applications, and practicum experience. Students have the flexibility to select courses tailored for future graduate school admissions. Among the program’s notable features are a course in research methods, a senior thesis, and a capstone practicum externship that places the student in a supervised setting for professional competence development.

The major requires 120 credit hours, including, completion of the Forensic Investigation Core curriculum consisting of foundational knowledge for investigators, documentation skills, crime scene and evidence analysis, legal parameters of investigation, interviewing and court room testimony. Students must earn a minimum grade of "C" in each FRNX course, maintain an overall 2.0 GPA for graduation, and complete 15 clock hours of department approved community service. The program requires completion of fifteen (15) hours of restricted electives selected with the approval of the student’s advisor and allowing the student to tailor an undergraduate program for graduate school admissions or for greater exposure to investigative courses. They include:

- ACCT 420 Fraud Examination
- CHEM 234 Organic Chemistry II
- CHEM 235 Organic Chemistry Lab
- CHEM 236 Organic Chemistry Lab
- CHEM 310 Instrumental Analysis
- CHEM 311 Inst. Analysis Lab
- COMM 100 Principles of Human Comm.
- FRNX 224 AFIS Systems
- FRNX 324 Forensic Anthropology
- FRNX 314 Questioned Documents
- FRNX 326 Investigative Intell
- FRNX 327 Sexual Assault Invest.
- FRNX 422 Cold Case Investigations
- FRNX 312 Digital Evidence
- SOCA 233 Criminology
- SOCA 302 Deviant Behavior
- SOCA 300 Cybercrime
- SOCA 400 Terrorism Natl Security
- POLS 400 Deviant Behavior
- HUMS 489 Additional practicum hours up to a total of 12.

Program Learning Outcomes

This program has the following specific outcomes:

- The student will have an understanding of the language, history, and traditions of the forensic discipline and the investigative professions.
- The student will be able to use critical thinking and problem solving in an investigative situation.
- The student will be able to effectively communicate in an interviewing, investigative, and in legal settings both orally and in writing.
- Students will have an appreciation of the ethical, legal, and regulatory issues impacting the decision making process.
- Students will have the technical skills necessary to conduct investigative work.
While WVU Institute of Technology is a division of West Virginia University, WVU Tech offers some programs that are separate and distinct from the WVU main campus in Morgantown. The WVU main campus offers a B.S. program in Forensic and Investigative Science (FIS) [http://forensics.wvu.edu/](http://forensics.wvu.edu/). The WVU Tech campus offers a B.S program in Forensic Investigation (FRNX). These are separate and distinct programs. The WVU-Morgantown FIS program's accreditation is through the American Academy of Forensic Sciences (AAFS) does not encompass the WVU Tech FRNX program. WVU Tech courses labeled FRNX will not transfer into the WVU-Morgantown FIS program.
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*higher level math courses may satisfy this requirement.
**a higher level chemistry sequence may satisfy this requirement. (eg. CHEM 115, CHEM 116)
*** as needed to satisfy the 120 hour minimum for the degree

Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours – 120-123
HEALTH SERVICES ADMINISTRATION-Major Code 013T
(With Minors)
Bachelor of Science

The Department of Social Sciences and Public Administration offers an interdisciplinary major in Health Services Administration leading to the Bachelor of Science degree. The program recognizes that many agencies require personnel with health skills combined with a strong background in both the sciences and management for research, service, and administrative positions.

Career opportunities exist in a wide variety of organizations because health care broadly impacts society. Possible settings include: hospitals, clinics or ambulatory care centers; mental health agencies; prepaid health maintenance organizations; health insurance companies; federal, state, and local governmental health agencies; and health specialty vendors.

The program promotes an interdisciplinary perspective in health services administration that encompasses sciences with a public health emphasis and an orientation in business principles. Students may use restricted electives to declare several minors or emphasis areas. With careful planning, a student may minor in one or more of the following: history and government, economics, business administration, political science, sociology, or human resources administration.

Distinctive features of the program in Health Services Administration include a wide assortment of classes in business, political science, economics, and other applied areas. Program courses include Introduction to Health Care Organizations, Health Services Planning, Health Services Law and Legislation, and Illness and Health Care. In addition, each student must complete a semester-long supervised capstone experience in which the student gains academic credit for administrative exposure in a cooperating health related organization.

For students holding an associate degree or a diploma from a three-year nursing program, the program participates in articulation agreements providing credit for coursework taken at the community college level toward achievement of the B.S. degree.

**Program Learning Outcomes**

This program has the following specific outcomes:

- The student will demonstrate a broad based understanding of the dynamics of the health care industry, including familiarity with a variety of care delivery organizations, types of care delivery methods, and fiscal responsibilities.
- The student will be able to apply critical thinking and higher level analytical skills to problems and issues in their career fields.
- The student will be able to communicate effectively in oral and written form and have the specialized vocabulary utilized in the health care industry.
- The student will become culturally competent and aware of diversity in the work environment.
### Health Services Administration – Major Code 013T
**Bachelor of Science**

#### First Semester

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<thead>
<tr>
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<td>GEF F7</td>
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<td>Focus</td>
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<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 207</td>
<td>**Social Problems or Race Relations</td>
<td>3</td>
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<td>SOCA 235</td>
<td>**Race Relations</td>
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<tr>
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<td>Intro to Health Care Organization</td>
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<td>POLS 220</td>
<td>State &amp; Local Government (GEF F8)</td>
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<td>Introduction to Welfare</td>
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<td>HUMS 430</td>
<td>Medical Ethics</td>
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<td>HUMS 430</td>
<td>Public Administration</td>
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<td>HUMS 330</td>
<td>Health Insurance</td>
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<td>HUMS 410</td>
<td>Fund Health Care Administration</td>
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<td>HUMS 421</td>
<td>Principles of Macrohealth Finance</td>
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<td>Long Term Care Administration</td>
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<td>ECON 441</td>
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<td>HUMS 489</td>
<td>*Practicum Capstone Internship</td>
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<td>Seminar in Non-Profit Administration</td>
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*Restricted electives may be taken from courses in accounting, economics, labor studies, political science, sociology, human services, or other courses with consent of the advisor. The student may apply restricted electives to an emphasis or minor in the College of Business, Humanities and Social Sciences.

(At the discretion of the advisor, the practicum may be reduced with the addition of restricted electives.)

**May choose SOCA 235 Race Relations.

**Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.**

Total Hours - 120
HISTORY AND GOVERNMENT-Major Code 014T
Bachelor of Arts

The History and Government program has three essential purposes. First, it is designed to provide the student with insights into historical time periods of the nation and the world, with special emphasis upon political, social, economic, and technological changes. Secondly, it provides a strong background for graduate study in history and related fields, careers in government, services, and some areas of business, and positions with historical societies and museums. Thirdly, for students interested in attending law school, the program meets and exceeds the criteria for pre-law curricula established by the American Association of Law Schools. Foreign Language Option: Students are encouraged to take 12 hours of foreign language. These hours, with departmental approval, can be taken in lieu of history and literature courses, or the geography elective. Majors and non-majors with 12 hours of history courses may qualify for membership in Phi Alpha Theta, the national history honorary.

Entrance Exam: All students entering the history program must take the departmental entrance exam. This exam is for assessment purposes only, no passing score is required.

Assessment Criteria: Students must successfully complete History 484 and an assessment examination to fulfill graduation requirements. It is the student’s responsibility to contact their advisor in the first two weeks of the final semester to register for the exam.

History and Government Minor: 21 semester hours: HIST 179 and HIST 180, OR HIST 152 and HIST 153, 9 hours of History 200+ courses, POLS 102, and POLS 300+.

Program Learning Outcomes

In addition to the general learning outcomes listed elsewhere in the catalog, graduates of this program should be able to:

• Demonstrate a general knowledge of the facts, concepts, and approaches of history.
• Critically analyze and assess primary sources.
• Critically analyze and assess secondary sources.
• Conduct original historical research and report results orally and in writing.
• Produce historical essays that are coherent, grammatically correct, and use proper historical documentation.

Note: With approval of the advisor, restricted electives may be selected from the following disciplines: history, economics, political science, literature, sociology, business, philosophy, or psychology.
# History and Government
**Major Code 014T**
**Bachelor of Arts**

## First Semester
- **WVUE 191** First Year Seminar 1
- **HIST 152** Growth of the Am Nation (GEF F5) 3
- **ENGL 101** Composition & Rhetoric (GEF F1) 3
- **GEF F3** Math & Quantitative Skills 3
- **GEF F2B** Science and Technology 4
- **Elective** 1

## Second Semester
- **HIST 153** Modern America 1865-Present 3
- **ENGL 102** Composition & Rhetoric (GEF F1) 3
- **GEF F4** Society and Connections 3
- **GEF F6** The Arts and Creativity 3
- **POLS 102** Intro to American Government 3

## Third Semester
- **HIST 179** World History to 1500 3
- **GEOG 108** Human Geography 3
- **GEF F7** Global Studies and Diversity 3
- **GEF F8** Focus 3
- **GEF F8** Focus 3

## Fourth Semester
- **HIST 180** World History since 1500 3
- **HIST 277** Rev. in Science and Technology 3
- **SOCA 101** Introduction to Sociology 3
- **POLS 260** Intro: International Relations 3
- **GEF F8** Focus 3

## Fifth Semester
- **CSAD 270** Effective Public Speaking 3
- **POLS 300+** Political Science Elective 3
- **HIST 203** Intro to Medieval Europe 3
- **Literature or Foreign Language** 3
- **Restricted Elective (300-400)** 2

## Sixth Semester
- **POLS 300+** Political Science Elective 3
- **ENGL 300+** English Elective 3
- **HIST 261** Recent America: US since 1918 3
- **PSYC 351** Topics in Social Psychology 3
- **Restricted Elective (300-400)** 3

## Seventh Semester
- **HIST 300+** History Elective 3
- **ECON 300+** Economics Elective 3
- **HIST 300** Greece and Rome 3

## Eighth Semester
- **HIST 473** Appalachian Regional History 3
- **HIST 300+** History Elective 3
- **HIST 300+** History Elective 3
- **HUMS 480** Grant Writing and Documentation 3
- **Restricted Elective (300-400)** 3
- **Assessment Exam*** 3

*Admission only/no passing grade required.

**Courses such as History 484 are offered once every four-semester cycle**

***Must be taken last semester

See GEF Curriculum for more on GEF level requirements

With approval of the advisor, restricted electives may be selected from the following disciplines: history, economics, political science, English, sociology, business, philosophy, or psychology.

Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Credit Hours: **120**
INTERDISCIPLINARY STUDIES- Major Code 016T
Bachelor of Science/ Bachelor of Arts

The WVU Tech student who is studying Interdisciplinary Studies (IDS) in the College of Business, Humanities and Social Sciences is provided the unique opportunity to develop her/his own flexible Program of Study toward either a Bachelor of Science or a Bachelor of Arts degree that represents their personal and career goals. Students work closely with the IDS Program Advisor in structuring their program and completing their degree program. Based upon the student's selected areas of study, this unique degree option includes elective opportunities that can be used to further develop knowledge in the selected areas of study, related areas, or career-oriented courses. Each student’s self-designed program of interdisciplinary study is what makes an IDS degree unique.

Areas of Study

The following list of areas of study represents a few of the many possibilities for combining two or three areas of study and scholarship uniquely available to IDS students. More options than those presented below are available throughout the University.

Academic Disciplines

Accounting
Criminal Justice
English Studies
Fraud Examination
Psychology
Sociology
Business Management
Political Science
Economics
Accounting & Finance
History and Government
Marketing
Risk and Insurance
Sport Management

Students are encouraged to explore IDS Program options. Students considering entering into the degree program who wish to identify areas of study other than those in the above Core List should make arrangements to meet with an IDS Program Advisor to discuss their choices.

Program of Study

Students who wish to complete the IDS degree program will work with the IDS Program Advisor to develop the course plan for their degree, which must be approved by the Dean's office and filed with the university Registrar.

The intent of the course plan is to identify the two areas of study and designation as either a Bachelor Arts degree, with 12 credit hours in the same foreign language, or a Bachelor of Science degree, with 6 minimum credits in mathematics or 3 minimum credits in mathematics and 3 in computer applications. Though the document is intended to meet these criteria, it is considered flexible to account for course offerings each semester.

Students enrolled in the IDS program must complete a minimum of 60 hours in the areas of study beyond the GEF requirements. Of these 60 hours, at least 40 must be in upper division courses, i.e. 300-400 level. To satisfy these requirements, the program of study must meet the following key components:
• Areas of Study Courses: 18 hours of coursework must be earned in each area of study beyond the GEF requirements. At least one-half of the 18 hours for each area of study must be in advanced courses, i.e. 300-400 level courses.

• Restricted Electives: 18-27 hours of coursework (determined by degree designation as either a Bachelor of Arts or a Bachelor of Science) in the selected areas of study or in related areas at the advanced level, i.e. 300-400 level courses, that are complementary to the student’s selected areas of study plus 9 hours in MDS Courses, which is described below.

• Guided Electives: 15-18 hours of coursework (determined by degree designation as either a Bachelor of Arts or a Bachelor of Science) in areas related to the student’s career goals.

• Senior Work: To complete their degrees, IDS students must complete 3 hours of Senior Work. The Senior Work presents students with the opportunity to prepare for the next step in their careers, whether that be employment or graduate education, by completing a self-designed project that synthesizes learning within their academic disciplines. Enrollment in these courses requires the approval of the IDS Program Advisor/Director. Options for Senior Work include:

  **MDS 495** Independent Study
Bachelor of Arts in Interdisciplinary Studies-Major Code 016T

Two Academic Disciplines: AD1 & AD2

(_IDS Academic Disciplines (AD 1 & AD2) each require a “minimum of 18 credit hours; at least one-half of all credit hours beyond GEF requirements must be 300 or 400-level

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td><strong>ENGL 101</strong> Composition &amp; Rhetoric (GEF F1) 3</td>
<td><strong>ENGL 102</strong> Composition &amp; Rhetoric (GEF F1) 3</td>
</tr>
<tr>
<td><strong>WVUE 191</strong> First Year Seminar 1</td>
<td><strong>GEF F4</strong> Society &amp; Connections 3</td>
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<tr>
<td><strong>SPAN 101</strong> Elementary Spanish 1 3</td>
<td><strong>SPAN 102</strong> Elementary Spanish 2 3</td>
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<td><strong>GEF F2</strong> Science &amp; Technology 4-6</td>
<td><strong>GEF F5</strong> Human Inquiry &amp; the Past 3</td>
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<td>AD1 Discipline 1 Requirement (#2 of 6) 3</td>
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Notes: IDS course distribution template sheets like this one offer a starting point for development of the IDS student’s Program of Study, a document, which identifies, among other things, the student’s selected IDS Areas of Academic Discipline (ADs). The Program of Study must be approved by the College Dean’s Office and filed with the Office of the Registrar prior to the Drop/Add deadline of the student’s second semester as a declared IDS major; however, the document remains flexible up to the final semester before the student earns the degree and graduates. IDS Programs of Study are developed by a student-faculty committee, whose members are the student, faculty members representing the ADs chosen by the student, and an ex officio faculty member appointed by the advisory committee for Interdisciplinary Studies.

When students register each semester, the following guidelines for the selection of course electives should be followed: (1) Restricted Electives should focus on additional AD courses; (2) Guided Electives should include “Career Goal” courses: Multidisciplinary (MDS) internship, research, etc. (3) IDS requires a minimum of 60 AD credits beyond the GEF: thus, a minimum 30 upper-division AD credits; at the same time, the University requires a minimum of 40 upper-division credits for any Bachelor degree, leaving 10 upper-division credits that may reside outside the ADs; (4) At least one-half of all AD credits must be upper-division courses. (5) All University B.A. degrees require four semesters of the same foreign language. The Senior Project (MDS 495: Independent Study) must be scheduled during the semester preceding the student’s final semester; however, the Senior Project proposal should be in-development even earlier so that tie-in opportunities with the Guided Electives may be incorporated. Students also need to indicate an AD ranking, so that AD1 credits equal or exceed credits in the other AD(s). The AD1 faculty member is normally identified as the chairperson of the student-faculty committee and as the Director of the Senior Project.

Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours: 120-122
Bachelor of Science in Interdisciplinary Studies-Major Code 016T

Two Academic Disciplines: AD1 & AD2

(IDS Academic Disciplines (AD 1 & AD2) each require a "minimum of 18 credit hours; at least one-half of all credit hours beyond GEF requirements must be 300 or 400-level

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Notes: IDS course distribution template sheets like this one offer a starting point for development of the IDS student’s Program of Study, a document which identifies, among other things, the student’s selected IDS Areas of Academic Discipline (ADs). The Program of Study must be approved by the College Dean’s Office and filed with the Office of the Registrar prior to the Drop/Add deadline of the student’s second semester as a declared IDS major; however, the document remains flexible up to the final semester before the student earns the degree and graduates. IDS Programs of Study are developed by a student-faculty committee, whose members are the student, faculty members representing the ADs chosen by the student, and an ex officio faculty member appointed by the advisory committee for Interdisciplinary Studies.

When students register each semester, the following guidelines for the selection of course electives should be followed: (1) Restricted Electives should focus on additional AD courses; (2) Guided Electives should include “Career Goal” courses: Multidisciplinary (MDS) internship, research, etc. courses; (3) IDS requires a minimum of 60 AD credits beyond the GEF: thus, a minimum 30 upper-division AD credits; at the same time, the University requires a minimum of 40 upper-division credits for any Bachelor degree, leaving 10 upper-division credits that may reside outside the ADs; (4) At least one-half of all AD credits must be upper-division courses. (5) All University B.S. degrees require one Math and one Computer Science elective. The Senior Project (MDS 495: Independent Study) must be scheduled during the semester preceding the student’s final semester; however, the Senior Project proposal should be in-development even earlier so that tie-in opportunities with the Guided Electives may be incorporated. Students also need to indicate an AD ranking, so that AD1 credits equal or exceed credits in the other AD(s). The AD1 faculty member is normally identified as the chairperson of the student-faculty committee and as the Director of the Senior Project.

Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours: 120-122
MILITARY SCIENCE

The military science curriculum stresses the techniques and practical application of organizational theory, leadership, and decision-making for both women and men. The basic course, normally taken during the freshman and sophomore years, is designed to explore the mainstays of thought about the structuring of cooperative effort in organizations from the origins of formal theory to the recent contributions of the behavioral sciences. Course objectives are to gain familiarity with the literature and leading concepts, to increase understanding of processes and issues in organizational life, and to develop analytical skills in the leadership, management and decision making functions. Building on the theoretical groundwork, the program emphasizes application and practical experience.

To achieve the above objectives, the Military Science curriculum will include both experiential and didactic learning methods. The experiential learning component includes both laboratory situations and selected outside activities. The didactic learning component revolves around the more familiar approaches of lectures. Approximately one-third of each semester is devoted to the didactic learning method. The remaining two-thirds of each semester of the first year is devoted to the experiential learning component wherein students may elect to enroll in two of the following activities each semester: basic mountaineering, basic patrolling, basic rifle marksmanship, basic map reading and land navigation, basic self-defense, and management seminar.

The second year of the basic program is an extension of the first year. Students continue their study of organizational theory, leadership, and management. Elective activities offered during the second year are advanced training in the same activities that were offered during the first year.

The basic program, described above, has a weekly requirement of two hours and imposes no military obligation, nor military standards of dress, physical fitness, discipline, and appearance on the part of the enrolled students. Students may withdraw at any time from the basic course.

The advanced program, normally taken during the junior and senior years, is limited to those graduates of the basic program who have demonstrated both a potential for and a desire to become future leaders in the U.S. Army. The curriculum of the advanced course builds upon and reinforces the knowledge gained in the basic course. In the advanced program, experiential and didactic learning methods are oriented toward a single organization. The U.S. Army course objectives are to increase the student’s understanding of processes and issues in Army organizational life and to develop analytical skills in the leadership, organization, management, and administration of military organizations.
PSYCHOLOGY-Major Code 022T  
Bachelor of Arts

The Bachelor of Arts degree in Psychology has an emphasis in human behavior and counseling. It is broadly conceived and designed to prepare students for a variety of careers. Among the notable features of the program are a course in research methods with an emphasis in behavior analysis and adjustment in a laboratory setting, a field experience option that allows students to earn credits for placement in a public or private enterprise for professional competence development, and a capstone course that integrates methodology, research, and writing in the discipline. The combination of coursework and field experience will permit students to achieve professional certification necessary to work with special needs children.

Graduates of the program will be prepared to enter careers in applied mental health or organizational settings. Some examples of career options include education, children and youth behavioral services, adult behavioral services, counseling, corrections, health-care related occupations, and other fields. Psychology majors may also pursue advanced degrees in graduate or professional schools.

Program Learning Outcomes

Students completing the program will:

- Use the scientific approach to solve psychologically-relevant problems and to increase the knowledge base of psychology
- Demonstrate the diverse set of variables that influence behavior
- Demonstrate critical and ethical thinking skills
- Demonstrate grounding in the field of behavior analysis
- Demonstrate an appreciation of the specialized psychological needs in Appalachia
- Demonstrate effective communication skills

Requirements to Graduate:

- A minimum of 38 psychology credits is required for the major and 120 credits overall for graduation.
- An overall 2.0 average in all psychology courses attempted is required for graduation.
- In addition, a minimum grade of C is required in the following courses: PSYC 101, PSYC 202, PSYC 241, PSYC 351, PSYC 301, PSYC 302, and STAT 211 or ECON 225.
- Restricted Electives may be taken in: psychology, biology, chemistry, physics, computer science, criminal justice, foreign language, economics, sociology, mathematics, fine arts, history, nursing, political science, or forensic science. Twelve (12) of the 24 credit hours must be in 300/400 level courses.
# Psychology-Major Code 022T

**Bachelor of Arts**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<td><strong>ENGL 102</strong> Composition &amp; Rhetoric (GEF F1) 3</td>
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<tr>
<td><strong>MATH 126</strong> College Algebra* (GEF F3) 3</td>
<td><strong>STAT 211</strong> Elem Statistical Inference or <strong>ECON 225</strong> Elem Business &amp; Econ Statistics 3</td>
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<tr>
<td><strong>PSYC 101</strong> Intro to Psychology (GEF F4) 3</td>
<td><strong>PSYC 241</strong> Intro to Human Dev or <strong>PSYC 201</strong> The Arts &amp; Creativity 3</td>
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<td><strong>GEF F5</strong> Human Inquiry &amp; the Past 3</td>
<td><strong>PSYC 201</strong> Psychology as a Profession 1</td>
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<td><strong>WVUE 191</strong> First Year Seminar 1</td>
<td><strong>Foreign Language</strong> 3</td>
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<tr>
<td><strong>PSYC 363</strong> Personality Theory 3</td>
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<tr>
<td><strong>PSYC 202</strong> Research Methods in Psychology 3</td>
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<td><strong>PSYC 281</strong> Abnormal Psychology 3</td>
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<td><strong>BIOL 111</strong> General Biology (GEF F2) 4</td>
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<td><strong>Foreign Language</strong> 3</td>
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<td><strong>PSYC 302</strong> Behavior Principles 4</td>
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<td><strong>PSYC 362</strong> Psychological Assessment 3</td>
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<td><strong>CSAD 270</strong> Effective Public Speaking 3</td>
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<td><strong>GEF F8</strong> Focus 3</td>
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<td><strong>PSYC 495</strong> Independent Study OR</td>
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<td><strong>PSYC 493</strong> Special Topics 3</td>
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<td><strong>PSYC 424</strong> Learning &amp; Behavior Theory 3</td>
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<td><strong>Restricted Elective(s)</strong>* 2</td>
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**Notes:**

*MATH 126A, MATH 126B, or MATH 126C may be used to satisfy this requirement.

**12 credit hours in a single foreign language (elementary and intermediate levels).

Note: One year of Spanish at the high school level equals **SPAN 101**, a second year of high school **SPAN 102**, and so on.

***Restricted electives may be taken in: psychology, biology, chemistry, physics, computer science, criminal justice, foreign language, economics, sociology, mathematics, fine arts, history, nursing, political science, or forensic science. 12 of the 24 credit hours must be in 300/400 level courses.

Students should ensure that they earn sufficient credit hours per year to adhere to any potential financial aid stipulations.

Total Hours - 120
PUBLIC SERVICE ADMINISTRATION-Major Code 023T
Bachelor of Science

The Public Service Administration (PSA) major was revised in 2014 as an interdisciplinary 120 credit hour program that enables students to complete the degree, including the internship, in a timely manner. There is a built-in practicum internship that gives the students job experience and allows them to apply the skills they have obtained during the course of their studies. This degree prepares students for careers with all levels of government; local, county, state and federal. PSA also prepares students for a career in non-profit organizations. It is a perfect pre-law degree as it provides a number of political science courses. In addition, this degree is perfect for continuing on to graduate school in social work, public administration, political science, sociology, or business administration. Provided the correct restrictive electives are chosen, a student can obtain a minor in political science, sociology or economics without additional course work.

Program Learning Outcomes

- The student will demonstrate leadership skills through written and oral communications, both in person and through computer technology.
- The student will be able to evaluate policy, use critical thinking skills, and be able to make some predictions concerning how these policies will impact their individual and collective situations.
- The student will know the process of managing an organization or government agency program, including understanding the fiscal responsibilities.
- The student will become culturally competent and aware of diversity in the work environment.
### Public Service Administration-Major Code 023T
**Bachelor of Science**

#### First Semester

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<td>WVUE 191</td>
<td>First Year Seminar</td>
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<tr>
<td>MATH 123</td>
<td>Finite Math 1* (GEF F3)</td>
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<td>GEF F2B</td>
<td>Science and Technology Elective</td>
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<td>SOCA 101</td>
<td>Introduction to Sociology</td>
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<td>CS 101</td>
<td>Intro to Computer Applications</td>
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<td>Focus</td>
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<td>Principles of Microeconomics</td>
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<tr>
<td>BCOR 370</td>
<td>Managing Individuals &amp; Teams</td>
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<tr>
<td>POLS 102</td>
<td>Intro to American Government</td>
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<td>PSYC 101</td>
<td>Introduction to Psychology (GEF F4)</td>
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<td>ECON 202</td>
<td>Principles of Macroeconomics</td>
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<td>POLS 220</td>
<td>State and Local Government</td>
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<tr>
<td>HUMS 210</td>
<td>Introduction to Welfare</td>
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<tr>
<td>ENGL 305</td>
<td>Technical Writing</td>
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<td>SOCA 333</td>
<td>Sociology of Work &amp; Work Places</td>
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<td>POLS 260</td>
<td>International Relations (GEF F7)</td>
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<td>HUMS 320</td>
<td>Public Administration</td>
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<td>GEF F5</td>
<td>Human Inquiry &amp; the Past</td>
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<td>HUMS 480</td>
<td>Grant Writing and Documentation</td>
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<td>SOCA 305</td>
<td>Social Stratification</td>
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<td>Elem. Statistical Inference</td>
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<tr>
<td>HUMS 235</td>
<td>Race Relations or</td>
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<td>SOCA 207</td>
<td>Social Problems-Contemp. America</td>
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<td>GEF F6</td>
<td>The Arts &amp; Creativity</td>
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<td>POLS 313</td>
<td>American Constitutional Law</td>
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<td>SOCA 311</td>
<td>Social Research Methods**</td>
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<td>HUMS 489</td>
<td>Practicum Capstone Internship</td>
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*May substitute higher level math

**Prerequisite of ECON 225 or STAT 211

**Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

Total Hours - 120
REGENTS BACHELOR OF ARTS-Major Code 024T

WVU Tech is a participating institution in the state-wide Regents Bachelor of Arts degree program. The program is designed for adults who wish to complete their college studies and offers an opportunity to gain credits for work and life experience. Students tailor their academic courses of study to meet their individual needs.

Degree Requirements

TOTAL CREDITS: 120 hours
UPPER DIVISION COURSES: 39 hours
GENERAL EDUCATION (no major field may be chosen): 36 hours, including:
- Communications: 6
- Humanities: 6
- Natural Sciences: 6
- Social Sciences: 6
- Mathematics or Computer Application: 3
WVU TECH GRADE POINT AVERAGE: 2.0
OVERALL GRADE POINT AVERAGE: 2.0

Rule of Failing Grades: All F’s received four years or more prior to admission to the program are disregarded. Students who have received a second or third level academic suspension, however, are not eligible except by special petition to the Committee on Classification and Grades.

Residency: 24 hours earned in one or more of West Virginia’s state-supported colleges or universities, including community colleges. At least 3 of the 24 graded hours must be completed at WVU Tech.

Grades and Grading: Same as other programs.

Admission

Admission and retention requirements are the same as for other degree programs except that students are not eligible for admission until at least four years after graduation from high school.

Students may not be enrolled simultaneously in the Regents degree program and another college degree program and they are ineligible if they have already earned a bachelor’s degree.

All passing grades from other accredited colleges, plus passing grades on CLEP and other college level tests, will be accepted.
College Equivalent Credit

If they wish, students may prepare a work-and-life-experience portfolio that will be evaluated by qualified faculty members for college-equivalent credits. The college-equivalent credits are used in the Regents program to complete degree requirements. A fee of $300 will be charged regardless of the credits awarded. The same fee will be required each time students request subsequent evaluations. An additional fee of $10 will be charged for each credit hour awarded through the portfolio process. The fee is active for one year and will cover all portfolios submitted in that specific time period.

Areas of Emphasis

WVU Tech encourages the adult student in the Regents B.A. program to complete a focused area of education. The following areas of emphasis require the completion of 15 graded hours of related upper-division classroom work with a grade of C or better in each course.

- Creative Arts (course work may be selected from English, Art, Music, Drama, Languages)
- Health Care Services (from Human Services, Management Information Systems)
- Cultural Studies (from Sociology, History, Psychology, English, Art)
- Sciences (from Mathematics, Physics, Biology, Chemistry)
- Social Sciences (from Economics, History, Sociology, Political Science)
- Labor Studies (from Economics, History, Sociology, Political Science)
- Government (from Economics, History, Sociology, Political Science)
- Business (from Accounting, Finance, Management, Marketing, Information Systems)
- Information Studies (from Information Systems, Management, English, Speech)
- Organizational Management (BCOR 370, BCOR 350; MANG 422 & MANG 330, & MKTG 485)
- Marketing (BCOR 350; MKTG 315, MKTG 380, MKTG 420 & MKTG 485)

FRAUD MANAGEMENT CERTIFICATION

Effective fall 2011, RBA students may choose to pursue a fraud management certification.

- Fraud Management (ACCT 420, ACCT 421, ACCT 422, ACCT 423, ACCT 348, & ACCT 449)

Further information regarding this certification can be found under Accounting in the College of Business, Humanities and Social Sciences.

NOTE: Students should check the catalog to determine if pre-requisites are required for any of the above courses.
Program Learning Outcomes

• Consistent with what society expects of all adult workers and good citizens, the Regents graduate will be able to demonstrate a general education in communications, the humanities, social sciences, natural sciences, and mathematics/computer applications.
• The Regents graduate will be able to demonstrate a focused knowledge of one or more academic areas of his or her own choosing.

Tuition and Fees

There is no fee for admission into the program. For courses of study, students pay the same tuition as candidates in other degree programs.

A Second Degree

Students who receive a Regents baccalaureate degree may qualify for a second baccalaureate degree after one academic year. College equivalency credit received for life and work experience is applicable to no degree other than the Regents Bachelor of Arts.

For information, contact:

Frank D. Robbins, Program Coordinator
WVU Institute of Technology
405 Fayette Pike
Montgomery, WV 25136
(304) 442-3005  Frank.Robbins@mail.wvu.edu
http://rba.wvutech.edu/
<table>
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<th>Subject</th>
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<th>Upper Div. 39 Hrs</th>
<th>Residency 24 Hrs</th>
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SPORT MANAGEMENT-Major Code 026T
Bachelor of Science

Sport Management is offered by WVU Tech through the West Virginia University College of Physical Activity and Sport Sciences. The program prepares graduates for careers in professional and collegiate sport organizations, fitness and recreational facilities, and sport-related businesses. Examples of career opportunities include directors of marketing and promotions, assistant general managers, school athletic directors, vice presidents of operations, compliance officers, and other positions. The baccalaureate program provides an excellent foundation for graduate education.

Upon meeting the university’s general requirements for admission to the College of Business, Humanities and Social Sciences, the student is ordinarily admitted as a Pre-Sport Management major and completes a minimum of 62 credit hours, including a minimum of 31-36 hours of foundation courses and 31 hours of General Education Foundation Curriculum while maintaining an overall minimum 2.5 GPA. The following courses must be completed with a “C” or better before entering the Sport Management Major: (ENGL 101; JRL 101; MATH 121/MATH 126; COMM 100, COMM 102 or COMM 104 (WVU Course – not offered at WVU Tech); ECON 201 or ACCT 201). SM 167 requires a “B” or better to enter the program. Upon meeting these requirements, the student must complete an application from the Chair’s Office for admission to the Sport Management program. Six hours of Industry Approved Electives must be completed along with the foundation requirements. A list of these electives is available in the Advisor’s and Chair’s Offices.

Program Learning Outcomes:

Graduates of Sport Management will:
• Recognize the importance and significance of the role of sport management.
• Develop analytical and communication skills appropriate to the professional and corporate environment.
• Be prepared to assume management positions in a variety of athletic and sport-related businesses and industries.
• Be familiar with compliance programs at the collegiate and national athletic sport levels.
• Recognize the importance of continuing emotional, intellectual, and physical development throughout their lives.

Once admitted to the Sport Management program, students must continue to meet University and program requirements, as well as, maintain satisfactory progress towards completion of the degree. If a student fails to meet these requirements once admitted to the program:

• The student will be placed on probation for one semester.
• The student’s grades will be reviewed at the conclusion of the probation semester to determine their future status. Upon this review, the student will either be reinstated to or suspended from the program.

A student suspended from the program must seek another major immediately, as they will not be permitted to register for additional required Sport Management classes.
Course equivalencies in the Sport Management Program:

<table>
<thead>
<tr>
<th>WVU COURSES</th>
<th>WVU TECH COURSES</th>
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<tr>
<td>BUSA 202 Survey of Accounting</td>
<td>ACCT 201 Principles of Accounting</td>
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<tr>
<td>COMM 306 Human Communication</td>
<td>COMM 100, COMM 102 Human Communications</td>
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<td>PR 215 Introduction to PR</td>
<td>HUMS 320 Public Administration</td>
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<td>BUSA 320 Principles of Management</td>
<td>BCOR 370 Man, Individuals &amp; Team</td>
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<td>BUSA 330 Principles of Marketing</td>
<td>BCOR 350 Principles of Marketing</td>
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Pre-Sport Management Program – Major Code 026T
Bachelor of Science

First Semester

<table>
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<tr>
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<th>Description</th>
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<tr>
<td>ENGL 101</td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
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<tr>
<td>GEF F2</td>
<td>Science and Technology</td>
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<tr>
<td>GEF F3</td>
<td>MATH 121 or higher</td>
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<td>WVUE 191</td>
<td>First Year Seminar</td>
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<td>SM 167</td>
<td>Introduction to Sport Studies</td>
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Second Semester

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<tr>
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<td>Composition &amp; Rhetoric (GEF F1)</td>
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<td>Human Inquiry &amp; the Past</td>
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<td>GEF F6</td>
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<td>SM 100</td>
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Third Semester

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<tr>
<td>ACCT 201</td>
<td>Principles of Accounting</td>
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<td>ECON 201</td>
<td>Principles of Microeconomics</td>
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<td>SEP 271</td>
<td>Sport In American Society (GEF F8)</td>
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<td>CSAD 270</td>
<td>Effective Public Speaking</td>
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<td>SM 375</td>
<td>Sport in Global Market (GEF F7)</td>
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Fourth Semester

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<td>Psych. Perspectives of Sport (GEF F4)</td>
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<td>JRL 101</td>
<td>Media &amp; Society</td>
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Sport Management Program

Fifth Semester

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<tr>
<td>BCOR 350</td>
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<td>BCOR 370</td>
<td>Managing Individuals &amp; Team</td>
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<td>HUMS 320</td>
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<td>SM 340</td>
<td>Sport Governance</td>
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Sixth Semester

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<tr>
<td>SM 425</td>
<td>Facility Planning</td>
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<td>SM 426</td>
<td>Liability in Sport</td>
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<td>SM 485</td>
<td>Sport Management</td>
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Seventh Semester

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<tr>
<td>SM 380</td>
<td>History &amp; Philosophy of Sport</td>
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<td>SM 345</td>
<td>Technology in Sport Management</td>
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<td>SM 350</td>
<td>Leadership in Sport Management</td>
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<tr>
<td>SM 355</td>
<td>Orientation to Sport Management</td>
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<td>SM 385</td>
<td>Sport Economics</td>
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<td>GEF F8</td>
<td>Focus</td>
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Eighth Semester

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<tr>
<td>SM 486</td>
<td>Sport Marketing</td>
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<td>SM 487</td>
<td>Issues in Sport Management</td>
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<td>ACE 491</td>
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Must have a B or better in SM 167.
Must have a C or better in ENGL101, JRL 101, MATH 121, COMM 100, COMM 102, ECON 201, and ACCT 201.

NOTE: Students should register for sufficient credit hours in an academic year to maintain their financial aid.

Total credits: 120-122
Minors

Accounting

**Code UT01**

18 semester hours to include:

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<td>ACCT 201</td>
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<td>ACCT 311</td>
<td>Intermediate Accounting</td>
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Plus three of the following courses:

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<td>Intermediate Accounting</td>
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<td>ACCT 348</td>
<td>Financial Statement Analysis</td>
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<td>ACCT 432</td>
<td>Advanced Cost Management</td>
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<td>ACCT 441</td>
<td>Income Tax Accounting</td>
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<td>ACCT 442</td>
<td>Income Tax Accounting</td>
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<td>ACCT 322</td>
<td>Accounting Systems</td>
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<td>ACCT 491</td>
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Business Administration*

**Code UT03**

25 semester hours as follows:

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<tr>
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<td>BCOR 370</td>
<td>Managing Individuals and Teams</td>
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<td>MANG 386</td>
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*Course pre-requisites must be satisfied. The minor is not available to students who major in programs offered by the Department of Accounting/Finance or the Department of Management/Marketing.

Criminal Justice

**Code UT21**

15 semester hours to include:

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<td>CMJS 133</td>
<td>Juvenile Justice</td>
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Plus nine (9) hours to be selected from:

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<td>CMJS 310</td>
<td>Law Enforcement Administration</td>
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<td>CMJS 320</td>
<td>Courts and Judicial Systems</td>
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<td>CMJS 410</td>
<td>Criminal Investigations</td>
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<td>HUMS 320</td>
<td>Public Administration</td>
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<td>POLS 313</td>
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<td>POLS 400</td>
<td>Terrorism and National Security</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 302</td>
<td>Deviant Behavior</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 311</td>
<td>Social Research Methods</td>
<td>3</td>
</tr>
</tbody>
</table>
**Economics**

**Code UT05**
18 Semester hours as follows:

- **ECON 201**  Principles of Microeconomics  3
- **ECON 202**  Principles of Macroeconomics  3
- **ECON 301**  Intermediate Microeconomic Theory  3
- **ECON**  Restricted Electives*  9

*Must include at least 9 hours of upper division courses.

*For Business Management majors, no more than 3 semester hours in Readings and Research will be counted toward the minor in Economics.

**Finance**

**Code UT06**
18 semester hours including:

- **FIN 325**  Financial Management 1  3
- **FIN 326**  Financial Management 2  3
- **FIN 310**  Investments  3
- **ACCT 491**  Professional Field Experience  3
- **ECON 331**  Money and Banking  3
- **FIN 321**  Personal Finance  3

**Fraud Examination**

**Code UT07**
18 semester hours including:

- **ACCT 201**  Principles of Accounting  3
- **ACCT 348**  Financial Statement Analysis  3
- **ACCT 420**  Fraud Examination  3
- **ACCT 421**  Fraud Mgmt: Legal/Ethical Issues  3
- **ACCT 422**  Advanced Fraud Investigation/Analysis  3
- **ACCT 423**  Information Security and Controls  3

**History and Government**

**Code UT09**
21 semester hours as follows:

- **POLS 102**  Intro to American Government  3
- **POLS 300+**  3
- **HIST 179**  World History to 1500  3
- **HIST 180**  World History since 1500  3
  or
- **HIST 152**  Growth of American Nation to 1865  3
- **HIST 153**  Making of Modern America 1865-present  3

Plus 9 hours of History 200+ courses

**Human Resources Administration***

**Code UT10**
18 semester hours as follows:

- **ECON 240**  Introduction to Labor Unions  3
- **ECON 430**  Collective Bargaining  3
- **MANG 422**  The Individual and the Organization  3

**Marketing**
**Code UT13**

18 semester hours to include:

- **BCOR 350**  Principles of Marketing  3
- **MKTG 380**  Integrated Promotions  3

Plus four of the following:

- **MKTG 325**  Marketing Research  3
- **MKTG 315**  Consumer Behavior  3
- **MKTG 485**  Global Marketing  3
- **MKTG 410**  Retail Management  3
- **MKTG 420**  Sales Management  3

**Political Science**

**Code UT16**

18 semester hours including:

3 required courses (9 required hours)

- **POLS 102**  Intro to American Government  3
- **POLS 260**  Intro to International Relations  3
- **POLS 319**  Comparative Government  3

Plus 3 elective courses (9 hours) of POLS or HUMS courses. Regularly taught courses include:

- **POLS 103**  Global Issues  3
- **POLS 220**  State and Local Politics  3
- **POLS 313**  American Constitutional Law  3
- **POLS 400**  Terrorism and National Security  3
- **HUMS 320**  Public Administration  3

Other POLS, HUMS courses may be accepted with advisor approval.

Overall, minor must include at least 9 hours of upper division (300+) courses.

**Professional Writing and Editing**

**Code UT23**

15 semester hours to include:

**Required Courses**

- **ENGL 301**  Writing Theory & Practice  3
- **ENGL 302**  Editing  3

Plus three courses from the groupings below:

**Business and Technical Writing**

- **ENGL 304**  Business and Professional Writing  3
- **ENGL 305**  Technical Writing  3

**Writing with Technology**

- **ENGL 303**  Multimedia Writing  3

OR

**ENGL 306**  Topics In Humanities Computing  3

**Linguistics**
ENGL 221  The English Language  3
OR
ENGL 321  The History of the English Language  3

Minimum 3.0 GPA in PWE courses

**Psychology**
**Code UT17**
18-19 semester hours including:
- **PSYC 101**  Introduction to Psychology  3
- **PSYC 202**  Research Methods in Psychology  3
- **PSYC 301**  Biological Foundations of Behavior  3
  or
- **PSYC 302**  Behavioral Principles  4
Choose One: **PSYC 241** or **PSYC 281**
Choose Two: **PSYC 331**, **PSYC 343**, **PSYC 351**, **PSYC 363**, **PSYC 382**, **PSYC 474**, **PSYC 493**

Minimum of “C” in all PSYC classes

**Risk and Insurance**
**Code UT18**
18 semester hours including:
- **ACCT 423**  Information Security & Control  3
- **ECON 331**  Money and Banking  3
- **FIN 321**  Personal Finance  3
- **FIN 325**  Financial Management 1  3
- **HUMS 330**  Health Insurance  3

**Sociology**
**Code UT19**
18 semester hours including
- **SOCA 101**  Introduction to Sociology  3

Must include at least 9 hours of upper division courses.
**WGST 225** Women in Appalachia may be included as part of sociology minor

**Sport Management**
**Code UT20**
6 hours required in Business:
- **BCOR 350**  Marketing  3
- **BCOR 370**  Management  3
Choose one class from the following:

- **SM 370**  Sport Finance  3
- **SM 380**  History & Philosophy of Sport  3

Total Hours Required  18
DEPARTMENT OF NURSING

Nursing, B.S. 019T
Pre-Nursing 020T

DEGREES OFFERED

The mission of the WVU School of Nursing is to lead in improving health in West Virginia and society in general, through excellence in student-centered educational programs, research and scholarship, the compassionate practice of nursing, and service to the public and the profession. This mission is responsive to changing healthcare needs and emerging national and state changes in technology and healthcare delivery and is enhanced by a supportive and open environment. The faculty’s educational effort is directed at providing high quality, student-centered programs of instruction at all levels which prepare superb professional nurses to meet basic healthcare needs. The curriculum includes courses in the humanities, social sciences, basic sciences, and nursing science. These courses are taken in conjunction with nursing clinical courses that enable students to apply their learning to actual client, family, and community situations that warrant nursing intervention. The curriculum has been carefully designed to equip graduates to begin professional nursing practice with patients of all ages in any health care setting where there is a position for a professional nurse at the start of his or her career. The program also provides an excellent foundation for graduate study in nursing and in other fields. The program is fully accredited by the Commission of Collegiate Nursing Education of the American Association of Colleges of Nursing. Students graduating from the program are eligible to take the licensure exam for registered professional nurses (NCLEX) in West Virginia and all other states.

On the WVUIT campus there are two options:

1. Basic BSN students are admitted to the WVUIT Department of Nursing at either the freshman level or the sophomore level after completing pre-requisite general education requirements. While freshman level general education requirements are generally completed at WVUIT, students may complete these courses at other accredited institutions and transfer to WVUIT upon admission to the BSN program.

2. The joint program between WVU School of Nursing/Glenville State College and WVUIT is a program whereby students complete the first one year of study on the Glenville campus and then in the spring apply to WVUIT to be admitted as sophomores to complete the nursing courses.

Admission Requirements

High School Seniors

Candidates who are selected for the limited number of openings in the nursing program must meet the admission requirements of the WVU School of Nursing. Admission is on a competitive basis. Individuals who have a felony or serious misdemeanor conviction are NOT guaranteed entrance to health agencies for clinical experiences and are not guaranteed to be approved by the West Virginia Board of Examiners for Registered Professional Nurses to take the National Council for Licensure Examination for Registered Nurses (NCLEX). If felony convictions or serious misdemeanors preclude participation in clinical rotations, this could, in turn, prevent the completion of clinical course requirements,
and completion of the nursing program.

Admission directly to the Nursing major is based on a combination of high school grade-point average and composite ACT or total SAT scores. Direct admission space is limited. Students admitted into the nursing major as Freshman have a total of four semesters to complete the required Freshman course work. High school students eligible for admission to the University are admitted directly into nursing if they meet the following criteria:

<table>
<thead>
<tr>
<th>GPA</th>
<th>ACT or SAT</th>
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<tbody>
<tr>
<td>3.8 or higher</td>
<td>25 composite</td>
</tr>
<tr>
<td>3.6-3.79</td>
<td>26 composite</td>
</tr>
<tr>
<td>3.5-3.59</td>
<td>28 composite</td>
</tr>
<tr>
<td>3.0-3.19</td>
<td>21 composite</td>
</tr>
<tr>
<td>3.0</td>
<td>23 composite</td>
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</tbody>
</table>

High school students eligible for pre-nursing status will need to have the following requirements:

<table>
<thead>
<tr>
<th>GPA</th>
<th>ACT or SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2 or higher</td>
<td>21 composite</td>
</tr>
<tr>
<td>3.0-3.19</td>
<td>23 composite</td>
</tr>
<tr>
<td>3.0</td>
<td>23 composite</td>
</tr>
<tr>
<td>3.0</td>
<td>23 composite</td>
</tr>
</tbody>
</table>

**College Students**

High school students not eligible for direct admission and college students from other majors may apply for admission after one semester or more of college course work. Admission consideration in this case is dependent upon:

- Minimum cumulative GPA of at least 3.0 on a 4.0 scale on all college work attempted
- Minimum cumulative GPA of 3.0 on a 4.0 scale for the pre-requisite courses
- Completion of each of the pre-requisite courses with a grade of “C” or better prior to enrollment.

**Prerequisites:** English Composition (3 cr.), Introduction to Psychology (3 cr.), Introduction to Nursing (2 cr.), College Algebra (3 cr.), Chemistry with lab (8 cr.), General Biology with lab (4 cr.), Anatomy and Physiology (4 cr.). Statistics is in the freshman progression plan but is not a pre-requisite for admission to sophomore year. Introduction to Human Development and Nutrition, and Intro to Anthropology are no longer pre-requisites and are taken later in the program.

Application forms can be obtained from the Department of Nursing at [http://nursing.wvutech.edu](http://nursing.wvutech.edu) or in Orndorff Hall room 2401 or email request to Julie.Wood@mail.wvu.edu.
**Basic BSN PROGRESSION PLAN**  
**Fall Admission**  
**Students enrolled in WVUIT beginning Fall 2016**  
**Pre-Nursing**

### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>+CHEM 111</td>
<td>Survey of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>+BIOL 111</td>
<td>General Biology</td>
<td>4</td>
</tr>
<tr>
<td>*+PSYC 101</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>*+MATH 126</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>*+WVUE 191</td>
<td>First Year Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>+CHEM 112</td>
<td>Survey of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>+BIOL 230</td>
<td>Human Anatomy &amp; Physiology 1</td>
<td>4</td>
</tr>
<tr>
<td>*+NSG 100</td>
<td>Introduction to Nursing</td>
<td>2</td>
</tr>
<tr>
<td>*+ENGL 101</td>
<td>Composition &amp; Rhetoric (GEF 1)</td>
<td>3</td>
</tr>
<tr>
<td>**STAT 211</td>
<td>Elementary Stat. Inference</td>
<td>3</td>
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</tbody>
</table>

### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>NSG 211</td>
<td>Health Assessment/Communication</td>
<td>6</td>
</tr>
<tr>
<td>**HLSC 104</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>**BIOL 231</td>
<td>Human Anatomy &amp; Physiology 2</td>
<td>4</td>
</tr>
<tr>
<td>**ENGL 102</td>
<td>Composition &amp; Rhetoric (GEF 1)</td>
<td>3</td>
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### Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>NSG 212</td>
<td>Foundations of Nursing Practice</td>
<td>6</td>
</tr>
<tr>
<td>NSG 276</td>
<td>Intro Evid. Based Practice/Research</td>
<td>3</td>
</tr>
<tr>
<td>**PSYC 241</td>
<td>Introduction to Human Development</td>
<td>3</td>
</tr>
<tr>
<td>**BIOL 240</td>
<td>Microbiology</td>
<td>4</td>
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</tbody>
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### Fifth Semester

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 311</td>
<td>Alterations in Adult Health 1</td>
<td>6</td>
</tr>
<tr>
<td>NSG 310</td>
<td>Women’s Health Across the Lifespan</td>
<td>4</td>
</tr>
<tr>
<td>NSG 376</td>
<td>Clinical Nursing Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>SOCA 105</td>
<td>Introduction to Anthropology</td>
<td>3</td>
</tr>
</tbody>
</table>

### Sixth Semester

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>NSG 312</td>
<td>Alterations in Adult Health 2</td>
<td>6</td>
</tr>
<tr>
<td>NSG 320</td>
<td>Child and Adolescent Health</td>
<td>4</td>
</tr>
<tr>
<td>NSG 360</td>
<td>Ethics and Health Policy</td>
<td>3</td>
</tr>
<tr>
<td>GEF F6</td>
<td>The Arts and Creativity</td>
<td>3</td>
</tr>
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</table>

### Seventh Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 450</td>
<td>Alterations in Mental Health</td>
<td>4</td>
</tr>
<tr>
<td>NSG 411</td>
<td>Complex Community Systems</td>
<td>7</td>
</tr>
<tr>
<td>GEF F5</td>
<td>Human Inquiry &amp; the Past</td>
<td>3</td>
</tr>
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</table>

### Eighth Semester

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSG 460</td>
<td>Care of the Critically Ill Patient</td>
<td>4</td>
</tr>
<tr>
<td>NSG 412</td>
<td>Leadership in Complex Systems</td>
<td>7</td>
</tr>
<tr>
<td>NSG 486</td>
<td>NCLEX Review</td>
<td>1</td>
</tr>
</tbody>
</table>

*Can be taken Fall or Spring Semester  
+Required with grade of C or better before enrollment in Sophomore nursing courses  
**Pre- or Co-requisites with sophomore courses. Must be completed with C or better to progress to Junior level.

Note: Students should register for sufficient credit hours in an academic year to maintain eligibility for financial aid.

**Total Credit Hours:** 123  
- Nursing credits = 68  
- Non-nursing credits = 55
Leonard C. Nelson College of Engineering and Sciences

General Information

Mission of the Leonard C. Nelson College of Engineering and Sciences

The mission of the Leonard C. Nelson College of Engineering and Sciences of the West Virginia University Institute of Technology closely reflects the mission of the Institution. The programs in the College of Engineering and Sciences address the professional engineering and science needs of industry, government, and business and prepare their graduates to be citizens of the state, national, and global communities. The programs provide for a student-centered education that balances career preparation with an understanding and appreciation of the traditional humanities and sciences. The programs strive to prepare tomorrow’s engineers and scientists with a broad education necessary to effectively communicate technical concepts to a wide audience and to place technical solutions in a societal context. In addition, the College of Engineering and Sciences gives qualified students the opportunity to gain valuable experience practicing the fundamentals of engineering and science through the Co-Op program, as well as through the placement of students in intern positions.

The undergraduate programs in the Leonard C. Nelson College of Engineering and Sciences culminate in Bachelors of Science degrees by providing a quality, well-rounded education based on the knowledge of mathematics and science with applications to solving problems in engineering, design, discovery, innovation, and/or computer science. All programs impart the ability to use the tools of modern engineering and science in professional practice. The programs enhance the ability of the students to be critical thinkers, life-long learners, team players, and responsible and ethical citizens. The means to accomplish these goals are the faculty members who are dedicated to teaching, research and scholarship through disseminating knowledge, applying knowledge to new problems, generating new knowledge, and enhancing the methodology of education.

The College of Engineering and Sciences seeks to have all of its programs achieve (if not already accredited) and maintain national accreditation. The chemical, civil, electrical, computer, and mechanical engineering programs are accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org; the electronics engineering technology, civil engineering technology, and mechanical engineering technology programs are accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org and the computer science program is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

The College of Engineering and Sciences also seeks to enhance the economic development of the community and improve the quality of life in the region through educational and intellectual opportunities. The College of Engineering and Sciences addresses the need of West Virginians to have access to engineering and computer science education. Examples of this access include the following:

- Placing students who do not meet the necessary requirements for a degree program into WVU Tech’s pre-engineering program or the Interdisciplinary
Studies Program where their progress can be carefully monitored and improved to meet the necessary admission requirements.

- Providing professional development and continuing education opportunities.
- Developing articulation agreements with schools housing pre-engineering, math and science programs and community colleges
- Offering the first two years of some engineering programs such as Aerospace so that students can study at WVU Tech and then transfer to WVU.
- Developing web-based, web-enhanced, and interactive video courses for distance delivery.

The Leonard C. Nelson College of Engineering and Sciences collaborates with the main campus of West Virginia University by the exchange of courses, mutual offering of degree programs and joint research projects with faculty at both campuses. The College of Engineering and Sciences also collaborates with other institutions in the state, as well as regional industries and businesses through educational offerings and research and development projects. The College of Engineering and Sciences seeks to attract and retain highly capable students and faculty and to foster intellectual, professional, and personal growth of its students and faculty in an open, ethical, and stimulating environment characterized by an appreciation for excellence, diversity, personal respect, and frequent collegial interactions.

**Faculty Activities**

The College of Engineering and Sciences is well equipped for study and research in engineering and computer science. WVU Tech has approximately 180,000 square feet of laboratory space. Of the engineering and science full-time faculty, over 90% are Ph.D.’s trained at some of the best institutions in the United States and abroad. In addition, about 40% of the engineering specific faculty are registered professional engineers (P.E.’s) or professional surveyors (P.S.’s).

The engineering and science faculty participate in research and professional activities that reflect the “engineering practice” and “scientific inquiry” character of the institution.

Many of the faculty have worked full-time or consulted with industry or at federal laboratories. Thus their research interests are off-campus and help to bring industry and government researchers in contact with our academic programs. A group of faculty have ongoing research programs on campus that usually offer our undergraduate students the chance to participate in meaningful research and publication. There has been a significant increase in research activities among faculty in the College of Engineering and Sciences in recent years. Major research programs have been funded by DoD, DoE, CAST, and WVEPSCoR.

**About the College of Engineering and Sciences**

The Leonard C. Nelson College of Engineering and Sciences offers degrees in:

- Bachelor of Science
  - Chemical Engineering *
  - Computer Engineering *
  - Computer Science **
  - Electrical Engineering *
  - Mechanical Engineering *
Bachelor of Science
- Biology
- Chemistry
- Computer Science
- Information Systems
- Mathematics

Bachelor of Science
- Engineering Technology
  - Engineering Technology - Civil Engineering Emphasis ***
  - Engineering Technology - Mechanical Engineering Emphasis ***
  - Engineering Technology - Environmental Engineering Emphasis
- Electronics Engineering Technology ***
- Industrial Technology

*The chemical, civil, electrical, computer, and mechanical engineering programs are accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.
**The computer science program is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

***The electronic engineering technology, civil engineering technology, and mechanical engineering technology programs are accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org.

The College of Engineering and Sciences provides the first two years of Aerospace Engineering with the last two years to be taken at WVU Morgantown.

WVU Tech has a student enrollment of approximately 1200 students and there are about 500 students enrolled in engineering or science. Overall, WVU Tech has a student-faculty ratio of about 12:1 so that students can receive individual attention and experience an open and friendly learning environment. Of the students enrolled at WVU Tech, 32 foreign countries and 25 states are represented. Approximately 80% are residents of West Virginia.

**Engineering Transfer Program and Evaluation of Transfer Credits**

The Leonard C. Nelson College of Engineering and Sciences encourages qualified students from pre-engineering programs to transfer to West Virginia University Institute of Technology. Most students who have completed a pre-engineering program can complete their degree requirements in four semesters and one summer session at WVU Tech.

While it is a common practice for students to transfer from a pre-engineering program into any of the engineering and computer science programs, WVU Tech requires special care when evaluating the courses taken at other institutions to maintain accreditation standards. To maintain accreditation standards, the Leonard C. Nelson College of Engineering and Sciences strives to ensure the integrity of the courses transferred into the program. The College of Engineering and Sciences does not have articulation agreements with every school; therefore, it must be careful when evaluating credits taken elsewhere to substitute for WVU Tech courses. Due to the requirement of ABET for assessing learning outcomes, a transfer student must spend enough time at WVU Tech so that the learning outcomes can be measured and validated. Therefore, WVU Tech has set the requirement that all transfer students take at least 24 credit hours of upper division (300+) courses in their major field. Transfer students must also take (as part of the 24 credit hours) the required capstone design course(s). Such courses are often listed as
“Senior Design,” “Systems Design,” “Senior Seminar,” or “Senior Projects.” For example, if a student is transferring into the chemical engineering program at WVU Tech, then he/she must take at least 24 credit hours of chemical engineering courses at the 300 or 400 level and must take CHE 457 Design Lab 3 and CHE 458 Design Lab 4 (which can be part of the 24 credit hours).

The College of Engineering and Sciences will follow several guidelines in the evaluation of courses to be transferred. Transfer students must supply official transcripts. In some cases, the College of Engineering and Sciences will ask for further documentation in order to evaluate transfer courses. A school catalog may be sufficient in some situations. In other cases the College of Engineering and Sciences will ask for documentation that explicitly states the detailed topical outline; prerequisites and co-requisites; days and times of the lectures; days and times of the laboratories; the author and title of each textbook used for the course; and a detailed listing of the tests, homework, projects, and final exams.

- The College of Engineering and Sciences will not equate a WVU Tech course that has a laboratory component to a course that does not have a lab component. In some cases, a combination of a lecture course and lab course will be equated to a WVU Tech course with both components.
- The College of Engineering and Sciences will not substitute technology courses for engineering courses except at the discretion of the department housing the program that the student is transferring into and with the final approval of the Dean of the College of Engineering and Sciences.
- If adequate documentation for a course cannot be supplied, the transfer student may request to take an examination to be exempt from taking the WVU Tech course. The department that offers the course in question has the discretion not to give such an examination.
- In some cases, the transfer of a course is conditioned upon successfully completing another course(s). The College of Engineering and Sciences will determine these conditions on a case-by-case basis.
- In general, lower division courses will not be equated to upper division courses. In some cases, the level of the course may be determined by course content and prerequisites rather than by course number. For example, if a math course has a 300 number but its prerequisites do not include calculus, then it will not be equated to a similarly-named, WVU Tech 300-level math course that does require calculus.
- The College of Engineering and Sciences will only accept calculus-based physics for its engineering programs.
- All other policies and rules of the institution must also be followed.

Transfer students may appeal their evaluation of courses by supplying further documentation within their first semester of studies at WVU Tech.
Aerospace Engineering-Major Code 030T
B.S.A.E.
A 2+2 Program offered with West Virginia University (Morgantown)

West Virginia University Institute of Technology (WVU Tech) and West Virginia University (WVU) have joined their resources to offer a 2+2 aerospace program, (two years at Montgomery and two years at Morgantown), leading to a Bachelor of Science in Aerospace Engineering degree. Under this arrangement, a student interested in a BSAE degree from WVU, can start as a freshman at WVU Tech in Mechanical Engineering, complete the appropriate courses in four semesters with a GPA of at least 2.0 at Montgomery and transfer to the Mechanical and Aerospace Engineering (MAE) Department at Morgantown. Upon completion of the appropriate curriculum requirements, as indicated in the pattern sheet below and the WVU catalog during the following four semesters at Morgantown, he/she will receive a BSAE degree from WVU.

Air travel has fascinated humans for a long time. Recent technical advances in aerospace travel, space exploration, and flight of manned and unmanned vehicles have been phenomenal and continue to gain in significance. Aerospace engineering deals with the science and technology of airborne and space vehicles such as airplanes, rockets, missiles and spacecraft. Aerospace technology has also been successfully adopted to improve the performance of many earth-bound vehicles such as hydrofoil ships, high-speed trains and automobiles.

The Aerospace Engineering program at WVU is designed to prepare the student for a career in the aerospace industry or in the government research and development 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 and in other engineering, as well as non-engineering fields.

The Aerospace curriculum includes studies in the disciplines encountered in the design of aerospace vehicles, missiles, rockets and spacecraft. The undergraduate curriculum includes extensive study of the basic principles of fluid dynamics, solid mechanics and structures, stability and control, thermal sciences and propulsion.

The student is involved in both theoretical and experimental studies, and is trained to integrate basic knowledge of physical and engineering sciences 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 also simultaneously pursue B.S. degrees in both aerospace engineering and mechanical engineering by completing additional courses. Information on this 155 credit hour option can be obtained from the Mechanical/Aerospace Engineering Department at WVU.

The student should refer to the University catalog and relevant WVU publications for additional information on the graduation requirements.
**Aerospace Engineering- Code 030T**  
**B.S.A.E. 2+2 with West Virginia University (Morgantown)**

<table>
<thead>
<tr>
<th>First Semester (Montgomery)</th>
<th>Second Semester (Montgomery)</th>
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<tbody>
<tr>
<td><strong>ENGL 101</strong> Composition &amp; Rhetoric (GEF F1)</td>
<td><strong>ENGL 102</strong> Composition &amp; Rhetoric (GEF F1)</td>
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<td><strong>DRET 120</strong> Drafting</td>
<td><strong>GEF F5</strong> Human Inquiry &amp; the Past</td>
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**Third Semester (Montgomery)**

| **MAE 242** Dynamics | **MAE 331** Fluid Mechanics |
| 3 | 3 |
| **MAE 243** Mechanics of Materials | **MAE 320** Thermodynamics |
| 3 | 3 |
| **MATH 251** Multivariable Calculus | **MATH 261** Elementary Differential Equations |
| 4 | 4 |
| **PHYS 111** General Physics I (GEF F2) | **PHYS 112** General Physics II (GEF F2) |
| 4 | 4 |
| **GEF F6** The Arts & Creativity | **ECON 201** Microeconomics (GEF F4) |
| 3 | 3 |
| | 17 |

**Fourth Semester (Montgomery)**

| **MAE 336** *Compressible Aerodynamics | **MAE 345** *Aerospace Structures |
| 3 | 3 |
| **MAE 365** *Flight Dynamics | **MAE 244** Dynamics & Strength Lab |
| 3 | 1 |
| **EE 221** Intro to Electrical Engineering | **EE 222** Intro to Electrical Engineering Lab |
| 3 | 1 |
| | 14 |

**Fifth Semester (Morgantown)**

| **MAE 215** *Intro to Aerospace Engr | **MAE 336** *Compressible Aerodynamics |
| 3 | 3 |
| **MAE 316** Analysis of Engineering Systems | **MAE 345** *Aerospace Structures |
| 3 | 3 |
| **MAE 335** *Incompressible Aerodynamics | **MAE 365** *Flight Dynamics |
| 3 | 3 |
| **MAE 343** Intermed Mechanics of Materials | **MAE 244** Dynamics & Strength Lab |
| 3 | 1 |
| **ECON 202** Macroeconomics (GEF F8) | **EE 221** Intro to Electrical Engineering |
| 3 | 3 |
| | 15 |

**Sixth Semester (Morgantown)**

| **MAE 423** Heat Transfer |
| 3 |
| **MAE 460** Automatic Controls |
| 3 |
| **MAE 475** *Flight Vehicle Design |
| 3 |
| **GEF F7** Global Studies & Diversity |
| 3 |
| **Technical Elective(s)** |
| 3 |

**Seventh Semester (Morgantown)**

| **MAE 426** *Flight Vehicle Propulsion | **MAE 423** Heat Transfer |
| 3 | 3 |
| **MAE 434** *Experimental Aerodynamics | **MAE 460** Automatic Controls |
| 2 | 3 |
| **MAE 456** *CAD/Finite Element Analysis | **MAE 475** *Flight Vehicle Design |
| 3 | 3 |
| **MAE 476** *Space Flight and Systems | **GEF F7** Global Studies & Diversity |
| 3 | 3 |
| ****Technical Elective(s)** | **Technical Elective(s)** |
| 3 | 3 |
| | 14 |

**Eighth Semester (Morgantown)**

| **Technical Elective(s)** |
| 3 |

*Taught at WVU campus only in the semester indicated.*

(i) Six hours of technical electives must be selected from a list of approved Aerospace Engineering technical electives after consulting with the advisor; the courses selected should form a clear and consistent pattern according to the career objectives of the student.

(ii) GEFs F5, F6, and F7 must be selected from the approved list of courses to meet the University and the College GEF requirements. **All Electives must be approved by your advisor.**

Total Hours: 122
Chemical Engineering – Major Code 032T
B.S.Ch.E.

The Chemical Engineering program emphasizes undergraduate instruction. Graduates of this program have the skills and knowledge to become effective professional practitioners in a variety of industries and service organizations, as well as to be successful in programs of advanced study.

The Chemical Engineering department supports the development of West Virginia, the nation, and the global community by educating graduates who are employed in organizations that significantly contribute to the well-being of humanity.

This mission is fulfilled by the achievement of the following program objectives:

• Program graduates will find employment in the energy, chemical, materials processing, biotechnology, and related industries. They may take positions in manufacturing, design, environmental affairs, technical service, and technical sales.
• Program graduates will progress into positions having significant professional responsibilities. These responsibilities may include management and supervisory duties, significant contributions on projects having value to the employer, and entrepreneurial activity.
• Program graduates will continue with advanced study. This may include graduate work in engineering, business, or the sciences, as well as the study of medicine or law.

In order to achieve the educational objectives, the academic program will produce the following outcomes. Our graduates will be able to:

• Use the principles of chemistry, physics, and mathematics in the solution of engineering problems.
• Use engineering science – conservation relations, thermodynamics, transport phenomena, and kinetics - in the solution of engineering problems.
• Design systems and products that meet economic, quality, safety, and environmental requirements.
• Use creativity and synthesis skills in the solution of open-ended problems.
• Devise experiments, to use principles of experimental design, to collect data effectively, to evaluate data using appropriate statistical tools, and to draw sound conclusions from the analysis.
• Use computing tools – mathematical analysis, information retrieval, document preparation, and communications.
• Apply good safety practices and practice good environmental stewardship in both laboratory and design work.
• Effectively communicate ideas, plans, and research in verbal and written form.
• Gain new knowledge and/or enhance their skills through independent learning.
• Work effectively as an individual and as a team member.
• Apply professional codes of conduct to resolve ethical dilemmas.
• Assess the political, cultural, economic, and aesthetic aspects of engineering practice, and to recognize the potential impact of technological developments on current events.
These outcomes are achieved through rigorous courses in mathematics, chemistry, physics, chemical engineering, and the humanities and sciences. Electives in other disciplines are required, enabling graduates from this program to work effectively with professionals having other areas of expertise.

**Life Sciences Emphasis Track**

An emphasis track in the life sciences is available for those students who have an interest in the medical or biotechnology fields. This track contains four additional credit hours beyond the standard curriculum, but includes a minor in Biology along with the B.S. degree in Chemical Engineering. Students are to consult with their advisor concerning elective sequences in other areas such as management, environmental protection, public policy, etc. A number of options are available, and many are outlined in the Chemical Engineering Student Handbook.
### Chemical Engineering-Code 032T  
**B.S.Ch.E.**

#### First Semester

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<tr>
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<td>CHEM 235</td>
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#### Seventh Semester

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**Notes:**  
1) Chemical and Enhancement electives must be selected with advisor approval.

**Total Hours: 126**
## Chemical Engineering-ET15
### B.S.Ch.E.
#### Life Sciences Emphasis Track (Includes Biology Minor)

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1. Chemical Engineering and Biology electives must be selected with advisor approval.
2. Courses may need to be rearranged to accommodate alternate year offerings in biology.

Total Hours - 128
Civil Engineering – Major Code 034T
B.S.C.E.

Civil Engineering, the most diverse branch of engineering, is directly related to the planning, design, construction, and maintenance of the infrastructure that directly affects public life. The infrastructure includes bridges, buildings, foundations, dams, sanitary and solid waste disposal systems, highways, airport facilities, transportation systems, waterways, hydroelectric installations, pipelines, coal preparation and loading facilities, and other systems and structures. Civil engineering also involves the understanding of environmental issues and geotechnical principles and how they relate to the design of the infrastructure.

Engineering students get a sound basic knowledge of science and a set of core courses in the humanities and social sciences. The Civil Engineering curriculum has been designed to give the student a broad coverage of all fields of civil engineering with some flexibility to explore a particular field of choice. This approach gives the WVU Tech graduate a well-rounded background to handle civil engineering projects.

Design is incorporated across the Civil Engineering curriculum with the design experience beginning early with the Surveying and Mechanics of Materials courses. Design exposure continues in the junior and senior years, with a minimum of 11 courses having design components for a total of 17.5 credit hours of design. Design content is incorporated in the required courses such as Introductory Soil Mechanics, Hydraulic Engineering, Construction Materials, Transportation Engineering, Introduction to Environmental Engineering, the required structural design elective (Steel Design or Reinforced Concrete Design), the required geotechnical elective (Foundation Engineering, Earthwork Design, or Groundwater and Seepage), the required environmental elective (Advanced Sanitary Engineering, Solid Waste Management, Engineering Hydrology, or Advanced Hydraulic Engineering), and the required transportation elective (Highway Engineering, Pavement Design, or Traffic Engineering). Two additional electives (one CE Elective and one Technical Elective) must contain a minimum total of two credit hours of design content.

The design component is completed with a capstone design course (Integrated Civil Engineering Design) in which student teams are responsible for the completion of a comprehensive civil engineering project which involves several civil engineering disciplines with oral and written presentations of the project. Discussion and consideration of constraints such as economic factors, safety, reliability, aesthetics, ethics, and environmental impact are incorporated as a normal part of most design courses. Aesthetics and environmental impact are stressed in the Introduction to Environmental Engineering course; and ethics, safety, and professional issues are covered in the Senior Engineering Seminar course. In addition to design, the Integrated Civil Engineering Design course includes principles of project and/or construction management, cost analysis and estimating, and scheduling.

Program Mission/Goals

- To prepare students to be able to apply science and mathematics to the analysis of civil engineering problems and the design of infrastructure systems to increase human welfare and promote sustainable development.
- To prepare well-rounded students to practice engineering in a professional environment and to be successful in graduate school should they choose to attend.
• To help students recognize the role of the civil engineer in contemporary society, especially with respect to the societal and environmental contexts of civil engineering projects.
• To energize students to maximize individual potential, including acquisition of necessary skills and recognition of the need for continuing education and lifelong growth and development.

**Educational Objectives**

• Our graduates will obtain employment in the civil engineering field and will hold positions having significant professional responsibility.
• Our graduates will obtain professional registration.
• Our graduates will be prepared academically and those who choose advanced studies will be successful.
• Our graduates will be equipped to learn new skills as they progress in their careers and, as a result, will possess the capabilities to move to positions having increased leadership, mentoring, and management responsibilities.

**Program Outcomes**

To meet the educational objectives, the Civil Engineering Program will achieve and continually assess thirteen outcomes. In achieving these program outcomes, our graduates will demonstrate:

• An ability to apply knowledge of mathematics, science, and engineering.
• An ability to design and conduct experiments, as well as to analyze and interpret data.
• An ability to design civil engineering projects or components of projects to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
• An ability to function on multi-disciplinary teams.
• An ability to identify, formulate, and solve civil engineering problems.
• An understanding of professional and ethical responsibility.
• An ability to communicate effectively.
• The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
• A recognition of the need for, and an ability to engage in life-long learning.
• A knowledge of contemporary issues.
• An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
• An ability to apply sound safety practices in laboratory and design work.
• An ability to develop and manage budgets and schedules.

These program outcomes are achieved by graduates through a solid foundation in mathematics, chemistry, and physics along with a strong understanding of basic engineering principles. Added to this is a broad exposure to the humanities and social sciences and an extensive development of the fundamentals of material science, environmental, geotechnical, hydrotechnical, structural, and transportation engineering. Specialization in one or more branches of civil engineering is possible by a selection of civil engineering and technical electives during the junior and senior years.
# Civil Engineering Pattern Sheet-Code 034T
## B.S.C.E.

### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 101</td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
<td>3</td>
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<tr>
<td>WUE 191</td>
<td>First Year Seminar</td>
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</tr>
<tr>
<td>CHEM 115</td>
<td>Fund of Chemistry I (GEF F8)</td>
<td>4</td>
</tr>
<tr>
<td>DRET 120</td>
<td>Drafting I</td>
<td>2</td>
</tr>
<tr>
<td>MATH 155</td>
<td>Calculus I (GEF F3)</td>
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### Second Semester

<table>
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<tbody>
<tr>
<td>ENGL 102</td>
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<td>3</td>
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<tr>
<td>MAE 241</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 111</td>
<td>Software Tools for Engr</td>
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</tr>
<tr>
<td>CHEM 116</td>
<td>Chemistry II (GEF F8)</td>
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<tr>
<td>MATH 156</td>
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### Third Semester

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<tbody>
<tr>
<td>MAE 242</td>
<td>Dynamics</td>
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<tr>
<td>MAE 243</td>
<td>Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>CE 204</td>
<td>Surveying</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251</td>
<td>Multivariable Calculus</td>
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<tr>
<td>PHYS 111</td>
<td>General Physics (GEF F2)</td>
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### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MAE 331</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CE 361</td>
<td>Structural Analysis I</td>
<td>4</td>
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<tr>
<td>MATH 261</td>
<td>Elementary Differential Equations</td>
<td>4</td>
</tr>
<tr>
<td>CE 331</td>
<td>Transportation Engineering</td>
<td>3</td>
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<td>GEOL 312</td>
<td>Geology</td>
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### Fifth Semester

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<tr>
<td>CE 312</td>
<td>Construction Materials</td>
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<tr>
<td>CE 421</td>
<td>Hydraulic Engineering</td>
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<tr>
<td>CE</td>
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<tr>
<td>MATH 448</td>
<td>Probability &amp; Statistics</td>
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<tr>
<td>GEF F5</td>
<td>Human Inquiry &amp; the Past</td>
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### Sixth Semester

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
<td>CE 351</td>
<td>Introductory Soil Mechanics</td>
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<tr>
<td>CE 347</td>
<td>Intro Environmental Engr</td>
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<td>CE</td>
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<tr>
<td>ENGL 305</td>
<td>Technical Writing</td>
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### Seventh Semester

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<tr>
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<tr>
<td>CE</td>
<td>Elective</td>
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<td>ECON 401</td>
<td>Managerial Econ. (GEF F4)</td>
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<td><strong>Technical Elective</strong></td>
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<tr>
<td>GEF F6</td>
<td>The Arts and Creativity</td>
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### Eighth Semester

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<td>Elective</td>
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<td>ENGR 401</td>
<td>Senior Engineering Seminar</td>
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<td>ENGR 402</td>
<td>Fund of Engineering Review</td>
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<tr>
<td><strong>Technical Elective</strong></td>
<td>3</td>
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<tr>
<td>GEF F7</td>
<td>Global &amp; Diversity Studies</td>
<td>3</td>
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</tbody>
</table>

**Technical Electives must be approved by C.E. Dept.**

### NOTES:
1. Four electives, one from structures, environmental, transportation and geotechnical are required.
2. One CE Elective and two Technical Electives (approved by Dept.) are also to be taken. These three courses must contain at least 2 hours of ABET design content (combined.)

Total Hours - 125
CE Electives

CE 411 Pavement Design (2)
CE 422 Adv. Hydraulic Engineering (1.5)
CE 425 Engineering Hydrology (1)
CE 431 Highway Engineering (2)
CE 432 Traffic Engineering (2)
CE 444 Adv. Sanitary Engineering (2)
CE 446 Solid Waste Management (1.5)
CE 451 Foundation Engineering (2.5)
CE 452 Groundwater & Seepage (1.5)
CE 453 Earthwork Design (2)
CE 461 Structural Analysis 2 (1)
CE 462 Reinforced Concrete Design (3)
CE 463 Steel Design (3)
CE 464 Timber Design (2)
CE 497 Research (0)

** Number in parenthesis () denotes hours of design content
Computer Engineering – Major Code 035T  
B.S.Cp.E.

The effects of computer engineering are seen in all facets of our lives. Computer engineers develop systems that can perform very useful operations such as what can be found in high-end computers, devices for networking switches and hubs and for manufacturing control, and systems in automobiles, fax machines, and microwave ovens. Even cell phones have sophisticated computational operations that provide useful features and capabilities, and the work of computer engineers has enabled this technology to be readily available.

The Bachelor of Science in Computer Engineering degree program provides students with the knowledge and skills to ensure successful employment and advancement as an engineer, as well as, to pursue further education. We give students a solid foundation in mathematics and the sciences with a special emphasis on the fundamentals of computer science and electrical engineering relevant to computer engineering. We provide the general education to put the technical knowledge into perspective. The student can pursue special areas of interest through several elective courses. Upon graduation the student will be well prepared to be successful and productive in the workforce.

One of the key features of engineering that sets it apart from other disciplines is design. Design is the creative process of putting ideas, components, and systems together to develop solutions to problems and needs. The curriculum encourages design-oriented thinking at a fundamental level and culminates in the capstone senior design course sequence in which many factors such as technical, economic, environmental, ethical and legal, health and safety, manufacturability, political, social, sustainability, and realistic standards are considered. The program further encourages the development of good communication skills in written, oral and electronic forms.

Educational Objectives

After graduation students will accomplish one or more of the following objectives:

- **Professional Practice**  
  Computer engineering graduates will be successful in professional practice in engineering.

- **Post-graduate Education**  
  Computer engineering graduates will be successful in pursuing advanced education.

- **Advancement**  
  Computer engineering graduates will successfully advance in their careers.

Program Outcomes

- **Engineering Science**  
  Students will attain an ability to apply knowledge of mathematics, science, and engineering.
• **Engineering Experimentation**
  Students will attain an ability to design and conduct experiments, as well as to analyze and interpret data.

• **Engineering Design**
  Students will attain an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

• **Teamwork**
  Students will attain an ability to function on multidisciplinary teams.

• **Problem Solving**
  Students will attain an ability to identify, formulate, and solve engineering problems.

• **Engineering Ethics**
  Students will attain an understanding of professional and ethical responsibility.

• **Effective Communication**
  Students will attain an ability to communicate effectively.

• **Impact of Engineering**
  Students will attain the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

• **Life-long Learning**
  Students will attain a recognition of the need for, and an ability to engage in life-long learning.

• **Contemporary Issues**
  Students will attain a knowledge of contemporary issues.

• **Modern Tools**
  Students will attain an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
The CPE/EE electives are those courses that have a CPE or EE course prefix.
The Technical electives are to be selected from an approved list.

Total Hours - 126
Computer scientists are distinguished from other computer professionals, such as information technology specialists and system administrators, by the higher level of theoretical expertise, the innovation they apply to complex problems, and the extensive knowledge and experience they possess in software engineering. A computer scientist can often expect to work on multidisciplinary projects such as robotics, human-computer interaction, advanced computer graphics, and artificial intelligence based systems.

The Bachelor of Science in Computer Science (BSCS) program at WVU-Tech is a 120 credit hour program of study with 60 hours of computer science theory and languages, 21 hours of calculus-based mathematics, 6 hours of upper division technical electives, and 8 hours of laboratory science. The first two years of study focus on the fundamentals of computer science concepts and provide a firm foundation in mathematics. During the junior and senior years, students are introduced to advanced concepts in the science of computation and are presented the opportunity to take elective courses such as cryptology, computer graphics, artificial intelligence and image processing. The two semester senior project sequence provides the culminating experience for the Computer Science students. Students also have the opportunity to participate in undergraduate research projects with the computer science faculty.

Program Educational Objectives

In three to five years after graduation, the graduates of the WVU Tech BS degree program in Computer Science will do the following:

- Demonstrate success in the professional practice of Computer Science through recognition of their contributions to an organization or entrepreneurial accomplishments.
- Alternatively or additionally, demonstrate success in the field of computing by continuing formal education through earning post graduate degrees, technical certificates, or other technical training.
- Demonstrate lifelong learning habits either as a professional or a researcher in their field.

Student Outcomes

The BS degree in Computer Science at WVU Tech enables students to attain:

- An ability to apply knowledge of computing and mathematics appropriate to the program’s student outcomes and to the discipline
- An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
- An ability to function effectively on teams to accomplish a common goal
- An understanding of professional, ethical, legal, security and social issues and responsibilities
- An ability to communicate effectively with a range of audiences
- An ability to analyze the local and global impact of computing on individuals, organizations, and society
• Recognition of the need for and an ability to engage in continuing professional development
• An ability to use current techniques, skills, and tools necessary for computing practice.
• An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
• An ability to apply design and development principles in the construction of software systems of varying complexity.

**Computer Science Minor**

Any student admitted to a degree program other than Computer Science may complete a minor in Computer Science. The Computer Science minor consists of seven Computer Science courses in the following three categories: 1. **CS 121** and **CS 122**; either 2(a). **CS 201**, **CS 222**, and **CS 310** (programming track) or 2(b). **CS 231**, **CS 265**, and **CS 350** (systems track); and 3. two courses chosen from **CS 321**, **CS 324**, **CS 410**, **CS 450**, **CS 465**, or **CS 472**. Students must earn a grade of C or better for each of the courses counted towards the minor.
# Computer Science Code 036T

**B.S.**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>ENGL 101 Composition &amp; Rhetoric (GEF F1) 3</td>
<td>ENGL 102 Composition &amp; Rhetoric (GEF F1) 3</td>
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<tr>
<td>CS 121 Computer Science 1 4</td>
<td>CS 122 Computer Science 2 4</td>
</tr>
<tr>
<td>GEF F5 Human Inquiry and the Past 3</td>
<td>GEF F6 The Arts and Creativity 3</td>
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<tr>
<td>Elective 3</td>
<td>GEF F7 Global Studies and Diversity 3</td>
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<tr>
<td>WVUE 191 First Year Seminar 1</td>
<td>GEF F8 Focus 3</td>
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<tr>
<td>Third Semester</td>
<td>Fourth Semester</td>
</tr>
<tr>
<td>MATH 155 Calculus I (GEF F3) 4</td>
<td>MATH 156 Calculus II (GEF F8) 4</td>
</tr>
<tr>
<td>GEF F2 Laboratory Science 4</td>
<td>GEF F8 Laboratory Science* 4</td>
</tr>
<tr>
<td>CS 201 Data Structures 3</td>
<td>CS 310 Principles of Prog Languages 3</td>
</tr>
<tr>
<td>CS 231 Intro to Computer Organization 3</td>
<td>CS 222 Software Engineering 3</td>
</tr>
<tr>
<td>CS 265 C Programming 2</td>
<td>CS 220 Discrete Mathematics 3</td>
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<tr>
<td>Fifth Semester</td>
<td>Sixth Semester</td>
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<tr>
<td>MATH 251 Multivariable Calculus 4</td>
<td>MATH 441 Applied Linear Algebra 3</td>
</tr>
<tr>
<td>ECON 401 Managerial Economics (GEF F4) 3</td>
<td>ENGL 305 Technical Writing (W) 3</td>
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<tr>
<td>CS 321 Introduction to Networking 3</td>
<td>CS 350 Computer Systems Concepts 3</td>
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<td>CS 221 Analysis of Algorithms 3</td>
<td>CS 324 Database Management 3</td>
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<td>CS Elective 3</td>
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<tr>
<td>Seventh Semester</td>
<td>Eighth Semester</td>
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<tr>
<td>CS 450 Operating System Structure 3</td>
<td>CS 410 Compiler Construction 3</td>
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<tr>
<td>CS 480 Senior Design Seminar 2</td>
<td>CS 481 Senior Design Project 3</td>
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<td>MATH 448 Probability and Statistics 3</td>
<td>CS 479 Advanced CS Math 3</td>
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<td>CS Elective** 3</td>
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<td>CS Elective** 3</td>
<td>Technical Elective*** 3</td>
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<td>Total Hours: 120</td>
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Approved Technical Electives for BS in Computer Science

**Accounting**
- ACCT 201 Principles of Accounting
- ACCT 202 Principles of Accounting
- ACCT 300-400 Level*

**Biology**
- BIOL 111 General Biology I**
- BIOL 112 General Biology II**
- BIOL 300-400 Level*

**Chemical Engineering**
- CHEE 300-400 Level*

**Chemistry**
- CHEM 111 General Chemistry**
- CHEM 112 General Chemistry**
- CHEM 115 College Chemistry**
- CHEM 116 College Chemistry**
- CHEM 300-400 Level*

**Computer Engineering**
- CPE 271
  - CPE 300-400 Level*

**Computer Science**
- CS 300-400 Level

**Information Systems**
- ISYS 325 C#
- ISYS 366 e-Commerce
- ISYS 270 Linux

**Civil Engineering**
- CE 300-400 Level*

**Electrical Engineering**
- EE 221 Circuits I
- EE 223 Circuits II
- EE 300-400 Level*

**Finance**
- FINC 300-400 Level*

**General Engineering**
- MAE 241 Statics
- MAE 242 Dynamics
- MAE 243 Mechanics of Materials
- MAE 331 Fluid Mechanics

**Mechanical Engineering**
- MAE 300-400 Level*

**Mathematics**
- MATH 261 Elementary Differential Equations
- MATH 300-400 Level except Math378*

**Physics**
- PHYS 101 College Physics I**
- PHYS 102 College Physics II**
- PHYS 111 Physics for Scientists and Engineers I**
- PHYS 112 Physics for Scientists and Engineers II**
- PHYS 300-400 Level*

Special topic electives from other departments must be approved in advance.
* Check with Department Chair for approval
** Unless taken as a science requirement

Other courses are accepted as technical electives only with advance approval from the department.
Electrical Engineering – Major Code 037T
B.S.E.E.

Electrical engineering is one of the most dynamic fields of engineering today. New technologies are under constant development and new industries are emerging as a result of the efforts of electrical engineers.

The Electrical Engineering curriculum provides a well-rounded education to meet the needs and challenges of our modern society. The student will receive a solid background in mathematics and science, as well as, a strong foundation in the major areas of electrical engineering (circuits and systems, computers, electronics, electromagnetic fields, controls, communications, electric machinery and power) supported by practical-oriented laboratory assignments. The student can pursue special areas of interest through several elective courses. The student will be well prepared to be successful in the workforce and be productive.

One of the key features of engineering that sets it apart from other disciplines is design. Design is the creative process of putting ideas, components, and systems together to develop solutions to problems and needs. The curriculum encourages design-oriented thinking at a fundamental level and culminates in the capstone senior design course sequence in which many factors such as technical, economic, environmental, ethical and legal, health and safety, manufacturability, political, social, sustainability, and realistic standards are considered.

The ability of the engineer to communicate in writing and speech is very important as the modern engineer is expected to express technical concepts and defend technical decisions in front of non-technical people. Therefore, courses in English, social science, and the humanities are vital in the Electrical Engineering curriculum.

Educational Objectives

After graduation students will accomplish one or more of the following objectives:

- **Professional Practice**
  Electrical engineering graduates will be successful in professional Practice in Engineering.

- **Post-graduate Education**
  Electrical engineering graduates will be successful in pursuing advanced education.

- **Advancement**
  Electrical engineering graduates will successfully advance in their careers.

The Electrical Engineering program has the following Program Outcomes:

- **Engineering Science**
  Students will attain an ability to apply knowledge of mathematics, science, and engineering.

- **Engineering Experimentation**
  Students will attain an ability to design and conduct experiments, as well as to analyze and interpret data.
• **Engineering Design**
  Students will attain an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

• **Teamwork**
  Students will attain an ability to function on multidisciplinary teams.

• **Problem Solving**
  Students will attain an ability to identify, formulate, and solve engineering problems.

• **Engineering Ethics**
  Students will attain an understanding of professional and ethical responsibility.

• **Effective Communication**
  Students will attain an ability to communicate effectively.

• **Impact of Engineering**
  Students will attain the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

• **Life-long Learning**
  Students will attain a recognition of the need for, and an ability to engage in life-long learning.

• **Contemporary Issues**
  Students will attain a knowledge of contemporary issues.

• **Modern Tools**
  Students will attain an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
# Electrical Engineering Code 037T
## B.S.E.E

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<thead>
<tr>
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<tr>
<td><strong>WVUE 191</strong></td>
<td>First Year Seminar</td>
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<tr>
<td><strong>CS 112</strong></td>
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<tr>
<td><strong>CHEM 115</strong></td>
<td>Fund of Chemistry I (GEF F8)</td>
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<tbody>
<tr>
<td><strong>MATH 251</strong> Multivariable Calculus</td>
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<tr>
<td><strong>PHYS 111</strong> General Physics (GEF F2)</td>
</tr>
<tr>
<td><strong>EE 200</strong> ECE Software Tools</td>
</tr>
<tr>
<td><strong>EE 221</strong> Intro Electrical Engineering</td>
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<tr>
<td><strong>EE 222</strong> Intro Electrical Engineering Lab</td>
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<tr>
<td><strong>GEF F7</strong> Global and Diversity Studies</td>
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<tbody>
<tr>
<td><strong>EE 311</strong> Junior Instrumentation Lab</td>
</tr>
<tr>
<td><strong>EE 329</strong> Signals and Systems II</td>
</tr>
<tr>
<td><strong>EE 335</strong> Electromech. Energy Conv.</td>
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<tr>
<td><strong>EE 336</strong> Elect. Energy Conv. Lab</td>
</tr>
<tr>
<td><strong>ENGL 305</strong> Technical Writing</td>
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<tr>
<td><strong>MATH 441</strong> Applied Linear Algebra</td>
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<tbody>
<tr>
<td><strong>EE 355</strong> Analog Electronics</td>
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<tr>
<td><strong>EE 356</strong> Analog Electronics Lab</td>
</tr>
<tr>
<td><strong>EE 327</strong> Signals &amp; Systems I</td>
</tr>
<tr>
<td><strong>CPE 310</strong> Microprocessor Systems</td>
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<tr>
<td><strong>EE 345</strong> Engineering Electromagnetics</td>
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<td><strong>MATH 448</strong> Probability &amp; Statistics</td>
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<th>Sixth Semester</th>
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<tr>
<td><strong>EE 481</strong> Senior Design Projects</td>
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<td><strong>ECON 401</strong> Managerial Econ.(GEF F4)</td>
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<td><strong>EE 461</strong> Intro Communication Systems</td>
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<td><strong>EE 411</strong> Fund. Of Control Systems</td>
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The EE/CPE electives are those courses that have an EE or CPE course prefix. The Technical electives are to be selected from an approved list.

Total Hours – 125
## Electrical Engineering-Code ET18
### B.S.E.E. (Electrical Energy Systems Area of Emphasis)

#### First Semester

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<tr>
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#### Second Semester

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<td>Signals &amp; Systems I</td>
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#### Sixth Semester

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#### Seventh Semester

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#### Eighth Semester

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The EE/CPE electives are those courses that have an EE or CPE course prefix. The Technical electives are to be selected from an approved list.

Total Hours - 125
Mechanical Engineering – Major Code 042T
B.S.M.E.

Mechanical engineering is one of the largest technical professions with a history of significant contributions to the industrial development since the dawn of human civilization. History of technology is replete with stories of successful applications of ideas and concepts from mechanical engineering that have brought tremendous prosperity to industrialized nations starting with the industrial revolution. Mechanical engineers also play a vital role in maintaining the leadership in technology to insure the survival and growth of an industrialized society.

In order to prepare students for the challenges awaiting them in the real world, the Mechanical Engineering Department at WVU Tech offers a practice-oriented education with strong emphasis on hands-on experience at all levels of its BSME program. The curriculum is designed to develop the skills necessary to succeed in a field that is both challenging and rewarding. The Mechanical Engineering Program includes sequential courses in several areas, such as English, mathematics, chemistry, physics, humanities, computer science, general engineering science and foundation courses in mechanical engineering such as thermodynamics, machine design, heat transfer, mechanical vibrations, control systems and materials science. Technical electives in thermal and mechanical systems are included in the program to enable graduates to pursue special areas of interest.

Practicing mechanical engineers consider these courses as essential for a sound mechanical engineering curriculum. They are also mandated by the ABET, the national organization that accredits engineering programs in the United States. The Mechanical Engineering curriculum is designed to include meaningful design experience in several of the required and elective courses. Students develop analytical and design skills systematically by successfully completing sequential courses such as Statics, Dynamics, Mechanics of Materials, Dynamics of Machines, Machine Design and Systems Design I and II. Open-ended, multiple-solution design concept is incorporated across the curriculum starting with Mechanics of Materials in their sophomore year and ending with two capstone design courses during their senior year. In the capstone design courses, students learn how to apply the previously acquired knowledge in science, technology, humanities, communications, ethics, economics, etc.

The Mechanical Engineering faculty also recognizes the dynamic nature of modern technology in which advances are inevitable and the need for our students to be prepared to meet these challenges. The curriculum is therefore under constant review, and changes are introduced in response to the changing needs of the industry and job market.

Departmental Mission

The mission of the Mechanical Engineering Department at WVU Tech is to produce high quality mechanical engineers with the best possible education that will enable them to become competent members of the profession able to handle the most challenging jobs. The Mechanical Engineering Department intends to fulfill this mission by maintaining high academic quality that insures continued ABET accreditation.
Departmental Goals

The Mechanical Engineering faculty is committed to the following goals:

• Provide an atmosphere of dedicated teaching and support services to the students with the best possible classroom instructions, counseling, academic planning, career guidance and personal attention to facilitate growth and success in academic and professional work.
• Provide quality learning tools and academic environment that would produce technically competent mechanical engineers who are able to meet the needs of employers from government, industry and business.
• Encourage and nurture students’ interest in engineering as a profession.
• Help students develop self-motivation, good work habits, personal discipline, and skills needed to be a professionally successful member of the society.

Educational Objectives

The following Educational Objectives have been adopted by the faculty of the Mechanical Engineering Department. Graduates of the WVU Tech Mechanical Engineering program:

• Are successful in the practice of mechanical engineering.
• Advance to positions of technical and/or managerial leadership.
• Are successful in graduate studies, if they choose to pursue advanced education.
• Are able to obtain professional registration, if they choose to, after appropriate professional experience.
• Are dedicated to life-long learning in their professional career.

Student Outcomes

Consistent with the mission of WVU Tech and in compliance with the ABET criteria, the Program emphasizes the development of a well-rounded mechanical engineer. Upon graduation they will be able to demonstrate:

• Knowledge of mathematics, sciences and fundamentals of engineering necessary for a successful career in engineering practice.
• The ability to identify, formulate, analyze problems and develop solutions based on standard engineering norms and practices.
• The ability to apply their analytical skills and creativity to investigate the adequacy of a design and to make design improvements where necessary.
• The ability to conduct mechanical measurements; collect, evaluate and present experimental results; design and build experiments to investigate engineering phenomena including the analysis and interpretation of data.
• Knowledge of and the ability to use the computer, standard software and computing tools appropriate to their work.
• Knowledge of safety practices in experimental work.
• Knowledge of environmental requirements and constrains on engineering practice.
• Knowledge and ability to design mechanical and thermal systems, components, or processes to meet desired needs.
• The ability to function as a productive member of multi-disciplinary teams.
• Knowledge of professional and ethical codes of conduct and responsibilities.
• The ability to effectively communicate in oral and written forms.
• Knowledge of the impact of engineering solutions in a global and societal context as a result of having a broad education.
• The ability to recognize the need for and engage in life-long learning.
• The ability to demonstrate knowledge of contemporary issues.
• The ability to work professionally in thermal and mechanical systems areas including the design and realization of such systems.

Assessment

The Mechanical Engineering Program at WVU Tech has a multi-faceted assessment process in place which includes: students’ classwork and portfolios such as design projects; course evaluations; faculty evaluations; exit surveys of graduating seniors; alumni surveys; advisory board surveys; employer surveys; placement data of graduates; and the results of the Fundamentals of Engineering (FE) Examination. The feedback from these sources is continuously used by the Mechanical Engineering faculty to update the curriculum and to make the changes necessary to maintain or enhance the quality of the program.
# Mechanical Engineering-Code 042T
## B.S.M.E.

### First Semester

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<thead>
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All Technical Electives must be approved by the M.E. Department Advisors.

Total Hours - 125
Electronic Engineering Technology – Major Code 038T

B.S.E.E.T.

The Bachelor of Science in Electronic Engineering Technology program is a plus-two program that builds on two-year Electrical or Electronics Engineering Technology programs. An associate of science degree in Electrical or Electronics Engineering Technology or the equivalent is required for entrance into the program. Graduates of associate of science degree Electrical/Electronic Engineering Technology programs may enter the program directly as juniors based on an evaluation of their transcripts. In all cases, an evaluation of transfer credits will be conducted to validate course requirements. This evaluation determines if additional lower division courses will be required to meet the prerequisites of upper division courses in the curriculum.

The B.S.E.E.T program is designed to produce applications-oriented graduates with an electronics background to fulfill the demands created by rapidly changing technology. Technical specialty courses in the curriculum emphasize process control, instrumentation, communications, and microprocessor applications. Course offerings are designed to be consistent with the evolution of energy-related and computer-based industrial needs of the state and region.

The Bachelor of Science Electronic Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org.

Program Objectives

Graduates of the bachelors’ degree program in Electronic Engineering Technology will:

- Demonstrate an awareness of contemporary social and economic issues, and the relationship of those issues to their professional electronics engineering practice.
- Demonstrate the need to maintain their technical skills and develop new ones through personal development and life-long learning.
- Be capable of conveying technical information through their proficiency in written and spoken communication skills.
- Demonstrate an appreciation and understanding for cultural and ethnic diversity in the workplace.
- Demonstrate understanding of professional and ethical responsibilities to their field and to society.
- Be able to acquire and maintain successful employment using their skills in applied electronics engineering technology.

Student Outcomes

Upon completion of the BS program in Electronic Engineering Technology, graduates will be able to:

- Apply principles of mathematics and science to perform technical calculations and solve electronic engineering technology problems.
- Demonstrate the ability to identify, formulate, and present creative solutions to technical problems.
- Perform competently in a laboratory setting.
- Operate modern computational tools for problem solving, including scientific calculators, computers, and appropriate software.
• Demonstrate the ability to communicate and function effectively with members of multi-disciplinary teams.
• Demonstrate a general knowledge of professional ethical responsibility toward employers, customers, and society.
• The graduate will recognize the need for obtaining additional education, training, or certification as a means of maintaining and improving the skills necessary for career advancement and personal fulfillment.
• Demonstrate ability to building, operate, test, and maintain electrical/electronic systems while applying skills in circuit analysis and design, computer programming, analog and digital electronics, and microcomputers.
• Apply principles of chemistry and physics along with advanced mathematics for electrical/electronic circuit design and analysis.
• Demonstrate project management techniques on electronic engineering projects.
• Apply principles of advanced mathematics to electrical/electronic systems.
• Demonstrate knowledge of control and instrumentation systems, power systems, communication systems, or computer systems.
• Demonstrate knowledge of the impact of engineering technology solutions in a societal context.
• Apply written, oral, and graphical communication in the class work, and proper use of references.

Careers in Electronic Engineering Technology

The program prepares graduates with the technical and managerial skills necessary to enter careers in the design, application, installation, manufacturing, testing, operation, oversight, and maintenance of electrical or electronic systems. Baccalaureate degree graduates are also prepared for development and implementation of new electrical/electronic systems.

Job titles of recent graduates have included: Electronic Technician, System Representative II, Service Engineer, Engineering Technician, Maintenance Technician, Foreman/Supervisor/Manager, Electrical Engineer, Sales Engineer, Process Engineer, Design Engineer, Instrumentation Engineer, Control Systems Engineer, Quality Assurance Manager.

Plus-Two Baccalaureate Transfer Options

Students who have completed course work or associate degree programs in engineering-oriented programs at other institutions and wish to continue their studies toward a Bachelor of Science degree in engineering technology may do so. For more information, contact the Chair of the Engineering Technology Department.
Electronic Engineering Technology-Code 038T
B.S.E.E.T.

### Fifth Semester

<table>
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<th>Course Code</th>
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<tr>
<td>CHEM 115</td>
<td>Fund of Chemistry</td>
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<tr>
<td>ECON 202</td>
<td>Principles of Economics I (GEF–F4)¹</td>
<td>3</td>
</tr>
<tr>
<td>MATH 315</td>
<td>Advanced Technical Math</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 305</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ELET 315</td>
<td>Electronic Measurement &amp; Inst</td>
<td>4</td>
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### Sixth Semester

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>GNET 308</td>
<td>Advanced Computer Apps, or</td>
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<td></td>
<td>MANG 386 or MATH 261/300+</td>
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<tr>
<td>ELET 337</td>
<td>Communication Systems II</td>
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<tr>
<td>GEF F5</td>
<td>Human Inquiry &amp; the Past (GEF–F5)¹</td>
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<td>ELET 410</td>
<td>Control Systems Technology</td>
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<tr>
<td></td>
<td>Technical Specialty Elective²</td>
<td>3</td>
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### Seventh Semester

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<tr>
<td>GEF F7</td>
<td>Global Studies &amp; Diversity (GEF–F7)¹</td>
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<td>ELET 420</td>
<td>Microprocessors &amp; Digital Sys</td>
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<tr>
<td>ELET 436</td>
<td>Power Systems &amp; PLCs</td>
<td>4</td>
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<td>GNET 410</td>
<td>“C” Programming for Tech</td>
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<td>Project Management</td>
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### Eighth Semester

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<tr>
<td>ELET 426</td>
<td>Microprocessor-based Data Acquisition &amp; Control</td>
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<td>GEF F6</td>
<td>The Arts and Creativity (GEF-F6)¹</td>
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<td>GNET 489</td>
<td>Senior Seminar &amp; Project²</td>
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¹All requirements of the General Education Foundations curriculum must be met. Some of these requirements are normally satisfied by courses taken for the AS degree.
²To be approved by advisor. See advisor for approved electives. One technical elective will be selected from the following courses: INDT 384, MATH 261, MEET 435 or any CS 200+ or EE 300+ level course approved by both departments. Exceptions require department chair consent. Other technical specialty electives may be selected from the other ELET courses or courses in other Engineering Technology fields or in engineering fields if prerequisite knowledge is sufficient. A minimum of 40 semester hours of upper division courses is required.
³Capstone Course.
Engineering Technology – Major Code 039T
B.S.E.T.

The Bachelor of Science in Engineering Technology (BSET) is a plus-two program that builds on and complements associate degrees earned in a variety of engineering technology areas. The program is unique in its nature and overall design since it provides an opportunity to choose a plan to study toward a baccalaureate degree which best meets the student’s needs. Entrance requirements to this program include an associate of science degree in an engineering technology program with appropriate course work, including physical sciences and mathematics (through analytic geometry with calculus).

As students enter the program, an evaluation of their transcript will be made. This evaluation determines if additional lower division courses will be required to meet the prerequisites of the program. Current areas of emphasis are civil, environmental and mechanical engineering technology.

The student, with the assistance and approval of the advisor and Chair of the Engineering Technology department, can select technical specialty elective courses for the program chosen. Selected technical specialty courses can be taken in mechanical, civil, and electrical/electronics engineering technology; as well as industrial technology, and selected engineering courses, depending on the program of study. Also, some mathematics, science, and management courses may be approved.

All students must meet the degree requirements of the institution and the General Education Foundations curriculum for graduation. A minimum of 40 semester hours of upper-division courses is required. If a computer programming course using a technical language has already been completed, a technical elective may be substituted for the C++ programming course.

Plus-Two Baccalaureate Transfer Options

Students who have completed course work or associate degree programs in engineering-oriented programs at other institutions and wish to continue their studies toward a Bachelor of Science degree may do so. Students must satisfy all General Education Foundations and program specific requirements to be eligible for the award of this degree. For more information, contact the Chair of the Engineering Technology Department.
Engineering Technology – Civil – Major Code ET12
B.S.E.T.-Civil

The Bachelor of Science in Engineering Technology - Civil is a plus-two program that builds on and complements associate degrees earned in civil engineering technology areas. The program provides an opportunity to choose a plan to study toward a baccalaureate degree which best meets the student’s needs. Entrance requirements to this program include an associate of science degree in a civil engineering technology program with appropriate course work, including physical sciences and mathematics (through analytic geometry with calculus).

Graduates of associate degree civil (engineering) technology programs may enter the program directly as juniors based on an evaluation of their transcripts. This evaluation determines if additional lower division courses will be required to meet the prerequisites of the program.

All students must meet the requirements of the institution and the General Education Foundations curriculum for graduation. The B.S.E.T.-Civil program is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org.

Program Objectives

Graduates of the B.S.E.T.-Civil program will be able to achieve the following career and professional accomplishments:

• Demonstrate an awareness of contemporary social and economic issues, and the relationship of those issues to their professional civil engineering practice.
• Demonstrate the need to maintain their technical skills and develop new ones through personal development and life-long learning.
• Convey technical information through their proficiency in written and spoken communication skills.
• Demonstrate an appreciation and understanding for cultural and ethnic diversity in the workplace.
• Demonstrate understanding of professional and ethical responsibilities to their field and to society.
• Acquire and maintain successful employment using their skills in applied civil engineering technology.

Student Outcomes

Upon completion of the B.S.E.T.-Civil program, graduates will be able to:

• Use appropriate tools to acquire data and analyze problems, including software and laboratory equipment.
• Apply the principles of mathematics, science and engineering technology to perform technical calculations and solve for civil engineering technology problems.
• Perform competently in a laboratory setting.
• Solve problems and design components, systems or processes appropriate to civil engineering technology.
• Demonstrate effective skills in the development and presentation of team projects utilizing written, oral and graphical communication skills as well as proper use of references.
• Function effectively in a team.
• Generate creative and realistic solutions to defined problems and projects.
• Exhibit knowledge and skills consistent with expectations of a practicing engineering technologist, including professional development and continuous improvement.
• Demonstrate a general knowledge of professional and ethical responsibility toward employers, customers, and society.
• Demonstrate knowledge of the impact of civil engineering technology solutions in a societal context.
• Utilize computer software to prepare technical reports.
• Conduct standardized construction/civil engineering materials experiments.
• Utilize surveying methods for land measurement and/or construction layout.
• Conduct basic structural analysis including forces and stresses in elementary structural systems.
• Plan and prepare several engineering management documents, design and construction documents such as specifications, contracts, change orders, engineering drawings, and construction schedules.
• Perform economic analysis and cost analysis related to design, construction, operations, and maintenance of systems in civil specialties.
• Select appropriate engineering materials and practices.
• Perform standard analysis and design in three of the following sub-disciplines: structures, geotechnical, construction, transportation, or environmental.

Careers in Civil Engineering Technology

Baccalaureate degree graduates are typically involved in the analysis, design, development, implementation, and/or oversight of more advanced civil engineering systems and processes. Job titles of recent graduates have included: Project Engineer, Project Manager, Office Engineer, GIS Analyst, Assistant Field Engineer, Engineer I, Construction Manager and Estimator.
Engineering Technology – Civil-Code ET12  
B.S.E.T.-Civil

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
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<tbody>
<tr>
<td><strong>Math</strong> 315 Advanced Technical Math 4</td>
<td><strong>Geology</strong> 312 Geology 3</td>
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<td><strong>ENGL</strong> 305 Technical Writing 3</td>
<td><strong>CIET</strong> 325 Codes, Contracts, Cost Anal 3</td>
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<tr>
<td><strong>MEET</strong> 316 Dynamics 3</td>
<td><strong>CIET</strong> 355 Construction Estimating, or</td>
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<tr>
<td><strong>CIET</strong> 382 Technical Specialty Elective 3</td>
<td>MATH 261/300+ Math Elective 3</td>
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<td>Environmental Engr Technology 3</td>
<td><strong>CIET</strong> 330 Comp Appl in Hydraulics/Hydro 3</td>
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<tr>
<th>Seventh Semester</th>
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<tbody>
<tr>
<td><strong>GEF</strong> F6 The Arts and Creativity (GEF-F6) 3</td>
<td><strong>INDT</strong> 420 Construction Technology 3</td>
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<td><strong>CIET</strong> 320 Construction Methods &amp; Equip 3</td>
<td><strong>GNET</strong> 489 Senior Seminar &amp; Project 2</td>
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<tr>
<td><strong>INDT</strong> 302 Industrial Safety 3</td>
<td><strong>GEF</strong> F7 Global Studies &amp; Diversity (GEF-F7) 3</td>
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<tr>
<td><strong>DRET</strong> 314 Computer Graphics 3</td>
<td>Technical Specialty Elective 2 3</td>
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<td>Technical Specialty Elective 2 3</td>
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<td>Advanced CAD Elective 3 3</td>
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</table>

1All requirements of the General Education Foundations curriculum must be met. Some of these requirements are normally satisfied by courses taken for the AS degree.

2To be approved by advisor. Selected Civil Engineering courses may be taken with the approval of both the advisor and the Chair of Civil Engineering, if prerequisites are met. A minimum of 40 semester hours of upper division courses is required.

3Capstone Course.

4MAE 242 may be substituted.

REMARK: Students choosing to double major in B.S.E.T. programs must have at least 18 hours of different course work between the two programs.
The Bachelor of Science in Engineering Technology - Environmental is a plus-two program that builds on and complements associate degrees earned in a variety of environmental science and engineering technology areas. Entrance requirements to this program include an associate of science degree in a related technology program with appropriate course work to include physical sciences and mathematics (through analytic geometry with calculus).

As students enter the program, an evaluation of their transcript will be made to determine if additional lower division courses will be required to meet the prerequisites of the program. A program of study can be designed to meet the student’s background and career interests. Students selecting the Environmental emphasis must transfer a course in hydrologic systems or take it while enrolled in the program.

All students must meet the requirements of the institution and the General Education Foundations curriculum for graduation. A minimum of 40 semester hours of upper-division courses is required.

Program Objectives

Graduates of the B.S.E.T.-Environmental program will be able to achieve the following career and professional accomplishments:

• Demonstrate an awareness of contemporary social and economic issues, and the relationship of those issues to their professional environmental engineering practice.
• Demonstrate the need to maintain their technical skills and develop new ones through personal development and life-long learning.
• Convey technical information through their proficiency in written and spoken communication skills.
• Demonstrate an appreciation and understanding for cultural and ethnic diversity in the workplace.
• Demonstrate understanding of professional and ethical responsibilities to their field and to society.
• Acquire and maintain successful employment using their skills in applied environmental engineering technology.

Student Outcomes

Upon completion of the B.S.E.T.-Environmental program, graduates will be able to:

• Use appropriate tools to acquire data and analyze problems, including software and laboratory equipment.
• Apply the principles of mathematics, science and engineering technology to perform technical calculations and solve for environmental engineering technology problems.
• Perform competently in a laboratory setting.
• Solve problems and design components, systems or processes appropriate to environmental engineering technology.
• Demonstrate effective skills in the development and presentation of team projects utilizing written, oral and graphical communication skills as well as proper use of references.
• Function effectively in a team.
• Generate creative and realistic solutions to defined problems and projects.
• Exhibit knowledge and skills consistent with expectations of a practicing engineering technologist, including professional development and continuous improvement.
• Demonstrate a general knowledge of professional and ethical responsibility toward employers, customers, and society.
• Demonstrate knowledge of the impact of environmental engineering technology solutions in a societal context.
• Utilize computer software to prepare technical reports.
• Conduct standardized environmental engineering materials experiments.
• Select appropriate engineering materials and practices.

Careers in Environmental Engineering Technology

Baccalaureate degree graduates are typically involved in the analysis, design, development, implementation, and/or oversight of more advanced environmental systems and processes. Job titles of recent graduates have included: Assistant Field Engineer and Environmental Specialist.
### Engineering Technology – Environmental-Code ET13
#### B.S.E.T.-Environmental

#### Fifth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 116</td>
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<tr>
<td>PHYS 101</td>
<td>Introductory Physics I</td>
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<tr>
<td>MATH 315</td>
<td>Advanced Technical Math</td>
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<td>ENGL 305</td>
<td>Technical Writing</td>
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<td>CIET 382</td>
<td>Environmental Eng Tech</td>
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#### Sixth Semester

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<td>GEF F6</td>
<td>The Arts and Creativity</td>
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<tr>
<td>GEOL 312</td>
<td>Geology</td>
<td>3</td>
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<tr>
<td>CIET 325</td>
<td>Codes, Cont &amp; Cost Analysis</td>
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<tr>
<td>CIET 330</td>
<td>Comp. Appl. In Hydraulics</td>
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#### Seventh Semester

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<td>Material &amp; Energy Balances I</td>
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<td>CHEM 215</td>
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<td>DRET 314</td>
<td>Computer Graphics</td>
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<td>GNET 412</td>
<td>Project Management</td>
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#### Eighth Semester

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<th>Title</th>
<th>Credits</th>
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<tr>
<td>GEF F7</td>
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<td>CE 446</td>
<td>Technical Specialty Elective</td>
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<td>BIOL 240</td>
<td>Solid Waste Management</td>
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<td>GNET 489</td>
<td>Microbiology</td>
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<td></td>
<td>Senior Seminar &amp; Project</td>
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</table>

1. All requirements of the General Education Foundations curriculum must be met. Some of these requirements are normally satisfied by courses taken for the AS degree.
2. To be approved by advisor. See advisor for approved electives. A minimum of 40 semester hours of upper division courses is required.
3. Capstone Course.

**REMARKS:** Students choosing to double major in B.S.E.T. must have at least 18 hours of different course work between the two programs.
Engineering Technology – Mechanical–Major Code ET14
B.S.E.T.-Mechanical

The Bachelor of Science in Engineering Technology - Mechanical is a plus-two program that builds on and complements associate degrees earned in mechanical engineering technology areas and offers a wide variety of opportunities to students interested in continuing their education in the mechanical engineering technology field.

The B.S.E.T-Mechanical program includes both classroom and laboratory experiences. The program stresses the application of engineering and scientific principles and methods to solve practical problems. Included in the curriculum is the study of sciences and mathematics as well as methods, processes, skills, and materials used in industry.

The B.S. Engineering Technology-Mechanical program is accredited by the Engineering Technology Accreditation Commission of ABET, [http://www.abet.org](http://www.abet.org).

Graduates of the B.S.E.T.-Mechanical program will be able to achieve the following career and professional accomplishments:

- Demonstrate an awareness of contemporary social and economic issues, and the relationship of those issues to their professional mechanical engineering practice.
- Demonstrate the need to maintain their technical skills and develop new ones through personal development and life-long learning.
- Capable of conveying technical information through their proficiency in written and spoken communication skills.
- Demonstrate an appreciation and understanding for cultural and ethnic diversity in the workplace.
- Demonstrate understanding of professional and ethical responsibilities to their field and to society.
- Be able to acquire and maintain successful employment using their skills in applied mechanical engineering technology.

**Student Objectives**

Upon completion of the B.S.E.T.-Mechanical program, graduates will be able to:

- Operate modern computational tools, including computers and machines for technical problem solving.
- Apply the principles mathematics and science to solve mechanical engineering technology problems.
- Perform competently in a laboratory setting.
- Demonstrate the ability to design systems, components, or processes for mechanical engineering technology application.
- Function effectively in a team.
- Identify and address various aspects of design.
- Demonstrate competency in written, oral and graphical communication skills.
- Recognize the need for additional education, training or certification as a means of maintaining and improving the skills necessary for career advancement and personal fulfillment.
- Demonstrate a general knowledge of professional ethical responsibility toward employers, customers, and society.
- Exhibit a broad education and knowledge of contemporary issues in a global and societal context.
• Demonstrate the ability to solve technical problems involving energy, heat transfer, and engineering mechanics.
• Demonstrate knowledge of plant maintenance, scheduling, and operation as well as safety.
• Design and build mechanical engineering components using contemporary automated machines.
• Utilize appropriate software including CAD, to solve mechanical engineering technology problems.

Careers in Mechanical Engineering Technology

Baccalaureate degree graduates work as engineering technologists. Application-oriented courses in hydraulics, tool design, machine design, and robotics prepare them for advanced design work, while courses dealing with manufacturing systems analysis, quality control, and industrial management prepare them for supervisory positions in industry. Graduates also find employment as technical sales representatives. Because their education includes management training, they may serve as supervisors in planning, design, construction, and production and maintenance activities.
### Fifth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DRET 314</td>
<td>Computer Graphics</td>
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<td>MATH 315</td>
<td>Advanced Technical Math</td>
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<td>Technical Writing</td>
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<td>MEET 316</td>
<td>Dynamics</td>
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<tr>
<td>GNET 412</td>
<td>Project Management</td>
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**Total:** 16

### Sixth Semester

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<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>GEF 308</td>
<td>Global Studies &amp; Diversity (GEF-F7)¹</td>
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<tr>
<td>GNET 308</td>
<td>Advanced Computer Apps, or MANG 386 or MATH 261/300+</td>
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<td>IND 308</td>
<td>Automated Manufacturing</td>
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<td>IND 354</td>
<td>Industrial Materials</td>
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<tr>
<td>MEET 435</td>
<td>Energy Conversion Systems</td>
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**Total:** 15

### Seventh Semester

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<tr>
<td>GEF 308</td>
<td>The Arts and Creativity (GEF-F6)¹</td>
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<td>GNET 410</td>
<td>&quot;C&quot; Programming for Tech</td>
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<td>IND 302</td>
<td>Industrial Safety</td>
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**Total:** 15

### Eighth Semester

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<td>GEF 309</td>
<td>Human Inquiry &amp; the Past (GEF-F5)¹</td>
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<td>IND 341</td>
<td>Plant &amp; Equip Maintenance</td>
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<td>IND 354</td>
<td>Technical Specialty Elective²</td>
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<tr>
<td>GNET 489</td>
<td>Senior Seminar &amp; Project</td>
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**Total:** 17

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¹All requirements of the General Education Foundations curriculum must be met. Some of these requirements are normally satisfied by courses taken for the AS degree.

²To be approved by advisor. The student's overall program must include a sequence of courses in at least three of the following areas: manufacturing processes, mechanical design, engineering materials, solid mechanics, fluid mechanics, electro-mechanical devices and controls or industrial operations. MAE courses may be taken with the approval of both the Advisor and the Chair of Mechanical Engineering, if prerequisites are met. A minimum of 40 semester hours of upper division courses is required.

³Capstone Course.

⁴MAE 242 may be substituted.

⁵To be approved by advisor and department chair. Open elective may be a technical specialty course.

⁶MAE 410 Materials Engineering may be substituted with approval.

**REMARKS:** Students choosing to double major in B.S.E.T. programs must have at least 18 hours of different course work between the two programs.
Industrial Technology – Major Code 040T
Bachelor of Science

Program Description

The Bachelor of Science in Industrial Technology is mainly a plus-two program that builds upon and complements associate degrees earned in industrial technology or similar areas. The program is designed to prepare individuals for a wide range of entry-level industrial positions. The program provides a comprehensive education in technology, supplemented by selected professional, industrial, and related academic studies. The program is designed to prepare graduates with a broad range of knowledge and skills necessary for both lateral and vertical mobility at their work place.

As a student enters the program, an evaluation of their transcript will be completed. The evaluation will determine if additional lower division courses will be required to meet the prerequisites. All students must meet the General Education Foundations curriculum requirements of the institution for graduation.

Prospective students include graduates of associate degree programs such as:

- Civil Engineering Technology
- Drafting & Design Engineering Technology
- Electrical Engineering Technology
- Mechanical Engineering Technology
- General Studies (with advance approval of program of study by Chair of Engineering Technology)
- Industrial Technology programs at other institutions meeting departmental approval may enter the program directly as juniors based on an evaluation of their transcripts. In all cases, an evaluation of transfer credits will be conducted to validate course requirements. This evaluation determines if additional lower division courses will be required to meet the prerequisites of upper division courses in the curriculum.

Program Objectives

Graduates of the bachelor’s degree program in Industrial Technology are prepared for a broad range of technical careers. Graduates apply the technologies of materials, manufacturing processes, automation, CAD/ CAM, production operations, maintenance, power, electro-mechanical systems, industrial organization and management, project management, and safety to the solution of problems in industry.

Careers in Industrial Technology

Baccalaureate degree graduates are typically involved in the analysis, design, development, implementation, and/or oversight of more advanced systems and processes.
Plus-Two Baccalaureate Transfer Options

Students who have completed course work or associate degree programs in industrial programs at other institutions and wish to continue their studies toward a bachelor of science degree in industrial technology may do so. For more information, contact the Chair of the Engineering Technology Department.
### Industrial Technology – Code 040T
**Bachelor of Science**

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 101</td>
<td>English Composition I (GEF-F1)</td>
<td>3</td>
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<tr>
<td>WVUE 191</td>
<td>First Year Seminar</td>
<td>1</td>
</tr>
<tr>
<td>DRET 120</td>
<td>Drafting I</td>
<td>2</td>
</tr>
<tr>
<td>GEF F5</td>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>MATH 126</td>
<td>College Algebra (GEF-F3)</td>
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#### Second Semester

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<tbody>
<tr>
<td>ENGL 102</td>
<td>English Composition II (GEF-F1)</td>
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<td>GEF F12</td>
<td>Society and Connections (GEF-F4)</td>
<td>3</td>
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<td>ENGR 111</td>
<td>Software Tools for Engineers</td>
<td>3</td>
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<tr>
<td>MATH 128</td>
<td>Trigonometry (GEF-F8)</td>
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<tr>
<td>MAE 240</td>
<td>Manufacturing Process</td>
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#### Third Semester

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<tr>
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<tbody>
<tr>
<td>CS 101</td>
<td>Intro to computer App.</td>
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<td>ACCT 201</td>
<td>Principles of ACC.I</td>
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<tr>
<td>PHYS 101</td>
<td>Introductory Physics I (GEF-F2B)</td>
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<td>MATH 155</td>
<td>Calculus I (GEF-F8)</td>
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#### Fourth Semester

<table>
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<tr>
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<td>ACCT 202</td>
<td>Principles of ACC.I</td>
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<tr>
<td>CHEM 115</td>
<td>Fund. Of Chemistry</td>
<td>4</td>
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<tr>
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<td>MAE 240</td>
<td>Manufacturing Process</td>
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#### Fifth Semester

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<tr>
<td>BCOR 320</td>
<td>Legal Environment of Business</td>
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<tr>
<td>ENGL 305</td>
<td>Technical Writing</td>
<td>3</td>
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<tr>
<td>INDT 302</td>
<td>Industrial Safety</td>
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<tr>
<td>BCOR 370</td>
<td>Managing Individuals &amp; Teams</td>
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#### Sixth Semester

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<tbody>
<tr>
<td>INDT 308</td>
<td>Automated Manufacturing</td>
<td>3</td>
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<tr>
<td>INDT 354</td>
<td>Industrial Materials</td>
<td>3</td>
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<tr>
<td>INDT 420</td>
<td>Construction Technology</td>
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<td>BCOR 360</td>
<td>Ops. &amp; Quant. Bus. Meth.</td>
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<td>BCOR 370</td>
<td>Technical Specialty Elective</td>
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#### Seventh Semester

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<tr>
<td>GEF F6</td>
<td>The Arts and Creativity (GEF-F6)</td>
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<td>Technical Specialty Elective</td>
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<td>Technical Specialty Elective</td>
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<tr>
<td>GNET 412</td>
<td>Project Management</td>
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<td>GNET 495</td>
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#### Eighth Semester

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<tbody>
<tr>
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<tr>
<td>Technical Specialty Elective</td>
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<tr>
<td>GNET 489</td>
<td>Plant &amp; Equip. Maintenance</td>
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</tr>
<tr>
<td>GEF F7</td>
<td>Global Studies &amp; Diversity (GEF-F7)</td>
<td>2</td>
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</table>

1 Subject to approval of the advisor. Selected engineering courses may be taken with the approval of the advisor, the Chair of Engineering Technology Department, and the Chair of the engineering department offering the course, if prerequisite material covered is judged to be sufficient.

2 Capstone course.

Remarks: Transfer students entering the program will have their transcripts evaluated for equivalent course work. Any requirements, including those of the General Education Foundations curriculum, not satisfied by transfer courses, will need to be satisfied by appropriate additional courses.

Total Hours: 120
Biology – Major Code 031T
Bachelor of Science

The Biology Program covers all aspects of the organism, from molecular and biochemical pathways through anatomy and physiology of organisms to the structure of populations, communities, landscapes and ecosystems. The program provides grounding in mathematics and other natural science disciplines necessary for the understanding of the organism, such as chemistry, organic chemistry and physics. By careful choice of biology and restricted electives, students can tailor their educational experience to prepare for professional school, graduate school or entry into the workforce upon graduation.

The designation of 12 restricted elective hours in the program provides the student with the opportunity to select additional courses from the disciplines of biology, chemistry, physics, math, computer science, business, foreign language, psychology, health sciences, engineering or other disciplines which might be helpful in biologically oriented careers. In addition to traditional coursework, students also have the opportunity to engage in research projects selected from a variety of biological disciplines. (Students who select electives in any science or technical areas may need additional courses to meet prerequisites.) The restricted electives must be approved by the assigned biology advisor. For students who have reached a more advanced level in mathematics upon graduation from high school and meet ACT score requirements, Calculus I and II may be substituted for College Algebra and Trigonometry. Biology majors must earn a “C” or better in the freshman biology courses to enter upper division BIOL courses. During the last semester of the program, students must take the exit exam in biology. Students are also expected to complete a program of volunteer work to fulfill the college requirement for citizenship.

Program Objectives

Upon graduation, students will be prepared to:
• Pursue advanced degrees in biology and related fields or professional degrees, including medicine, dentistry, veterinary medicine, pharmacy and other health related fields.
• Directly enter a broad range of career pathways in industry and federal or state governments which require a baccalaureate degree in science.

Program Learning Outcomes

Upon graduation, students of the biology program will be able to:
1. Apply scientific method to solving problems.
   a. Formulate a hypothesis and alternate hypotheses
   b. Design experiments to test hypotheses.
   c. Collect data.
   d. Analyze data statistically and graphically
   e. Interpret and report data
2. Communicate effectively in writing and orally.
3. Evaluate sources of information through a scientific lens.
   a. Perform search of primary scientific literature.
   b. Interpret scientific papers.
c. Summarize research results from primary sources.
d. Synthesize information from a variety of sources into a coherent argument.

4. Develop a working vocabulary in evolution, ecology, genetics, anatomy, physiology, cellular, molecular, and organismal biology.

5. Explain and apply basic concepts in cell and molecular biology, evolutionary theory, human biology, genetics and ecology.

6. Demonstrate skills in the use of equipment and apply safety practices in the laboratory and field settings.
# Biology Minor

24 semester hours minimum including **BIOL-111**, **BIOL 112**, plus 16 hours BIOL courses which must include at least 9 credits of 300+ level courses.
Chemistry – Major Code 033T
Bachelor of Science

Chemistry is the study of the composition, structure and properties of matter. Chemists work in the growing fields of biotechnology, environmental science, catalysis, materials science, information and computer technologies, and many others. The study of chemistry is excellent preparation for medical, pharmacy, dental, and veterinary schools. Chemistry is also an excellent field of study to prepare for many other professional careers like patent law, chemical sales, and technical writing.

A total of 120 hours minimum is required for the Bachelor of Science in Chemistry. The following courses are required by the Chemistry Department: CHEM 115, CHEM 116, and CHEM 215; CHEM 233, CHEM 234, CHEM 235, CHEM 236, CHEM 310, CHEM 313, CHEM 346, CHEM 347, CHEM 348, CHEM 349, CHEM 422, CHEM 423 CHEM 494; 4 hours of CHEM 497; MATH 155, MATH 156, MATH 251, MATH 261; PHYS 111, PHYS 112, ENGL 305; 9 hours of 400-level chemistry electives; and 24 hours of restricted electives. The 24 hours of restricted electives are chosen from a list approved by the Chemistry Department. Courses required by the Chemistry Department account for 94 to 95 of the hours required for the Bachelor of Science in Chemistry. The core curriculum requirements account for 25 hours. Students must pass an assessment exam in inorganic chemistry, chemical analysis and instrumental methods of chemical analysis, organic and bioorganic chemistry, and calculus-based physical chemistry during their seventh and/or eighth semester.

In addition to the general education learning outcomes listed elsewhere in the catalog, the Chemistry Department’s Bachelor of Science program is designed to meet broad educational objectives and learning outcomes, which prepare students:

- To apply fundamental chemical concepts and relationships in the solution of diverse scientific problems.
- With knowledge and application of chemical analytical instrumentation, experimental design, and scientific data collection and interpretation.
- With diverse laboratory skills and techniques.
- With knowledge and application of good laboratory safety practices and environmental responsibility.
- With the ability to effectively communicate technical information through writing and speaking.
- For professional employment in the various scientific fields or to continue with advanced study, which may include graduate work in business, the sciences, health professions or law.
# Chemistry-Code 033T

**Bachelor of Science**

## First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
<td>3</td>
</tr>
<tr>
<td>WVUE 191</td>
<td>First Year Seminar</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 115</td>
<td>Fundamentals of Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 155</td>
<td>Calculus I (GEF F3)</td>
<td>4</td>
</tr>
<tr>
<td>GEF F4</td>
<td>Society &amp; Connections</td>
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**Total Credits:** 15

## Second Semester

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<tr>
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<td>Composition &amp; Rhetoric (GEF F1)</td>
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<tr>
<td>CHEM 116</td>
<td>Fund. of Chemistry II (GEF F8)</td>
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<tr>
<td>MATH 156</td>
<td>Calculus II (GEF F8)</td>
<td>4</td>
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<tr>
<td>PHYS 111</td>
<td>Phys for Science &amp; Engr I (GEF F8)</td>
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**Total Credits:** 15

## Third Semester

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<thead>
<tr>
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<tbody>
<tr>
<td>CHEM 233</td>
<td>Organic Chemistry I</td>
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<tr>
<td>CHEM 235</td>
<td>Organic Chemistry I Lab</td>
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<tr>
<td>CHEM 215</td>
<td>Analytic Chemistry I</td>
<td>4</td>
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<tr>
<td>MATH 251</td>
<td>Multivariable Calculus</td>
<td>4</td>
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<tr>
<td>PHYS 112</td>
<td>Phys for Science &amp; Engr. II (GEF F8)</td>
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**Total Credits:** 16

## Fourth Semester

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<tbody>
<tr>
<td>CHEM 422</td>
<td>Chemistry of Inorganic Compounds</td>
<td>3</td>
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<tr>
<td>CHEM 423</td>
<td>Inorganic Synthesis Lab</td>
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<tr>
<td>CHEM 234</td>
<td>Organic Chemistry II</td>
<td>3</td>
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<tr>
<td>CHEM 236</td>
<td>Organic Chemistry II Lab</td>
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<tr>
<td>MATH 261</td>
<td>Elementary Differential Equations</td>
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<tr>
<td>GEF F6</td>
<td>The Arts &amp; Creativity</td>
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**Total Credits:** 15

## Fifth Semester

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<tbody>
<tr>
<td>CHEM 346</td>
<td>Physical Chemistry I</td>
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<tr>
<td>CHEM 347</td>
<td>Physical Chemistry I Lab</td>
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<td>ENGL 305</td>
<td>Technical Writing</td>
<td>3</td>
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<td>Global Studies &amp; Diversity</td>
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<tr>
<td></td>
<td>Restricted Elective(s)</td>
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**Total Credits:** 16

## Sixth Semester

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<tbody>
<tr>
<td>CHEM 310</td>
<td>Analytic Chemistry II</td>
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<td>CHEM 313</td>
<td>Analytic Chemistry II Lab</td>
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<td>CHEM 348</td>
<td>Physical Chemistry II</td>
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<td>CHEM 349</td>
<td>Physical Chemistry II Lab</td>
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**Total Credits:** 14

## Seventh Semester

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<tbody>
<tr>
<td>CHEM 494</td>
<td>Seminar in Chemistry</td>
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<td>Chemistry Elective(s)</td>
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**Total Credits:** 13

## Eighth Semester

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<tr>
<td>CHEM 497</td>
<td>Research Practicum</td>
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<td>Human Inquiry &amp; the Past</td>
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<td>CHEM</td>
<td>Chemistry Elective</td>
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</table>

**Total Credits:** 16

For Chemistry Minors: A total of 24 hours minimum is required including CHEM 115, CHEM 116, CHEM 215, CHEM 233, CHEM 234, CHEM 235, CHEM 236, and CHEM 346 and CHEM 347 or CHEM 348 and CHEM 349.

Total Hours - 120
Information Systems (IS) – Major Code 050T
Bachelor of Science

The ever increasing use of technology has taken almost every business, non-profit organization, and government agency to a drastically different place from where they were only decades ago. Computers and the Internet have allowed companies to conduct operations, utilize resources, and sell products in almost any area of the world. Information systems specialists analyze the complex operational problems of private and public industry; and design, build, and implement innovative software solutions for improving operations from both a technological and business perspective.

BACHELOR OF SCIENCE IN INFORMATION SYSTEMS (BSIS)

WVU Tech Information Systems program is designed to train highly skilled professionals with expertise in network management and administration, database management, computer systems management, and website development. The program curriculum contains 17 courses taught by Computer Science and Information Systems faculty that are specially developed for Information Systems majors. They include courses such as Database Management, e-Commerce, and Computer Security. Those courses are supplemented by highly specialized Business Management courses such as Visual Basic for Business applications, Business Information Systems, and Business Statistics. For elective requirements, the department offers a wide variety of courses on computer systems, programming, computer networks, and special topics such as artificial intelligence, image processing, and computer graphics. Students have the opportunity to learn more theoretical aspects of computing, other programming languages, advanced programming concepts, or other applications of computing by taking Computer Science electives of their interest.

Program Educational Objectives:

In three to five years after graduation, the graduates of the WVU Tech BS degree program in Information Systems will do the following:

• Demonstrate success in the professional practice of Information Systems through recognition of their contributions to an organization or entrepreneurial accomplishments.
• Alternatively or additionally, demonstrate success in the field of computing by continuing formal education through earning post graduate degrees, technical certificates, or other technical training.
• Demonstrate lifelong learning habits either as a professional or a researcher in their field.

Student Outcomes:

The BS degree in Information Systems at WVU Tech enables students to attain:

• An ability to apply knowledge of computing and mathematics appropriate to the program’s student outcomes and to the discipline.
• An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
• An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
• An ability to function effectively on teams to accomplish a common goal.
• An understanding of professional, ethical, legal, security and social issues and responsibilities.
• An ability to communicate effectively with a range of audiences.
• An ability to analyze the local and global impact of computing on individuals, organizations, and society.
• Recognition of the need for and an ability to engage in continuing professional development.
• An ability to use current techniques, skills, and tools necessary for computing practice.
• An understanding of processes that support the delivery and management of information systems within a specific application environment.
### Information Systems-Code 050T
#### Bachelor of Science

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGL 101</strong></td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
</tr>
<tr>
<td><strong>ISYS 101</strong></td>
<td>Intro to Information Systems I</td>
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<tr>
<td><strong>MATH 122</strong></td>
<td>Finite Math (GEF F3)</td>
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<tr>
<td><strong>CS 121</strong></td>
<td>Computer Science I</td>
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<td><strong>WVUE 191</strong></td>
<td>First Year Seminar</td>
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<thead>
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<tr>
<td><strong>ISYS 115</strong></td>
<td>Discrete Structures</td>
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<tr>
<td><strong>CS 231</strong></td>
<td>Intro Computer Org.</td>
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<td><strong>ACCT 201</strong></td>
<td>Principles of Accounting I</td>
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<td><strong>Elective</strong></td>
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<th>Sixth Semester</th>
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<tr>
<td><strong>CS 321</strong></td>
<td>Introduction to Networking</td>
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<tr>
<td><strong>ISYS 325</strong></td>
<td>C++</td>
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<td><strong>GEF F2</strong></td>
<td>Laboratory Science</td>
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<td><strong>MANG 386</strong></td>
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<tr>
<td><strong>CS 480</strong></td>
<td>Senior Design Seminar</td>
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<td><strong>MANG 420</strong></td>
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<td>Global Studies &amp; Diversity</td>
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<td><strong>GEF F2</strong></td>
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**Total Hours: 120**
Approved Technical Electives for BS in Information Systems 2014-15  
(Revised on 10 January, 2014)

The following courses constitute the approved list of technical electives for students following the 2014-2015 required curriculum for a BS in Information Systems:

**Accounting**
- **ACCT 202** Principles of Accounting
- **ACCT 300-400 Level***

**Biology**
- **BIOL 111** General Biology I**
- **BIOL 112** General Biology II**
- **BIOL 300-400 Level***

**Business Core**
- **BCOR 300-400 Level***

**Chemistry**
- **CHEM 111** General Chemistry**
- **CHEM 112** General Chemistry**
- **CHEM 115** College Chemistry**
- **CHEM 116** College Chemistry**
- **CHEM 300-400 Level***

**Computer Science**
- **CS 265**
- **CS 300-400 Level**

**Economics**
- **ECON 201**
- **ECON 300-400 Level***

**Finance**
- **FINC 300-400 Level***

**Management**
- **MANG 300-400**

**Physics**
- **PHYS 101** College Physics I**
- **PHYS 102** College Physics II**
- **PHYS 111** Physics for Scientists and Engineers I**
- **PHYS 112** Physics for Scientists and Engineers II**
- **PHYS 300-400 Level***

**Special topic electives from other departments must be approved in advance.**

* Check with Department Chair for approval

** Unless taken as a science requirement

**Other courses are accepted as technical electives only with advance approval from the department.**
Mathematics – Major Code 041T
Bachelor of Science

Mathematics is the foundation for many of the natural sciences and, as knowledge is expanded in these sciences, new demands are made on mathematics to provide ideas to be used in advancing the sciences. Older sciences such as physics, chemistry, and engineering depend on mathematics, as do a large number of new and sophisticated subjects. The student’s career in mathematics might include college teaching and research, computers, statistics, and many others.

Note: Mathematics Major: 42 semester hours minimum including MATH 155, MATH 156, MATH 251, MATH 261, MATH 283, MATH 341, MATH 441, MATH 448, MATH 451, MATH 452, MATH 496, and six hours in other 300 or 400 level Math courses.

Mathematics Minor: 25 semester hours minimum including MATH 155, MATH 156, MATH 251, MATH 261, MATH 441, and six hours chosen from MATH 283 or other 300 or 400 level Math courses.

MATH 315 may not be used as credit toward a Mathematics major or Mathematics minor. Technical electives to be chosen from an approved list. See the Mathematics Department chair.

Program Learning Outcomes

The graduates of the Mathematics program:
• Should be able to attend graduate school or find employment in industry or government.
• Will have a rounded education that encourages and supports meaningful dialogue with individuals from other disciplines especially sciences and engineering.
• Will be prepared to participate in lifelong learning opportunities.

Program Learning Outcomes

The graduates of the Mathematics program:
• Will be critical thinkers and problem solvers.
• Will be able to understand the concepts, solve the problems, and prove theorems in at least three of the four major areas of mathematics-Algebra, Analysis, Applied Mathematics, and Geometry/Topology.
• Will be able to develop computer programs to implement computational algorithms.
• Will be able to communicate effectively.
# Mathematics-Code 041T
## Bachelor of Science – Business Track

### First Semester

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ENGL 101</td>
<td>Composition &amp; Rhetoric (GEF F1)</td>
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<tr>
<td>WVUE 191</td>
<td>First Year Seminar</td>
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<td>MATH 155</td>
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<tr>
<td>CS 121</td>
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<td>MATH 156</td>
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<td>CS 122</td>
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<td>GEF F4</td>
<td>Society &amp; Connections</td>
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<td>MATH 283</td>
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<td>MATH 251</td>
<td>Multivariable Calculus</td>
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<td>ACCT 201</td>
<td>Principles of Accounting I</td>
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</tr>
<tr>
<td>GEF F2</td>
<td>Science and Technology</td>
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<tbody>
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<td>MATH 448</td>
<td>Probability &amp; Statistics</td>
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<td>ECON 202</td>
<td>Principles of Economics I</td>
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<tr>
<td>ENGL 305</td>
<td>Sci./Tech. Writing</td>
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<td>GEF F6</td>
<td>Human Inquiry and the Past</td>
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<tbody>
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<td>BCOR 370</td>
<td>Managing Ind. &amp; Teams</td>
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<td>MATH 341</td>
<td>Intro to Alg. Structures</td>
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<td>GEF F6</td>
<td>The Arts and Creativity</td>
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<td>ECON 201</td>
<td>Principles of Economics II</td>
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<td>FINC 325</td>
<td>Financial Management I</td>
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<td>Global Studies &amp; Diversity</td>
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<td>Focus Coursework</td>
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Technical electives must be chosen from an approved list – see department chair.

Total Hours – 120
# Mathematics-Code 041T
## Bachelor of Science – Classic Track

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<td>MATH 452</td>
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Technical electives must be chosen from an approved list—see department chair.

Total Hours - 120
6. Course Descriptions

Sample Course Description

*Courses not offered every year are indicated by:
F-Odd: Fall Semester, odd-numbered years
F-Even: Fall Semester, even-numbered years
S-Odd: Spring Semester, odd-numbered years
S-Even: Spring Semester, even-numbered years

CE 461 Structural Analysis 2 (3-0)3 F-Even
(CE 361, MATH 261, §CE 462 or §CE 463)
The “CE” on the left top line stands for Civil Engineering, the Subject area; the “461” is the number of the course; “Structural Analysis” is the course title.
The “(3-0)” means three hours of lecture and no hours of laboratory. The “3” on the right represents the credit hours of the course.
“F-Even” means the course is offered in the Fall Semester of even years only.
The “CE 361, MATH 261” are prerequisite courses and as such should be successfully completed prior to taking the course.
If a course is a co-requisite, it may be taken prior to taking the course or at the same time. The symbol § is used to designate a co-requisite course.

Accounting (ACCT)

ACCT 201 Principles of Accounting (3-0)3 F
(Math ACT score of 19 or better)
The accounting cycle from the analysis of business transactions through the preparation of financial statements; basic theory and practice with respect to accounting for assets and equities.

ACCT 202 Principles of Accounting (3-0)3 S
(ACCT 201)
Utilization of accounting information for purposes of managerial control and decision making; cost concepts, profit and financial budgeting, analysis of financial statements.

ACCT 311 Intermediate Accounting (3-0)3 F
(ACCT 201 with "C" or better & ACCT 202 with "C" or better).
Development of accounting theory and practice, with emphasis on asset accounting.

ACCT 312 Intermediate Accounting (3-0)3 S
(ACCT 311 with "C" or better)
Theory and practice with respect to accounting for liabilities and stockholder's equity; special problems peculiar to financial accounting; analysis of financial statements and changes in financial position.

ACCT 322 Accounting Systems (3-0)3 S
(ACCT 311)
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.
**ACCT 331 Managerial Accounting** (3-0)3 F
(ACCT 202; for non-accounting majors; not available to students receiving credit for ACCT 432)
Analysis of internal accounting practices with emphasis on use of data for performance evaluation, control, motivation through accounting systems, and decision-making.

**ACCT 348 Financial Statement Analysis** (3-0)3 S
(ACCT 201)
This course will include an in-depth review of financial statements; financial ratios and fraud analysis; industry average comparisons; financial services and library sources; and extended utility of ratios. Also cross-listed as FIN 328.

**ACCT 415 Advanced Accounting** (3-0)3 F
(ACCT 312)
Accounting for business combinations, consolidations, foreign currency translation, governmental and nonprofit entities, and equity method investment accounting.

**ACCT 420 Fraud Examination** (3-0)3 F
(ACCT 201)
An overview of fraud related concepts; management fraud; financial statement fraud; fraud prevention and detection techniques; elements of fraud investigation; and interviewing process.

**ACCT 421 Fraud Management: Legal/Ethical Issues** (3-0)3 S
Offers a basic understanding of what motivates criminals to commit fraud; legal elements of fraud; rules of evidence; key legal rights and privacy issues; testifying; and non-control deterrence and methods used to implement it.

**ACCT 422 Adv. Fraud Investigation/Analysis** (3-0)3 S
(ACCT 420)
This course includes an in-depth review of techniques used in investigating financial fraud. Topics include: investigating theft and concealment; sources of information; interviewing and testifying.

**ACCT 423 Information Security and Controls** (3-0)3 F
This course covers security issues in a computerized environment. Topics include: security guidelines, implementation, and cost issues; risk management and control.

**ACCT 432 Advanced Cost Management** (3-0)3 F
(ACCT 202 or department consent)
Advanced cost management concepts and techniques with emphasis on cost measurement systems and the evaluation and management of performance.

**ACCT 441 Income Tax Accounting** (3-0)3 F
(ACCT 311)
Overview and survey of Federal income tax principles for individuals and simple corporations with emphasis on gross income, exemptions, and deductions, capital gains and losses, and tax credits.
ACCT 442 Income Tax Accounting (3-0)3 (ACCT 441)
The study of federal income tax treatment of partnerships, corporations and estates, and the treatment of those property transfers subject to the Federal Gift Tax, together with an introduction to tax research and tax procedure.

ACCT 449 Case Studies in Fraud Examination and Management (3-0)3 Summer (ACCT 422)
This capstone course integrates the knowledge and skills acquired during the fraud-related course work in the program. Several cases will be assigned for discussion and written analysis.

ACCT 450 Accounting Technology (3-0)3 S (ACCT 322)
Survey and application of computerized accounting software systems set up, general ledger, accounts receivable, accounts payable, payroll, and preparation of financial statements.

ACCT 451 Auditing Theory (3-0)3 F-Even As needed (ACCT 312)
Auditing fundamentals, objectives, ethics, statistical samplings, standards and procedures. Emphasis on FASB and SAS disclosures.

ACCT 461 Accounting for Non-business Entities (3-0)3 F-Odd As needed (ACCT 312)
Accounting, reporting, and budgeting for governmental and nonprofit entities and the use of fund accounting data for planning and control.

ACCT 491 Professional Field Experience (3-0)3 (Department consent)
May be repeated up to a maximum of 6 hours. Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

ACCT 493 Special Topics (1-6-0)1-6 (Department consent)
Investigation of topics not covered in regularly scheduled courses.

Art History (ARHS)

ARHS 101 Landmarks of World Art (3-0)3
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.

Athletic Coaching Education (ACE)

ACE 100 The Total Athlete (3-0)3 S
In-depth analysis of topics associated with being an athlete, i.e., attitude, academics, media, peer pressure, racism in sports, recruiting, AIDS, rape, stress/time management, suicide, sportsmanship, ethics, drugs (types and testing), agents, coping with adversity,
eating disorders, gambling, life after sports, non-revenue sports, pro sports, violence in sports, gender equity, and personal growth.

**ACE 105 Nutrition for Coaches** (3-0)3 F  
General nutrition and dietary requirements to aid coaches and their athletes.

**ACE 106 Introduction to Athletic Coaching** (3-0)3 F  
Overview of the athletic coaching profession including career opportunities, critical current issues/trends, professional standards and the professional organizations.

**ACE 168 Sport Officiating** (2-0)2 S  
Study of art, science, industry standards, and best practices of the officiating profession across all levels of sport.

**ACE 256 Principles & Problems of Coaching** (3-0)3 F  
Designed to teach students the principles and problems of interscholastic athletic coaching.

**ACE 265 Diversity and Sport** (3-0)3 S  
Covers historical and current topics relevant to diversity in sport as it relates to current sport practices. Practical strategies for facilitating acceptance of diversity within individual and team sports are discussed.

**ACE 315 Sport for the Exceptional Athlete** (3-0)3 F  
(Students must be admitted to the ACE program to take this course)  
Examines the past, present, and future of sport for athletes with disabilities and those competing at the Master-level. The focus is on the coaching of these unique populations of competitive and recreational athletes.

**ACE 330 Coaching Education Administration** (3-0)3 S  
(Students must be admitted to the ACE program to take this course)  
An administrative focus of leadership, finance, fundraising, planning, facility development, personnel supervision, public relations, rules and regulations, purchase and care of equipment, and the conducting of athletic events.

**ACE 361 Techniques of Coaching: Soccer** (2-0)2  
(Students must be admitted to the ACE program to take this course)  
Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

**ACE 362 Techniques of Coaching: Basketball** (2-0)2  
(Students must be admitted to the ACE program to take this course)  
Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

**ACE 364 Techniques of Coaching: Football** (2-0)2  
(Students must be admitted to the ACE program to take this course)  
Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.
ACE 365 Techniques of Coaching: Baseball (2-0)2
(Students must be admitted to the ACE program to take this course)
Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 366 Techniques of Coaching: Volleyball (2-0)2
(Students must be admitted to the ACE program to take this course)
Designed to permit students to gain athletic coaching experience through a supervised on-site experience with a varsity athletic team.

ACE 368 Sport Movement Analysis (3-0)3 F
(PET 124 and PET 125, students must be admitted to the ACE program to take this course)
This course is designed to introduce a prospective coach to the principles of human movement.

ACE 369 Basic Strength & Conditioning for Coaches (3-0)3 F
(EXPH 365 or PET 125 & ACE 368, students must be admitted to the ACE program to take this course)
Presents basic exercise performance methodologies to assist in coaching athletes. Types of training include speed drills, agility drills, conditioning workouts, flexibility exercises, balance-improvement drills, and proper training environment safety techniques.

ACE 410 Training Theories for Coaches (3-0)3 S
(PET 124, PET 125 are required prerequisites. EXPH 365 is a co-required class, students must have either completed EXPH 365 or be enrolled in EXPH 365 during the same semester as taking ACE 410, students must be admitted to the ACE program to take this course)
Application of sport training theories to building, designing and assessing athlete training plans, seasonal team development and long term athlete development from physical literacy to peak performance at all participation levels.

ACE 450 Career Planning in Sport (3-0)3 S
(Department consent, students must be admitted to the ACE program to take this course)
Students will utilize the Career Service Center and demonstrate a working knowledge of various job search strategies and career planning.

ACE 488 Practicum Coaching Exceptional Athletes (3-0)3 S
(ACE 315, students must be admitted to the ACE program to take this course)
Integration of theoretical knowledge and developmental issues with practical field experiences working with exceptional athletes.

ACE 489 Practicum Coaching Youth Sport (3-0)3 F
(ACE 256 and one of the Techniques of Coaching classes, students must be admitted to the ACE program to take this course)
Integration of theoretical knowledge and developmental issues with practical field experiences in coaching youth.

ACE 491 Professional Field Experience (1-6)6
(Department consent, students must be admitted to the ACE program to take this course)
May be repeated up to a maximum of 18 hours. Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
ACE 493 Special Topics A-Z (1-6-0)1-6
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

ACE 495 Independent Study 1-6
Faculty supervised study of topics not available through regular course offerings.

Athletic Training (ATTR)

ATTR 121 Sport Injury Control and Management (3-0)3 S
Training, conditioning, protection, and other injury prevention measures. First aid, emergency service, and care related to physical education and athletics.

Aviation Management (AVIA)

AVIA 101 Private Pilot (3-0)3
(AVIA majors only)
Provides the knowledge and skills needed to obtain a FAA private pilot certificate. Topics include aerodynamics, systems, regulations, airspace, performance, weather, flight publications, navigation, basic flight physiology, and flight safety. Flight training necessary to develop the basic skills for the operation of a single engine aircraft as a private pilot.

AVIA 181 Professional Field Experience (0-3)3
(AVIA majors only)
Flight training conducted in conjunction with AVIA 101 Private Pilot to obtain a FAA private pilot certificate.

AVIA 201 Instrument Rating (4-0)4
(AVIA 101)
Provides the knowledge required for an instrument rating. Includes instrument flight regulations, air traffic control system and procedures, instrument navigation and approaches, charts, weather, safety, aeronautical decision making, and crew resource management.

AVIA 231 Commercial Pilot (4-0)4
(AVIA 201)
Provides knowledge and skills required to obtain a FAA commercial pilot certificate. Topics include regulations, aerodynamics, meteorology, performance, limitations, pilotage, dead reckoning, navigation aids, aeronautical decision making, aircraft systems, night and high altitude operations, and commercial maneuvers.

AVIA 241 Multi-Engine Rating (2-0)2
(AVIA 101)
Provides the knowledge and skills necessary to safely and proficiently exercise the privileges and responsibilities of a multi-engine aircraft rating. Includes multi-engine aircraft systems, multi-engine aerodynamics, weight and balance, aircraft performance, and abnormal/emergency procedures.
AVIA 281 Professional Field Experience (0-8) 8
(AVIA majors only)
Flight training conducted in conjunction with most AVIA 200 level courses.

AVIA 301 Principles of Aviation Instruction (3-0) 3
(AVIA majors only)
Addresses the fundamentals of learning, lesson plans, and the teaching environment. Emphasis is placed on the organization, composition and presentation of lessons to individuals and groups in preparation for Fundamentals of Instruction knowledge examination.

AVIA 302 Initial Flight Instructor (3-0) 3
(AVIA 231)
The academic and aeronautical knowledge necessary to conduct flight and ground instruction. Includes subject areas necessary for a private and commercial pilot training, intensive instruction and practice in lesson plans, in-flight instruction, debriefing, and analysis.

AVIA 304 Instrument Flight Instructor (2-0) 2
(AVIA 302)
A study of the material required to teach the instrument rating combined with teaching responsibilities and techniques, including in-flight procedures. Topics include regulations, air traffic control, navigation, instrument approach procedures, weather, ADM, and CRM.

AVIA 306 Advanced Flight Instructor (1-0) 1
(AVIA 302)
A detailed study of the requirements for adding an additional aircraft rating to the flight instructor certificate. This course includes the specifications of the aircraft to be added, consideration of flight training differences, safety factors, effective evaluations, and flight instructor responsibilities.

AVIA 351 Crew Resource Management (3-0) 3
(AVIA majors only)
A study of human interactions that affect the safety of flight. Coursework emphasizes crew coordination, situational awareness, communication, workload management, decision-making, and human error management essential to the safe operation of a professional crew.

AVIA 352 ATP/Turbine Aircraft Operations (3-0) 3
(AVIA majors only)
This course includes an in-depth study of regional jet systems, FMS navigation, airline-level crew resource management and airline standard operating procedures. The topics covered apply to many regional jet aircraft and some turbo prop aircraft.

AVIA 380 Aviation Weather (3-0) 3
A study of weather, especially as it relates to aviation, with emphasis on weather concepts, reporting systems, forecasting systems, hazards, weather and flight planning, weather in relation to aircraft performance, and weather reporting hardware and software.

AVIA 381 Professional Field Experience (0-7) 3
(AVIA majors only)
Flight training conducted in conjunction with AVIA 200 and/or 300 level courses.
AVIA 382 Aerodynamics and Aircraft Performance (3-0) 3
(AVIA majors only)
A study of the fundamental principles of aerodynamics and aircraft performance. Includes terminology; the four forces of flight; aerodynamic stall and its relation to angle of attack and airspeed; stability and control; weight and balance; and flight at slow, transonic, and supersonic speeds. Performance topics include propeller and turbine performance, operation at high altitudes, and operation in extreme environmental conditions.

AVIA 383 Aircraft Systems (3-0) 3
(AVIA majors only)
A detailed study of basic and advanced aircraft systems, including piston and turbine power plants, electrical, hydraulic, fuel, lubrication, pneumatic, ignition, pressurization, landing gear, environmental, fire detection/extinguishing, flight control, and brake systems.

AVIA 385 Air Traffic Control and Airspace (3-0) 3
(AVIA majors only)
Designed to provide a detailed understanding of the interrelationship between the national airspace system and air traffic control (ATC), this course includes an overview of the U.S air traffic control system, types of airspace, ATC communication systems, ATC procedures, FAA ATC regulations, navigational equipment and operation, control tower operations, TRACON and center operations, non-radar operations, and environmental issues.

AVIA 480 Human Factors in Flight (3-0) 3
(AVIA majors only)
A comprehensive look at human factors in aviation, including human error, CRM, fatigue, body rhythms, decision making; fitness and performance, vision and visual illusions, motivation and leadership, communication, attitudes, workload management, training and training devices, and education and application.

AVIA 483 Air Transportation (3-0) 3
(AVIA majors only)
A study of both the historical and present aviation industry. Subjects include air commerce, domestic and international aviation regulation and regulatory agencies, legal issues in air transportation, air carrier aircraft, and general aviation aircraft.

AVIA 484 Aviation Safety (3-0) 3
Provides practical guidance on safe aviation operations during routine and unexpected situations. Includes judgment and decision skills, safety studies, safety management systems, accidents and incidents, contributing factors, managing resources, communication, accident investigation, and emergency situations.

AVIA 485 Aviation Economics (3-0) 3
(AVIA majors only)
A study of management practices in the airline industry. Topics include output, unit cost, traffic and yield, operating expenses and revenues, and the corresponding relationships that drive profit and loss.

AVIA 486 Aviation Management and Leadership (3-0) 3
(AVIA majors only)
Explores management methods used by aviation crews, management, suppliers, service providers, and manufacturers. Focuses on decision analysis, decision research, peer-to-peer communication, sales management, emotional intelligence, and the Johari Window.
AVIA 487 Aviation Security (3-0) 3
Presents basic information on security issues and concerns in the aviation industry. Includes the historical aspects of aviation security, current security operations, and security tools used within the industry.

AVIA 488 Aviation Stories (3-0) 3
Develops an understanding of how flying has come to be incorporated into literature since the early days of flight. Includes readings from books, journals, and memoirs that deal with the human side of flying.

AVIA 489 Aviation Law (3-0) 3
An overview of the basic principles of aviation law within the U.S. legal system. Areas of emphasis include constitutional law, administrative law, enforcement actions, international law, aircraft accidents, aircraft transactions, airports, airspace and aviation security, and labor and employment law.

Biology (BIOL)

BIOL 105 Environmental Biology (3-0) 3
Population growth and human impacts on the environment, including ecosystems destruction, biological diversity, pollution, and global climate change are explored to obtain the concepts necessary to understand complex environmental issues of our time.

BIOL 106 ENVIRONMENTAL BIOLOGY LABORATORY (0-3) 1
Field and laboratory exercises exploring fundamental ecological concepts, environmental problems, such as biodiversity, pollution and natural resource utilization.

BIOL 107 Biotechnology and Society (3-0) 3
An overview of the use of biotechnology to solve agricultural, medical, and environmental problems. Bioethical concerns and societal impacts of the use of the technologies will be discussed.

~BIOL 111 General Biology (3-3) 4
(§ENGL 101)
A comprehensive introductory course investigating the major areas of modern biology including scientific method, biological molecules, cell structure and function, histology, metabolism and the anatomy and physiology of animals. Laboratory exercises include vertebrate dissection.

~BIOL 112 General Biology (3-3) 4
(BIOL 111)

BIOL 122 Human Sexuality (3-0) 3
A study of biological, behavioral and societal aspects of sexuality. Issues considered include changing fecundity, social-legal implications, sex roles, sexually transmitted diseases, populations, erotica, aging, dysfunctions, decision-making skills for sex related issues.
BIOL 225. Biology Methods  (2-2)3 credits;
An introduction to scientific thinking, hypothesis generation, design of experiments, analysis of data, literature search, and writing a research paper. Coursework also includes basic laboratory safety, and laboratory and field skills for biologists.

BIOL 230 Human Anatomy and Physiology 1 (3-3) 4
(BIOL 111 or permission of department) (Part of an eight-hour sequence)
Biological principles including biochemistry, cytology, histology, musculoskeletal and nervous systems. Mammal dissection required.

~BIOL 231 Human Anatomy and Physiology 2 (3-3) 4
(BIOL 230) (Part of an eight-hour sequence)
Continuation of BIOL-231 with coverage of regulatory, circulatory, lymphatic, digestive, respiratory, urogenital, and integrative systems. Mammal dissection required.

BIOL 240 Microbiology (3-3) 4
(BIOL 112 or BIOL 231 or CHEM 116)
Comprehensive introduction to the biology of microorganisms with special emphasis on bacteria and viruses. Includes aspects of disease prevention and control, and human immunology. Laboratory exercises on physiology, identification, and culturing of bacteria.

BIOL 303 Genetics (3-3) 4
(BIOL 112, MATH 126)
A comprehensive course covering aspects of both classic and modern genetics, including heredity, molecular genetics, and population genetics. Laboratory exercises investigate basic principles of inheritance, manipulation of DNA, and bioinformatics.

BIOL 336 Vertebrate Embryology (3-3) 4
(BIOL 112)
Study of chordate development with reference to evolution of systems. Follows development from the gametes through ontogeny of selected animals.

BIOL 338 Behavioral Ecology (3-0) 3
(BIOL 112, ENGL 102)
Consideration of the influences of environmental factors on short- and long-term regulation, control, and evolution of the behavior of animals.

BIOL 343 Systematic Zoology (2-4) 4
(BIOL 112, CHEM 115)
Phylogeny, taxonomy and morphology of invertebrate and vertebrate phyla. Collection, dissection and preservation of specimens.

BIOL 347 Parasitology (3-3) 4
(BIOL 112)
The study of parasites and their effects on their host. Parasites of major medical importance to humans and their companion/agricultural animals; evolutionary relationships between parasites and hosts. Laboratory will include observations of preserved and live (if possible) specimens and discussions of current research on evolution of host/parasite relationships.
**BIOL 354 Organismal Botany** (3-3) 4  
(BIOL 112, CHEM 115)  
Anatomy, growth, reproduction, and biochemical and physiological processes of higher plants; survey of algae, fungi, nonvascular and vascular plants. Laboratory exercises on anatomy, physiology, and ecology of plants.

**BIOL 416 Cell Biology** (3-3) 4  
(BIOL 112, CHEM 116)  
Study of the structure and function of prokaryotic and eukaryotic cells, with an emphasis on eukaryotes. Areas of focus include biological molecules, membrane structure and function, intracellular sorting, the cytoskeleton, cell adhesion, cell signaling, and bioenergetics. Also includes an introduction to the cells of the immune system, cell death, and cancer. Laboratory exercises emphasize microscopy, sterile technique, and the growth and manipulation of cells in culture.

**BIOL 417 Biotechnology** (3-3) 4  
(BIOL 112, CHEM 116)  
Study of the structure, function, and regulation of DNA with an emphasis on recombinant DNA technology and related techniques that are used to analyze and manipulate DNA, RNA, and proteins. Also covered are applications of this technology in agriculture, industry, medicine, forensics, and scientific discovery. Examination of appropriate research papers from the scientific literature illustrates the use of specific techniques.

**BIOL 440 Comparative Anatomy** (3-3) 4  
(BIOL 112)  
A comparative study of chordate anatomy with reference to morphological and physiological adaptations, phylogeny, and systematics. Students dissect representative vertebrates including cats.

**BIOL 452 Plant Taxonomy** (3-3) 4  
(BIOL 112)  
Classification, phylogeny and morphology of vascular plants. Laboratory and field trip emphasis on West Virginia flora.

**BIOL 454 Immunology** (3-0) 3  
(BIOL 112) A comprehensive course with emphasis on the human immune system. Topics include: immune cells, lymphocyte development, antibodies and antigens, immunoglobulin gene rearrangement and expression, major histocompatibility complex, complement, cytokines, hypersensitivity, autoimmunity, transplantation, and immunodeficiency.

**BIOL 461 Principles of Evolution** (3-0) 3  
(BIOL 112, MATH 126 or permission of department)  
The historical origin and impact of evolutionary thought; the theory of Natural Selection; principles of population genetics; modern theory in evolutionary biology.

**BIOL 466 Ecology** (3-3) 4  
(BIOL 112, CHEM 116)  
Principles of environmental biology, population dynamics and evolution. Field trips and laboratory work.

**BIOL 493 Special Topics in Biology** (1 to 4-0 or 3-3) 1 to 4  
(Permission of department).  
In-depth study of a particular area of biology at an advanced level. May include laboratory.
**BIOL 494 Seminar: Capstone** (1-0) 1
(Permission of department)
Presentation and discussion of topics of mutual concern to students and faculty.

**BIOL-495 Independent Study** (0-3 to 0-12) 1 to 6
(Permission of department) Faculty supervised study of topics not available through regular course offerings.

**BIOL 497 Research** 1-6
(Open to qualified biology majors with department consent)
Independent research projects.

**Business Administration (BUSA)**

**BUSA 101 Introduction to Business** (3-0) 3 F
An introduction to the contemporary business world, including international and small business, quality, ethics, and career preparation. The role of accounting, economics, finance, management, and marketing activities are investigated.

**BUSA 293 Special Topics** (1-6-0) 1-6
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

**BUSA 493 Special Topics** (1-6-0) 1-6
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

**Business Core (BCOR)**

**BCOR 320 Legal Environment of Business** (3-0) 3 F
Explores the relationship of law, government and ethics to business enterprise. Provides overview of legal and ethical issues relevant to business decision-making and planning and the government regulations of business.

**BCOR 350 Principles of Marketing** (3-0) 3
(ECON 201)
Overview of Marketing and the interrelationships between Marketing and other business disciplines. Topics include the management of the product, communication, price, and distribution variables as well as introduction to buyer behavior and marketing research.

**BCOR 360 Operations and Quantitative Business Methods** (3-0) 3 S
(BCOR 370 & MATH 123)
The course is designed to acquaint students with a variety of production and operations management concepts and techniques. Productivity, competitiveness, operations strategy, capacity, location, layout, inventory, forecasting, and supply chain management are key concepts to be covered.

**BCOR 370 Managing Individuals and Teams** (3-0) 3
Topics include traditional management functions, employee motivation, leadership, team dynamics, individual and group decision-making, and individual differences. Additional
topics include social responsibility and ethics, diversity, organizational structure and design, organizational control, and managing innovation and change.

**BCOR 460 Contemporary Business Strategy (3-0)3 S**
(90 Credit hours plus FIN 325 & BCOR 360)
Investigation of components of the business curriculum. Investigation and analysis of current business problems.

**Business Law (BLAW)**

**BLAW 420 Law for the C.P.A. (3-0)3 S**
(BCOR 320)
A survey of those areas of commercial and regulatory law with which accountants need familiarity in order to exercise good judgment, practice their profession skillfully and understand their professional responsibility.

**Career-Technical Education (CTED)**

**CTED 100 Teacher Education Orientation (1-0)1**
College regulations, State Department of Education Policies and Certifications, effective study habits, use of resources, career opportunities.

**CTED 201 Introduction to Career-Technical Education (3-0)3**
Purpose, nature and scope of career-technical education for the CTE teacher. General orientation to career technical education instruction.

**CTED 301 Occupational Analysis (3-0)3**
Analysis procedures for determining career technical curriculum content, determination of course goals and objectives. Involvement of advisory committees in career-technical education.

**CTED 302 Course Construction and Planning in Career-Technical Education (3-0)3**
Analysis procedures for determining career-technical education curriculum content. Determination of course goals and objectives. Involvement of advisory committees for career-technical education. Factors, principles, and techniques of developing a course of study for a career-technical education program.

**CTED 303 Organization and Management of School Shops and Laboratories (3-0)3**
Responsibilities of the teacher as a manager, methods of handling tools and supplies, problems of effective shop organization and maintenance, safety administration, job evaluation and selection, group control and management.

**CTED 304 Safety in Career-Technical Education (3-0)3**
Responsibilities of the teacher in providing a safe learning/working environment for career technical students. The study of effective approaches to accident prevention and an introduction to the laws and regulatory agencies regarding safety management in the classroom and laboratory.
CTED 305 Methods of Examination in Career-Technical Education (3-0)3
An introduction to the methods and techniques for developing and administering written and performance tests. Course includes the charting of student progress and methods for determining student grades for a grading period.

CTED 306 Coordination of Cooperative Career-Technical Education (3-0)3
Background of coordination of cooperative part-time students. Methods and techniques for evaluating and selecting work stations, student selection, placement and follow-up. Role and use of advisory committees, and methods of evaluating a cooperative work experience program.

CTED 307 Computer Applications in Career-Technical Education (3-0)3
This course is designed to introduce students to computer-based instructional technology used in today's classrooms and labs. Included is an introduction to operating systems, application software for instruction and instructional management.

CTED 308 Application of Basic Skills in Career-Technical Education (3-0)3
Methods, techniques and strategies for incorporating the reinforcement of basic skills in career-technical instructional program. Emphasis will be placed on reading, writing, math, oral communication, and critical thinking skills as they apply to occupational specific training. Also addressed in this course is the teaching of job seeking and job keeping skills.

CTED 402 History and Philosophy of Career-Technical Education (3-0)3
Historical influences in the development of vocational education in America and Europe; motivating influences and the implications of philosophy in modern career-technical education.

CTED 409 Coordination of Career-Technical Youth Activities (3-0)3
Purpose and scope of Skills USA and other youth organizations. Application of youth activities within the related classroom instruction in career-technical education. Current trends in the development and movement of career-technical education activities in America.

CTED 411 Supervision of Career-Technical Education (3-0)3
Supervisory techniques for local, area and state levels; analysis of supervisory needs, duties and responsibilities, cooperation between school, labor management, and public agencies. Emphasis on improvement of instruction.

CTED 413 Advanced Materials for Career-Technical Education (3-0)3
Particular emphasis on developing individually prescribed instructional materials for special teaching areas. Time available for each student to work on an individual basis to complete work assignment.

CTED 415 Audio/Visual Productions in Career-Technical Education (3-0)3
Developing audio/visual equipment. Designing, programming and editing audio/visual productions for career-technical teacher education.

CTED 418 Demonstrations for Teachers in Career-Technical Education (3-0)3
The presentation of specific demonstration to selected teachers and students in the career-technical teacher's specialization. Critiquing demonstrations of others and comparing techniques employed.
CTED 419 Observations for Teachers in Career-Technical Education (3-0)3
Classroom visitations and written critiques of shops and laboratories in the teacher skill specialization. Observations of the industrial application of job skills in the teacher's specialization. Comparison of industrial and career-technical education shops and laboratories.

CTED 420 School-Community Relations in Career-Technical Education (3-0)3
Organization and planning for a program of school-community relations by the vocational teacher. Emphasis on preparing brochures, displays, news articles, conducting open house activities and working with members of the community.

CTED 421 Teaching Special Students in Career-Technical Education (3-0)3
Instructional planning for individual student needs. Special instructional techniques, and modification of the learning environment/physical setting for special students in career technical education.

CTED 422 Back to Industry Experience 1-6 hr.
(Department approval)
An occupational specialization updating experience for the in-service, career-technical teacher. In-service teacher will gain new knowledge and skill in an occupational specialization through back-to-industry experience. Hours of credit will vary according to the depth and magnitude of the experience. Credit shall be earned on a pass/fail basis.

CTED 423, 424, or 425 Industrial Processes (Occ. Update) 1-3 hr.
(Department approval)
Special seminars or workshops designed for specific occupational specialization updating. Special topics shall be designed to provide the in-service, career technical teacher with new knowledge and skill currently required of workers in business and industry. Hours of credit will vary according to the depth and magnitude of the training. Credit shall be earned on a pass/fail basis.

CTED 485 Teaching Methods in Career-Technical Education (3-0)3
Correlating shop/labatory instruction with classroom instruction. Individual and group instruction using various instruction sheets and materials. Emphasis is given to the four teaching steps in career-technical education. Physical factors relating to classroom and shop/labatory methods and techniques.

CTED-493 Advanced Computer Applications (3-0) 3
Special seminars or workshops designed for specific occupational teaching skills. Special topics to be selected cooperatively by the student and faculty advisor, hours of credit will vary according to the depth and magnitude of the project.

Chemical Engineering (CHE)

CHE 100 Introduction to Chemical Engineering (1-1)2  F
Introduction to engineering practice with an emphasis on Chemical Engineering. Course projects are designed to develop problem solving, teamwork, and communication skills. Project and laboratory work will be provided to demonstrate engineering concepts.
CHE 201 Material & Energy Balances 1 (3-0)3  F  
(CHEM 116)  
Introduction to chemical engineering fundamentals and calculation procedures, industrial stoichiometry, energy balances, material properties, and transient mass and energy balances.

CHE 202 Material & Energy Balances 2 (3-0)3  S  
(CHE 201)  
Continuation of topics from CHE 201

CHE 312 Separation Processes (3-1)4  S  
(CHE 316, CHE 320)  
Mass transfer theory and its application to process operations. Use of equilibrium stage and transfer unit concepts in design, diffusional and convective mass transfer, use of mass transfer coefficients Coverage of separations such as distillation, absorption, stripping, extraction, and membrane separations. Equipment design and sizing.

CHE 316 Transport Operations (3-1)4  F  
(PHYS 111, MATH 156)  
Physical phenomena associated with the movement and processing of fluids, and the generation and transport of thermal energy. Emphasis on quantitative models to design engineering systems and predict performance. Applications of these principles will be demonstrated in a variety of natural and engineering systems.

CHE 318 Particle Processing Operations (2-1)2  S  
(CHE 316)  
Physical phenomena associated with the movement and processing of particulate solids. Fluid-solid separations, particle formation, solids transport and storage.

CHE 320 Chemical Engineering Thermodynamics (3-0)3  F  
(CHE 202, MATH 156)  

CHE 327 Kinetics and Reactor Design (3-0)3  S  
(CHE 320)  
Kinetic models applied to the analysis and design of chemical reactors. Kinetic rate theory, homogeneous reactions in batch and flow systems, heterogeneous reactions and catalysis. Use of stirred tank and plug flow reactor models, temperature effects, effect of heat transfer, and catalytic reactors. Computer modeling is emphasized for design and analysis.

CHE 330 Modeling & Analysis (2-2)3  F  
(MATH 156)  
Topics include mathematical modeling of systems, numerical solution of algebraic and differential equations, approximation of mathematical relations.

CHE 350 Chemical Engineering Laboratory (1-3)2  S  
(CHE-316)  
Planning of experiments, data collection, statistical analysis of experimental data, and reporting of results.
CHE 357 Design Laboratory 1 (0-3) F
(§CHE 316, §CHE 320)
Analysis and synthesis in the design of processing systems and products. Economic evaluation, project management, flowsheet development, equipment selection, equipment specification, optimization, computer-aided design, process operability and control, process safety, and environmental protection. Team and individual projects are primary vehicles for assessment and skill development.

CHE 358 Design Laboratory 2 (0-3) S
(§CHE 312, §CHE 327, CHE 357)
Continuation of CHE 357

CHE 411 Advanced Heat Transfer (3-0)3 Elective
(CHE 316 or MAE 423)
Heat transmission in the processing industries, with an emphasis on the design of equipment used to reclaim thermal energy, supply process energy needs, and remove heat in critical cooling operations.

CHE 417 Advanced Separation Processes (3-0)3 Elective
(CHE 312)
Analysis and design of diffusional operations such as distillation, extraction, adsorption, and membrane separations. Solution of mathematical models of binary and multi-component separations, equipment selection, energy consumption, and selection of appropriate thermodynamic models. Computer-aided design is emphasized.

CHE 435 Chemical Process Control (3-0)3 F
(CHE 330, CHE 327)
Process control rationale and terminology. Dynamic modeling and response characteristics of process systems, analysis and synthesis of simple control systems, and coverage of control hardware, including actuators and sensors.

CHE 450 Unit Operations Laboratory 1 (1-3)2 F
(CHE 350)
Continuation of CHE-350. Primary emphasis is on separation operations.

CHE 451 Unit Operations Laboratory 2 (1-3)2 S
(CHE 450, CHE 435) W
Continuation of CHE 450. Experiments focus on reaction kinetics and reactor operation, control loop configuration and tuning, and dynamic response of systems. This course satisfies the GEF F2 writing requirement.

CHE 457 Design Laboratory 3 (1-3)2 F
(CHE 358)
Continuation of CHE 358

CHE 458 Design Laboratory 4 (1-3)2 S
(CHE 457)
Continuation of CHE 457.

CHE 461 Polymer Science and Engineering (3-0)3 Elective
(Department consent)
Classification of polymers, production and forming processes, polymer chemistry, material properties, engineering applications, and new developments.
CHE 493 Special Topics (variable credit) 1-3  Elective – as required
Department consent
Course covers a chemical engineering topic of interest to the students and faculty.

CHE 496 Senior Thesis (variable credit) 1-3  Elective – as required
Department consent
Research project or applied engineering problem. Project plan, formal report, and presentation are required. Project must have a faculty sponsor.

Chemistry (CHEM)

~CHEM 111 Survey of Chemistry I (3-3) 4 F
(Prerequisite or Concurrent: MATH 125, MATH 126 or MATH 117 or ACT math score of 23 or higher)
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. (Students may not receive credit for CHEM 115 or 117 and for CHEM 111. CHEM 111 and 112 cannot be used as pre-requisite courses for organic chemistry; students anticipating the possibility of taking organic chemistry must have credit for CHEM 115 and CHEM 116.)

~CHEM 112 Survey of Chemistry II (3-3) 4 S
(CHEM 111)
A continuation of CHEM 111. Nuclear chemistry; air and water pollution; useful natural materials; consumer chemistry; introduction to organic and biochemistry. (Students may not receive credit for CHEM 116, or 118 and for CHEM 112. (CHEM 111 and 112 cannot be used as pre-requisite courses for organic chemistry) Students anticipating the possibility or likelihood of taking organic chemistry must have credit for CHEM 115 and CHEM 116.

~CHEM 115 Fundamentals of Chemistry (3-3) 4 F, S
(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.)
Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses. (Students may not receive credit for CHEM 115.)

~CHEM 116 Fundamentals of Chemistry (3-3) 4 F, S
(CHEM 115)
Continuation of CHEM 115. (Students may not receive credit for CHEM 116 or CHEM 112) Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

CHEM 215 Introductory Analytical Chemistry (2-6) 4 F
(CHEM 116)
Volumetric analysis, gravimetric analysis, solution equilibria, spectrophotometry, separations, electro-mechanical methods of analysis. (Students may not receive credit for CHEM 215)
CHEM 233 Organic Chemistry I (3-0)3 F
(CHEM 116; and/or concurrent enrollment CHEM 235)
Basic principles of organic chemistry. Modern structural concepts, the effect of structure on
physical and chemical properties, reaction, and their mechanism and application to syntheses.
(Students may not receive credit for CHEM 233, CHEM 234, and for CHEM 231.)

CHEM 234 Organic Chemistry II (3-0)3 S
(CHEM 233 and CHEM 235 and/or concurrent enrollment CHEM 236)
A continuation of CHEM 233.

CHEM 235 Organic Chemistry Lab I (0-3)1 F
(CHEM-233 or concurrent enrollment)
Fundamental organic reactions and the preparation of organic compounds.

CHEM 236 Organic Chemistry Lab II (0-3)1 S
(CHEM 233 and CHEM 235 or concurrent enrollment)
A continuation of CHEM 235.

CHEM 310 Analytical Chemistry II (3-0)3 S-Odd years
(CHEM 215 and Physical chemistry.)
Lectures and demonstrations. Fundamentals of instrumental methods applied to chemical
analyses: electrochemistry, spectroscopy, mass spectrometry, and chromatography.

CHEM 346 Physical Chemistry I (3-0)3 S
(CHEM 234, MATH 156 and PHYS 112)
A first course in physical chemistry. Topics include: A study of thermodynamics and chemical
equilibria.

CHEM 347 Physical Chemistry Lab I (0-3)1 S
(CHEM 346)
Experimentation illustrating the principles of physical chemistry and offering experience with
chemical instrumentation.

CHEM 348 Physical Chemistry II (3-0)3 F
(CHEM 346 and Math 251)
Continuation of CHEM 346. Chemical dynamics and the structure of matter. (Students may
not receive credit for CHEM.)

CHEM 349 Physical Chemistry Lab II (0-3)1 F
(CHEM 346, CHEM 347 and CHEM 348)
Continuation of CHEM 347.

CHEM–420 Advanced Analytical Chemistry (3-0) 3
(CHEM-310)
Principles of analytical procedures and separations at an advanced level compared to CHEM
215 and 310.

CHEM 422 Intermediate Inorganic Chemistry I (3-0)3 S
(Physical Chemistry)
Structure, bonding, and reactivity of compounds of maingroup and transition metal
elements. Molecular structure and symmetry, solid state chemistry, ligand Field theory, and
coordination chemistry.
CHEM 423 Inorganic Synthesis Laboratory I (0-3)1 S
(CHEM 422)
Application of modern synthetic and spectroscopic methods of analysis to the preparation and characterization of main group, solid-state, transition metal, and organometallic compounds.

CHEM-430 Advanced Inorganic Chemistry (3-0) 3
(CHEM-234 and 322)
Symmetry and group theory as applied to molecular orbital theory, ligand field theory, catalysis and organometallic chemistry, coordination chemistry, bioinorganic chemistry, advanced main group compounds.

CHEM-440 Advanced Organic Chemistry (3-0) 3
(CHEM-234)
The study of the relationship between structure of carbon compounds and their reactivity and properties including reaction mechanisms, bonding, resonance, molecular orbital theory, aromaticity, conservation of orbital symmetry, photochemistry, reactive intermediates, and polymerization.

CHEM 451 Biochemistry (3-0)3 S
(CHEM 234 or concurrent)
Protein structure, conformation, and dynamics. Enzymes and their reaction mechanisms. Carbohydrate and fatty acid genesis and metabolism. Biosynthesis of macromolecular precursors. Information storage, transmission, and expression genetics.

CHEM 490 Teaching Practicum 1-4 hr.
(Department consent)
Teaching practice as a tutor or assistant.

CHEM 493 Special Topics I, II 1-6hr.
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

CHEM 494 Seminar 1-3 hr.
(Department consent)
Presentation and discussion of topics of mutual concern to students and faculty.

CHEM 497 Research I, II 1-6 hr.
(Department consent)
Independent research projects.

Civil Engineering (CE)

CE 204 Surveying (2-3)3 F
(MATH 126, MATH 128, DRET 120)
The measurement of distances, directions, elevations and areas on the earth’s surface; introduction to route surveying; introduction to computer programs for surveying.
CE 312 Construction Materials (2-3) S  
(MAE 243)  
A study of civil engineering materials; metals and alloys, mineral aggregates, cements,  
concrete and concrete products, bituminous materials, lumber and timber, and the testing  
of materials.

CE 331 Transportation Engineering (3-0) S  
(CE 204, MAE 242)  
Introduction to integrated transportation systems – vehicle, roadway and human  
characteristics; traffic engineering studies; intersections and interchanges; highway  
geometric design; highway pavement design; transportation planning; highway capacity  
analysis; evaluation of alternatives.

CE 347 Introduction to Environmental Engineering (3-3) S  
(MAE 331, CHEM 116)  
Introduction to physical, chemical, and biological characteristics of waters and wastewaters,  
and fundamental principles of water and wastewater treatment including hands-on  
laboratory exercises.

CE 351 Introductory Soil Mechanics (3-3) S  
(MAE 243, GEOL 312)  
Soils: origin, classification, clay, index properties; minerals, stresses in soils; shear  
strength; permeability; consolidation; bearing capacity; earth pressure; slope stability.  
Determination of index, strength, deformation permeability and properties of soils.

CE 361 Structural Analysis 1 (4-0) F & S  
(MAE 243, §MATH 251)  
Analysis of forces and deflections in determinate and indeterminate structures; influence  
lines for beams and trusses; dead, live, and snow loads on structures; and introduction to  
computer programs for structural analysis.

CE 411 Pavement Design (3-0) F  
(CE 312, CE 351, CE 331)  
Stresses in flexible and rigid pavements; equivalent single wheel load; design for frost  
penetration; soil classification; strength-density-moisture considerations; bases and sub-  
bases; soil stabilization; design of flexible airport and highway pavements; design of rigid  
airport and highway pavements; strengthening existing pavements.

CE 421 Hydraulic Engineering (3-3) F  
(MAE 331)  
Fundamental principles of incompressible fluid dynamics, hydrostatics, friction losses in  
pipes and open channels and design of water supply, stormwater and sanitary sewer  
systems and their components including pipes, pumps, and open channels.

CE 422 Advanced Hydraulic Engineering (3-0) S  
(CE 421)  
Advanced topics in open channel hydraulics including energy and momentum principles,  
channel controls and transitions, flow resistance, design of open channels, gradually varied  
flow in natural and artificial channels, hydraulic structures, introduction to unsteady open  
channel flow, and computer applications using public-domain software such as HEC-RAS and  
HY8.
**CE 425 Engineering Hydrology (3-0)3 F**
(MAE 331)
Scientific basis of the hydrologic cycle and its engineering implications; rainfall-runoff processes, hydrographs, flood routing, and statistical methods.

**CE 431 Highway Engineering (3-0)3 S**
(CE 204, CE 331)
Traffic volume, speed, accident analysis, parking lot design, sight distances; horizontal and vertical curves; cross section elements; deceleration lanes; medians; design of interchanges and intersections; highway capacity; drainage; level of service; tort liability; pavement introduction; highway design project.

**CE 432 Traffic Engineering (3-0)3 F**
(CE 331)
Traffic engineering concepts and parameters, traffic data collection and analysis methods, theory and design of traffic control systems, traffic safety and operation analysis.

**CE 444 Advanced Sanitary Engineering (3-0)3 F**
(CE 347)
Contemporary practices in sewage disposal and advanced waste treatment. Design of sedimentation units, biological treatment units, disinfection and advanced waste treatment units.

**CE 446 Solid Waste Management (3-0)3 S**
(CHEM 116, CE 351)
History of solid waste management. Laws and regulations pertaining to solid waste management. Sources, composition, and properties and municipal solid waste. Handling, collection, separation, transformation, transport, and disposal of solid waste including landfill design. Incineration, landfill closure, and recycling.

**CE 451 Foundation Engineering (3-0)3 F**
(CE 351, CE 462)
Subsurface exploration; bearing capacity; settlement analysis; shallow foundations; design of square and rectangular footings; design of combined footings; analysis of gravity and cantilever retaining walls; introduction to deep foundations; foundation design project.

**CE 452 Groundwater & Seepage (3-0)3 S**
(CE 351)
Fundamentals of groundwater flow; permeability; seepage principles; flownet interpretation; analytical and numerical solutions of confined and unconfined flows; filter design; geofabrics; subsurface drainage; groundwater contamination; disposal systems.

**CE 453 Earthwork Design (3-0)3 S**
(CE 351)
Use of soil mechanics principles in the analysis, design and construction of earth structures. Principles of compaction and compaction control; an introduction to slope stability analysis and landslides; earth reinforcement systems, and ground improvement techniques.
CE 461 Structural Analysis 2 (2, 3) F-Even
(CE 361, MATH 261, §CE 462 or §CE 463)
Classical and analytical techniques for solving complex structural systems; force methods of analyzing 2 and 3 dimensional trusses and frames; shear deformation, torsion, and unsymmetrical bending of beams and frames; modeling of structural systems using commercial computer programs; beams on an elastic foundation; springs; lateral load analysis of buildings, bracing systems; and diaphragm behavior.

CE 462 Reinforced Concrete Design (2-3) F
(§CE 361)
Theory of reinforced concrete; design using ACI 318 ultimate strength methods; design of beams, one-way slabs, columns, retaining walls, square and rectangular footings using ultimate strength design; deflection of reinforced concrete beams; and development lengths and splices.

CE 463 Steel Design (2-3) F
(CE 361)
Design of tension members, columns, beams, beam-columns, and connections using current AISC specifications. Introduction to the design of steel structures.

CE 464 Timber Design (2-3) F-Odd
(CE 361)
Study of basic wood properties and design considerations; determination of structural loads on buildings using ASCE 7; seismic design considerations; design and behavior of wood connectors, fasteners, beams, columns, and beam-columns; introduction to plywood and glue-laminated members; and the analysis and design of structural diaphragms and shear walls.

CE 479 Integrated Civil Engineering Design (3-0) F & S
(Senior standing)
Principles of management, contracts and specifications, cost analysis, study of critical path method as applied to the construction industry; completion of a comprehensive civil engineering project where several specialties of the field are involved.

CE 493 Special Topics (variable credit) 1-3 As needed
Topics to be selected depending on the interest of the student and faculty.

CE 497 Research (variable credit) 1-3 As needed
(Junior standing with department chair and instructor permissions)
Designed for the undergraduate student who wishes to engage in research. This course applies basic engineering principles, analytical procedures and design methodologies to special problems in depth by each student using library, computer, or laboratory facilities. Comprehensive written report and oral defense are required. Topic(s) and credit for each semester are announced at the time of course enrollment.

Communication Sciences and Disorders (CSAD)

CSAD 270 Effective Public Speaking (3-0) F
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.
Communication Studies (COMM)

COMM 100 Principles of Human Communication (1-0) 1 S
Introduction to the human communication process with emphasis on the principles, variables, and social contexts of communication.

COMM 102 Human Communication in the Interpersonal Context (2-0) 2 S
Introduction to interpersonal communication with emphasis upon application of one-to-one communication in a variety of social contexts.

Community Health Promotion (CHPR)

CHPR 172 First Aid and Emergency Care (2-0) 2 F
Emergency aid for the sick and injured. Emergency services aimed at reducing the potential of permanent disability or threats to life, as well as pain, damage, or suffering of a less serious nature.

Computer Engineering (CPE)

CPE 271 Introduction to Digital Logic Design (3-0) 3 S
(§EE 221 and §EE 222)
Introduction to the design of digital circuit systems. Topics include number systems, coding, Boolean and switching algebra, logic design, minimization of logic, sequential logic and design of digital subsystems. Laboratory experiments with digital circuits including number systems, design and application of modern digital circuitry for combinational and sequential circuits.

CPE 272 Digital Logic Laboratory (0-3) 1 S
(§CPE 271)
Experiments with digital electronic circuits including number systems, design and application of modern digital circuitry for both combinational and sequential logic circuits.

CPE 310 Microprocessor Systems (3-0) 3 F
(CPE 271)
Introduction to microcomputer systems with emphasis on the use of a microcontroller as a digital design element. Topics include basic computer architecture, binary number systems and codes, binary arithmetic and logic operations, parallel and serial I/O, A/D conversion, timers and counters, and interrupts. Students are required to develop assembly language and C-language software for interfacing to various peripherals. Microcontroller used to present case studies on several data collection and control examples.

CPE 311 Microprocessor Systems Laboratory (0-3) 1 F
(§CPE 310)
Machine language, assembly language and hardware and software interfacing. (This includes editing, linking, and debugging.) Memory, I/O and basic techniques of microprocessor interfacing.
CPE 421 Embedded Systems (3-3)4 S
(CPE 310)
Advanced family of processors (16, 32, 64 bit) studied in depth. Design and implementation of small embedded controllers. Register level programming with assembler language and C programs that reside and execute on the microcomputer. Use peripherals including serial I/O, parallel I/O, timers and interrupts. Design of basic interface circuitry for the microcomputer. Design of small embedded systems around microcontroller board.

CPE 442 Introduction to Digital Computer Architecture (3-0)3 F
(§CPE 310 and §CPE 311)
Control, data, and command driven computer architecture. Parallel processing, pipelining, and vector processing. Structures and algorithms for array processors, systolic architectures. Design of architectures.

CPE 450 Introduction to Microelectronics Circuits (3-0)3
(EE 355)
VLSI (Very Large Scale Integrated) circuit design, including layout, simulation and performance optimization of basic digital logic functions and combinations of such basic functions into more complex digital system functions. CAD tools are used for projects.

CPE 455 VHDL Design (3-0)3
(CPE 271)
Design of digital systems using Verilog/VHDL with Xilinx software and hardware (FPGA board). Students design digital systems at a high level, express the algorithms in Verilog/VHDL and use the Xilinx platform for simulation and debugging.

CPE 462 Wireless Networking (3-0)3
(EE 329).
Design and analysis of modern wireless data networks. Digital modulation techniques, wireless channel models, design of cellular networks, spread spectrum, carrier sense multiple access, ad-hoc networks routing, error control coding, automatic request strategies.

CPE 493 A-Z. Special Topics (variable 1-6 Credit Hours)
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

Computer Science (CS)

CS 101 Introduction to Computer Applications (1-0)4
Introduction to spreadsheets and databases for problem solving in disciplines such as math, science, engineering, business, social sciences, behavioral sciences, and environment: using computer applications to create technical reports and presentations.

CS 112 Computer Science for Engineers (3-0)3
(§MATH 126A or §MATH 128)
An introductory study of a high level programming language, including elementary programming techniques with an emphasis on structured programming and engineering applications. Laboratory use of computers is required.
CS 121 Computer Science 1 (3-2)4
(§MATH 126A or §MATH 128)
Problem solving methods and algorithm development; programming in high level language-designing, coding, debugging, and documenting programs using techniques of good programming style.

CS 122 Computer Science 2 (3-2)4
(CS 121 with a grade of “C” or better)
Software development with abstract data types; elementary data structures including lists, stacks, and queues; development of algorithms; classical sorting and search techniques; design methodology; file processing; recursion; and object-oriented design and development.

CS 201 Data Structures (3-0)3
(CS 122 with and a grade of “C” or better)
Introduction to data structures. The topics include search and sort techniques, trees, heaps, hash table and graph algorithms. Selected examples will be implemented in a high level language.

CS 220 Discrete Mathematics (3-0)3
(CS 122 and MATH 155)
Mathematical concepts used in computer science such as sets, relations, functions, counting principles, graphs, trees, and automata; introduction to basic graph algorithms and applications.

CS 221 Analysis of Algorithms (3-0)3
(CS 201 and CS 220)
Introduction to algorithm design and analysis. Growth rate of functions and asymptotic notation. Divide-and-conquer algorithms and recurrences; searching and sorting; graph algorithms including graph searching, minimum spanning trees, and shortest paths.

CS 222 Introduction Software Engineering (3-0)3
(CS 122 with a grade of “C” or better)
Principles of software engineering such as modifiability, efficiency, reliability, and understandability. Techniques include information hiding, data abstraction and modularity. Laboratory work is required.

CS 231 Introduction to Computer Organization (3-0)3
(CS 122 with a grade of “C” or better)
Components of a computer system; number systems, arithmetic operators, and codes; logic design principles and digital devices; micro-operations and instruction sequencing; central processing unit - control unit, registers, ALU; I/O processing; interrupts; memory; microprogramming; pipelined and parallel computers.
CS 264 Database Management  (3-0)3
(CS 122 with a grade of “C” or better)
A study of the fundamentals of database models with emphasis to the relational database model. Database query language will be examined. The students will receive hands-on experience with a relational database using SQL.

CS 265 C Programming  (2-0)2
(CS 122 with a grade of “C” or better)
Functions, parameter passing, dynamic memory allocation, pointers, and elementary data structures in C; software design and implementation with emphasis on creating and modifying large programs in procedural paradigm.

CS 293 Special Topics  1-6
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

CS 310 Principles of Programming Languages  (3-0)3
(CS 201)
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.

CS 321 Introduction to Networking  (3-0)3
(CS 122)
Concepts of networking with the emphasis on TCP/IP layered model of networking. Students will learn IP routing, TCP, UDP delivery of packets to client applications and write client server applications using various protocols.

CS 324 Database Management  (3-0)3
(CS 122 with a grade of “C” or better)
A study of fundamentals of database models. The primary emphasis will be the relational database model. The students will write SQL programs for managing data held in a relational data base.

CS 350 Computer System Concepts  (3-0)3
(CS 265 and CS 231)
System software organization; operating system concepts including processes, threads, memory management, and the user interface; elementary network concepts.

CS 365 Computer Languages  (1-0)1
(CS 122 with a grade of “C” or better)
An accelerated study of a programming language (such as C/C++, C#, JAVA, Visual Basic, Perl, ASP, HTML, Delphi, Ada, etc.) for students who have met the core curriculum courses in computer science.

CS 370 Microcontrollers  (1-0)1
(CS 112 or CS 265)
An introduction to microcontrollers. The use of development board and language, simple I/O, motor control (AC, DC and servos), some sensors, and microcontroller to PC communications will be covered. A project will be required of each student.
CS 410 Compiler Construction  (3-0)3
(CS 310)
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.

CS 450 Operating Systems Structures  (3-0)3
(CS 350)
Support of computer components; device management and interrupts, process scheduling, file management, complete OS structure, OS development and debugging, configuration management, and performance testing.

CS 454 Cryptology  (3-0)3
(MATH 441)
This course is designed to give students a basic introduction, the foundation, and developments in the field of cryptology. Mono-alphabetic substitutions, poly-alphabetic substitutions stream ciphers, block ciphers, public key cryptology, and quantum ciphers will be reviewed along with number theory and probability necessary for solving encryptions.

CS 456 Digital Image Processing  (3-0)3
(CS 201 and MATH 156)
This course covers techniques for image acquisition, transformation, enhancement, restoration, compression, segmentation and recognition. A brief introduction to advanced topics such as motion detection, optical flow will also be included.

CS 465 Introduction to Computer Security  (3-0)3
(CS 321 and Department Consent)
An overview of threats to computer security; technologies for security assurance and approaches to security solutions. Security vulnerabilities; encryption; access control; trusted systems; security administration.

CS 470 Introduction to Computer Graphics  (3-0)3
(CS 201)
Overview of 3D graphics hardware and gaming consoles; focus on developing 3D graphics software; fundamental algorithms for real-time 3D graphics with focus on game engine component development; introduction to three-dimensional game engine development.

CS 472 Artificial Intelligence  (3-0)3
(CS 222)
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.

CS 475 Game Development  (3-0)3
(CS 222 and Department Consent)
Design and implementation of games using innovative technology in human-computer interfaces. Principles of game design, physiology and psychology of each of the five senses, and technologies for delivering sensory stimuli.
CS 479 Advanced CS Math  (3-0)3
(§MATH 441)
Topics include applied numerical methods, statistical computing techniques, and data smoothing and filtering. Emphasis will be placed on design and implementation. Students will utilize software packages such as SAS, MatLab, or MathCad.

CS 480 Senior Design Seminar  (2-0)2
(CS 222 and Department Consent)
Penultimate semester. Group senior design projects with individual design assignments appropriate to student's discipline. Complete system-level designs of the subsequent semester's project presented in written proposals and oral presentations.

CS 481 Senior Project  (3-0)3
(CS 480)
Continuation of CS 480. Detailed design and implementation of the system including choice of components, algorithm development, interfacing, troubleshooting, working in groups, and project management. Also covers professional topics, including ethics, liability, safety, socio-legal issues, risks and employment agreements.

CS 491 Professional Field Experience  1-18
(Department consent)
Prearranged experiential learning program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

CS 493 A-Z Special Topics  1-6
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

Computerized Drafting and Design Engineering Technology (DRET)

DRET 120 Drafting I  (1-3)2
Fundamentals of drafting through the use of sketching and computer graphics as applied to orthographic views, sectional views, isometric views, and threads and fasteners. Also the student will be introduced to computer graphics early in the program and will be required to produce much of their work using CAD.

DRET 314 Computer Graphics  (2-2)3
(DRET 120, or department consent) (For non-majors)
Teaches use of the two-dimensional graphics capability of the microcomputer, using the AutoCAD industrial software package. Also covers printer and plotter capabilities and provides an introduction to 3D computer graphics.
Cooperative Education (COOP)

**COOP 101 Humanities Internship 1 (0)**
Student enrolls for course to designate a supervised one or two-term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 102 Humanities Internship 2 (0)**
Student enrolls for course to designate a supervised one or two-term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 103 Engineering Internship 1 (0)**
Student enrolls for course to designate a supervised one or two-term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 104 Engineering Internship 2 (0)**
Student enrolls for course to designate a supervised one or two-term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 105 Engineering Technology Internship 1 (0)**
Student enrolls for course to designate a supervised one or two-term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 106 Engineering Technology Internship 2 (0)**
Student enrolls for course to designate a supervised one or two-term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 205 Co-Op Work Experience 1 (0)**
Student enrolls for course to designate a supervised three to five term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 206 Co-Op Work Experience 2 (0)**
Student enrolls for course to designate a supervised three to five term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 207 Co-Op Work Experience 3 (0)**
Student enrolls for course to designate a supervised three to five term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 208 Co-Op Work Experience 4 (0)**
Student enrolls for course to designate a supervised three to five term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.

**COOP 209 Co-Op Work Experience 5 (0)**
Student enrolls for course to designate a supervised three to five term commitment to an off-campus work assignment in business, industry, governmental, or a non-profit organization.
Criminal Justice (CMJS)

CMJS 120 Survey of Criminal Justice (3-0)3  F
A survey course designed to familiarize students with the functions, structure, and organization of the agencies that are responsible for the administration of justice in America. Specifically, the course deals with the police and issues related to law enforcement, prosecution of offenders, the judicial system, and corrections.

CMJS 133 Juvenile Justice (3-0)3  S
The history, philosophy and process of the juvenile court system is studied. Students are familiarized with the juvenile facilities utilized by the State of West Virginia. The differences between adult and juvenile offenders are emphasized along with the differences in the role of correctional officers and staff in these locations. Current court cases and juvenile laws are examined in depth.

CMJS 134 Substance Abuse Policy (3-0)3  F-Odd
The fundamentals of mood-altering chemicals and theories, symptomatology, and treatment of their abuse. Addresses the current US policy regarding substance abuse prevention, treatment, criminality, and education.

CMJS 240 Correctional Counseling (3-0)3  S-Odd
A survey of contemporary counseling interventions for juvenile and adult offenders with an emphasis on cognitive and behavior modifications strategies. Other counseling models will also be examined.

CMJS 245 Criminal Law (3-0)3  F
This course focuses on that aspect of the American legal and judicial system associated with the violation of law and the process that is utilized to determine a verdict. Topics include the definitions of criminal offenses, rights of the accused, pre-trial procedures, the criminal trial and the appeal process.

CMJS 250 Community Based Corrections (3-0)3  F-Even
The history, philosophy, types and current trends in community-based corrections is studied and field trips to local facilities are utilized. The role of the correctional officer in this setting is examined. The function and operation of the parole and pardon boards as well as the statutory limitations and authorization, and community relations.

CMJS 310 Law Enforcement Administration (3-0)3  S
This course introduces the history of law enforcement in the United States, the roles of law enforcement officers, the purpose of policing, police conduct, police administration, and community relations.

CMJS 320 Courts and Judicial Systems (3-0)3  S
This course focuses on the structure and philosophy of the court system with special emphasis on court procedures, constitutional guarantees, the trial process, the role of judges, prosecutors, defense attorneys, and juries.

CMJS 410 Criminal Investigations (3-0)3  S-Odd
This course focuses on that aspect of the American legal and judicial system associated with the investigative processes as conducted by law enforcement and forensic science. Included will be an examination of the role of crime scene investigation, witness interviewing, and the investigators relationship with the prosecution.
CMJS 475 Seminar in Criminal Justice-Capstone (3-0)3
This capstone course integrates the knowledge and skills the students have acquired during all of their major course work. All students must be Criminal Justice Seniors in good standing and have permission of the instructor. Instruction will be in the classroom with two field trips outside the classroom setting.

Economics (ECON)

~ECON 201 Principles of Microeconomics (3-0)3
Introductory microeconomics analysis. Competitive behavior of firms, price determination, efficiency in production and equity in distribution.

~ECON 202 Principles of Macroeconomics (3-0)3
Introductory macroeconomics analysis. Aggregate demand and supply, saving, investment, the level of employment and national income determination, monetary and fiscal policy.

ECON 225 Elementary Business and Economics Statistics (3-0)3 S
(Sophomore standing and MATH 123 or MATH 126 with grade of "C" or better)
Basic concepts of statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression and correlation with emphasis on business and economic examples.

ECON 240 Introduction to Labor Unions (3-0)3 S
Structure, function and activities of labor unions and labor organizations; theories of labor organization and comparative labor movements; survey of labor and industrial relations.

ECON 301 Intermediate Micro-Economic Theory (3-0)3 F
(ECON 201)
Consumer choice and demand; price and output determination of the firm, and resource allocation, under different market structures; welfare economics, externalities, public goods, and market failure; general equilibrium; other topics.

ECON 306 History of Economic Thought (3-0)3 F-Odd
(ECON 201 & ECON 202)
Economic ideas in perspective of historic development.

ECON 331 Money and Banking (3-0)3 S
(ECON 201 & ECON 202)
The U.S. monetary and banking system and its functional relationship to the economic system; monetary theory and policy.

ECON 401 Managerial Economics (3-0)3
Cost and revenue analysis; compound interest model for profitability analysis; planning working capital needs; replacement policy; inventories; estimating demand, cost and pricing.

ECON 430 Collective Bargaining (3-0)3 S-Even
(ECON 201 & ECON 202 or department consent)
Union structure, administration and operation; basic theories of collective bargaining; the bargaining process, administration of agreements; wage and fringe issues in collective bargaining; institutional and administrative issues; case studies.
**ECON 441 Public Economics** (3-0)3  F  
(ECON 202)  
Economic roles of the public sector. Particular attention to market failure, redistributing income, the financing of public sector activities, relationships between federal, state, and local governments, and public choice.

**ECON 481 American Economic History** (3-0)3  F-Even  
(ECON 202)  
Central issues in the development of the American economy.

**ECON 493 Special Topics** (1-6-0)1-6  
(Department consent)  
Investigation of topics not covered in regularly scheduled courses.

**ECON 495 Independent Study** 1-6  
(Department consent)  
Faculty supervised study of topics not available through regular course offerings.

**Electrical Engineering (EE)**

**EE 200 Software Tools** (1-3)2  
(§EE 221)  
Introduction to the principal software tools used by electrical and computer engineers, including PSpice MATLAB, and Simulink. Students will solve engineering and mathematical problems using simulation tools and report their results.

**EE 221 Introduction to Electrical Engineering** (3-0)3  
(“C” or better in MATH 156)  
The definition of current, voltage, power, energy, resistance, capacitance, and inductance. The steady-state analysis of DC and AC circuits using the basic laws of circuits analysis: Ohm’s Law, Kirchhoff’s Laws, voltage divider, current diver, superposition, source transformation, Thevenin and Norton equivalent circuits, nodal analysis, mesh analysis, and maximum power transfer. Operations of capacitors and inductors. Basic steady state sinusoidal signals, phasors and circuit analysis. The definition of average and RMS values will be covered.

**EE 222 Introduction to Electrical Engineering Laboratory** (0-3)1  
(§EE 221)  
Electrical laboratory practice and procedures. DC and AC circuits labs, demonstrating the basic laws of circuit analysis, electrical measurement instrumentation, circuit analysis software, analysis of experimental data by means of linear regression, and electrical calculations.

**EE 223 Electrical Circuits** (3-0)3  
(§MATH 261; “C” or better in EE 221 and EE 222)  
**EE 224 Electrical Circuits Laboratory** (0-3)1
(§EE 223)
Design and experimental exercises in circuits. Power measurements, transient circuits, steady state AC circuits, frequency response of networks and active and passive filters. Use of PSpice and MATLAB simulation for comparison and verification.

**EE 311 Junior Instrumentation Laboratory** (0-3)1 S
(EE 221 and EE 222)
The goal of this course is to learn fundamental concepts of electrical engineering that apply to an industrial environment and how to design industrial data collection and control systems using off-the-shelf devices. Some specific topics covered are the fundamentals of programmable logic controllers (PLCs), including basic ladder diagrams, PLC components and operation, discrete and analog I/O, timers and counters, special function blocks, communications, and application examples; measurement and instrumentation principles including standards, transducers, actuators, interference and noise. The laboratory exercises will explore the development and design of automation and industrial-type systems.

**EE 327 Signals and Systems 1** (3-0)3
("C" or better in both MATH 261 and EE 223)
Classification of signal and system types. The study of linear differential and difference equations with zero state response and zero input response. Discrete time and continuous time convolution. The Z-transform and sampling. Laplace transforms and the concept of the transfer function. Applications to circuits. Frequency response and Bode plots.

**EE 329 Signals and Systems 2** (3-0)3 S
(§EE 327)
Fourier Series and Fourier Transforms; applications to AM and FM modulation techniques; Nyquist sampling theorem; power spectral density, discrete Fourier transforms; random processes, Gaussian noise, and noise through systems.

**EE 335 Electromechanical Energy Conversion and Systems** (3-0)3 S
(EE 223 and EE 224, §EE 345)
Three-phase power, power factor measurement by two wattmeters. Magnetic circuits. Iron losses, DC machine construction and types. Generator and motor performance analysis, voltage and speed control applications. Transformer network models, regulation and efficiency. Three-phase induction motors, performance analysis, starting, speed control, circuits and applications. Synchronous alternator analysis regulation, infinite bus active and reactive power control and applications. Ratings and general design considerations of electric machinery.

**EE 336 Electromechanical Energy Conversion and Systems Laboratory** (0-3)1 S
(§EE 335)
Transformers, DC motor and generator performance and characteristics, synchronous and induction machines performance and characteristics.

**EE 345 Engineering Electromagnetics** (3-0)3
(EE 223, MATH 251 and PHYS 112)
Coulomb’s Law, Gauss’s Law, Biot-Savart Law, Ampere’s Circuital Law, inductance, magnetic energy, magnetic force, time-varying fields, Faraday’s Law, Lenz’s Law; transmission lines; plane waves; reflection and refraction.
**EE 355 Analog Electronics** (3-0) 3 F
(EE 221 and EE 222)
Semiconductors, p-n junction diodes, theory and application. Bipolar junction transistors, operation biasing and BJT as an amplifier. JFET’s and MOSFET’s theory operation and applications. Small-signal low-frequency analysis and design.

**EE 356 Analog Electronics Laboratory** (0-3) 1 F
(§EE 355)
Design, fabrication, and measurement of analog electronic circuits. Study of biasing, stability, and frequency response.

**EE 400 Community Service** (0-0) 0
All BSEE and BSCpE students must complete 20 hours of community service. The successful BSEE and BSCpE students are expected to complete and evaluate service as a citizen of the local community.

**EE 405 Protective Relaying** (3-0) 3 F
(§EE 436)
General philosophy of protective relaying-relay systems, selection of circuit breaks, classification of relays, backup protection. Protection basics, relay coordination, CT/VT selection, relay characteristics, amplitude and phase comparators, basic design concepts. Digital (microprocessor-based), differential, directional, over-current, impedance, admittance, reactance relays, characteristics and applications. Protective relaying schemes for generators, transformers, busses, and transmission lines. Relay coordination for radial distribution systems.

**EE 411 Fundamentals of Control Systems** (3-0) 3 F
(EE 327)
Theory common to all feedback control systems. Mathematical models for control system components. Transform and time domain methods for linear control systems, system stability, root locus, Bode and Nyquist methods. Design specification in the time and frequency domains. Compensation design in the time and frequency domains. Use of MATLAB/Simulink

**EE 412 Automatic Control Laboratory** (0-3) 1 F
(§EE 411)
The lab is equipped with computer-aided control design and servo mechanisms and provides students with the opportunity to experiment, verify, and reinforce the fundamentals of automatic controls for analysis and design. Use of MATLAB/Simulink

**EE 413 Introduction to Digital Control** (3-0) 3
(EE 411)
Application of digital computer for real-time control of dynamical systems. Topics include modeling and analysis of discrete time systems, sampling and Z-transform., state variable analysis and system simulations, design techniques for discrete systems and digital implementations. Use of MATLAB/Simulink.

**EE 427 Introduction to Robotics** (3-0) 3
(Senior status)
Basic components of robot systems, coordinate frames, homogeneous transformations, kinematics for manipulator inverse kinematics, manipulator dynamics, Jacobian, manipulator control and robotic programming. Project required.
**EE 431 Electrical Power Distribution Systems** (3-0)3  
(EE 335 and EE 336)  
General considerations; load characteristics; subtransmission and distribution substations; primary and secondary distribution, secondary network systems; distribution transformers; voltage regulation and application of capacitors; voltage fluctuations; protective device coordination. (3 hr. lec.)

**EE 434 Alternative Energy Resources** (3-0)3  
(EE 335, EE 336)  
Working principles of alternative distributed energy technologies. Modeling, control, interconnection methods, and applications of modern alternative power generation resources. Future directions of alternative energy.

**EE 435 Introduction to Power Electronics** (3-0)3  
(EE 355 and EE 356)  
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.)

**EE 436 Power Systems Analysis** (3-0)3 F  
(EE 335 and EE 336)  
Three-phase balanced and unbalanced loads and power calculations. Power system network modeling, steady-state analysis by the per unit method. Network calculations by matrices, node equations, node elimination, bus admittance, impedance matrices, and fault calculations. Transmission line inductance, capacitance, network models, and power circle diagrams. Symmetrical components and applications to unsymmetrical fault analysis of power systems. Application of short circuit study and flow analysis for design of industrial power distribution systems using ETAP and MATLAB software.

**EE 445 Introduction to Antennas** (3-0)3  
(EE 345)  
Fundamental parameters of antennas, such as radiation patterns, radiation power density, beam width, directivity, gain, polarization, and input impedance. Radiation integrals and auxiliary potential functions. Far field radiation. Duality theorem and reciprocity theorem. Wire antennas, including small dipoles, finite length dipole, half-wavelength dipole, folded dipole, and Yagi-Uda antennas, loop antennas and log-periodic antennas.

**EE 456 RF Design** (3-0)3  
(§EE 461)  
Discrete and integrated components for AM, FM, and SSB circuits. High frequency analysis of BJT, FET, and MOSFET circuits. Oscillators; mixers; power amplifiers; phone systems; modems; RF tests and measurements. Requires prototyping lab.

**EE 461 Introduction to Communications Systems** (3-0)3 F  
(EE 329)  
The study of analog and digital modulation techniques in communication systems. Topics include Fourier series and transforms; AM, FM, and pulse code modulation; baseband and broadband digital modulation and spread spectrum techniques. Introduction to random processes and linear systems, spectral analysis, and noise processing.
EE 463 Digital Signal Processing Fundamentals (3-0)3
(EE 329)
Theories, techniques, and procedure used in analysis, design, and implementation of digital and sampled data filters. Algorithms and computer programming for software realization. Digital and sampled data realizations, switched capacitor and charge-coupled device IC’s. (3 hr. lec.)

EE 480 Senior Design Seminar (1-6)3
(Senior standing)
First part of the Senior Design capstone project. Student teams apply the engineering design process and modern analytical tools in creating engineering solutions or developing useful products. Complete system-level designs of the semester’s projects are presented in written reports and oral presentations.

EE 481 Senior Design Project (1-6)3
(EE 480)
Continuation of EE 480. Detailed design and implementation of the system including choice of components, algorithm development, interfacing, troubleshooting, working in groups, and project management. Also covers professional topics, including ethics, liability, safety, socio-legal issues, risks and employment agreements.

EE 493 A-Z Special Topics (variable 1-6 Credit Hours)
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

Electronic Engineering Technology (ELET)

ELET 315 Electronic Measurement and Instrumentation (3-3)4
(Department consent) – including discrete, integrated, linear, and digital components – to instruments used to measure and record physical quantities. Introduction to theory, units, and error analysis in the measurement of physical parameters. Also covered are noise reduction, communication circuits, interface topics, and troubleshooting.

ELET 337 Communication Systems (3-3)4
(Department consent)
Introduction to digital modulation techniques, error detection/correction and communication systems. Analog and digital voice and data transmission, copper and fiber optic transmission media, and network (LAN/WAN) topology and protocols.

ELET 375 Power Systems and Industrial Devices (3-3)4
(ELET 372) (For non-EET majors)
A study of polyphase industrial and commercial power utilization. This course covers polyphase AC motors; DC motors and generators; transformers, including sizing, testing, winding connections, efficiency and voltage regulation; industrial motor controllers and protective devices; lighting system design principles and practices; conductor insulation classifications; and National Electric Code. Students are required to complete a design project as part of the final grade. The project includes a formal report and oral presentation.
ELET-410 Control Systems Technology (3-0)3
(MATH 315)
A study of continuous control systems in open and closed loop. Transfer functions in the
frequency domain and the system’s time domain response are included. Components
including op-amps, potentiometers, synchros, motors, amplifiers, tachometers and
transducers; and the industrial control process concepts and systems are covered. The
emphasis is on closed-loop feedback systems, system characteristics, and stability analysis.
The use of the microcomputer in system control, system analysis, and simulation is
introduced.

ELET 420 Microprocessors and Digital Systems (3-3)4
(ELET 290) (Department Consent)
This course is a continuation of ELET 290 and covers such topics as analog/digital and
digital/analog circuits. It emphasizes circuit minimization techniques such as Karnaugh
mapping, variable entered maps, and the Quine McCluskey Method. Other areas explored
include LSI circuits, such as multiplexers and demultiplexers, decoders, and memory
devices. The course also includes an introduction to state machine design. Characteristics of
logic families are covered. The final one-third of the course is an introduction to
microprocessor architecture.

ELET 426 Microprocessor-Based Data Acquisition and Control (3-3)4
(ELET 410, ELET 420, or department consent)
Introduction to microprocessors, microcontrollers, and data acquisition boards for PC
platforms including applications related to data acquisition and control topics. The
application of assembly language programming is covered. Application of Intel 8051 family
microcontrollers are introduced and several hardware applications including memory
interfacing, timing considerations, and serial I/O are investigated through laboratory
exercises. PC based data acquisition boards and high level visual programming
environments are introduced through laboratory exercises.

ELET 436 Programmable Logic Controllers (3-3)4 F
(Junior status, ELET 290) (Department Consent)
A study of PLC’s and their applications to factory automation and industrial control. Includes
laboratory experience with programming in ladder logic and hard-wiring PLC’s to external
devices.

ELET 493 Special Topics (1-4 credits) As needed
(Senior status BSEET)
A course devoted to new topics or developments in the field. Normally this course will only
be taught once or twice and may become the basis for a designated course.

ELET 495 Independent Study (1-4 credits)
(Senior status and department consent)
Selected projects and/or research for senior BSEET students in current topics. Projects must
be approved by faculty before registration.
Engineering (ENGR)

ENGR 101 Engineering Problem Solving I (2-0) 2 S
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.

ENGR 111 Software Tools for Engineers (3-0) 3 F & S
(§MATH 126 and §MATH 128)
Use of software tools such as spreadsheets, numerical and symbolic mathematical analysis packages. Study of programming language, including elementary programming concepts and techniques. Preparation of graphs, interpolation and curve fitting, numerical integration and differentiation, and solution of linear and non-linear simultaneous equations. Emphasis is on the application of numerical methods and software applications. Laboratory practice is required.

ENGR 401 Senior Engineering Seminar (1-0) 1 F & S
(Senior standing)
Ethics and professionalism, engineering safety, copyright and liability issues. Citizenship, role of the engineer in society, current issues in engineering, ecological considerations and impact of globalization.

ENGR 402 Fundamentals of Engineering Review (2-0) 2 F & S
(Senior standing)
This course provides information and review materials for civil engineering students planning to take the discipline-specific Civil Fundamental of Engineering (Civil FE) exam. This course requires prior knowledge of the subject matter and will concentrate on problem solving and review. Basic concepts will be referenced, but will be explained only where the majority of students lack earlier exposure to the material. The topics included are statics, dynamics, mechanics of materials, fluid mechanics, hydraulics and hydrologic systems, structural analysis, structural design (structural steel and reinforced concrete), geotechnical engineering, transportation engineering, environmental engineering, surveying, mathematics, probability and statistics, engineering economics, material properties, and ethics.

ENGR 493 Special Topics (Variable credit) (1-3) As Needed

Engineering Technology (GNET)

GNET 308 Advanced Computer Applications (2-3) 3
(Department consent)
This course uses personal computers to select topics in advanced problem solving methodologies found in technology fields. Students will learn to use selected advanced computer applications software or programming languages in solving problems in technical calculus, statistics, graphics, matrices, complex variables, robotics, and advanced topics in engineering technology fields. Software or language selection in the technology fields will be based upon current developments in technology so that students will have an introductory exposure to some of the newest application tools.
GNET 410 C++ Programming for Technology (2-3) 3
(Department consent)
Emphasis on using C++ programming language in solving technology problems. Topics include the C environment, structured programming, technical calculations and functions, relational and logical operation, branches, loops, arrays and file creation.

GNET 412 Project Management (3-0) 3 F
The primary focus of this course is the analysis and management techniques used to implement a successful project. Topics include: project planning, project scheduling and staffing, and project control; project administration, economic analysis, and reporting procedures; and material and labor cost estimating. Project management software will be introduced, a project will be analyzed, and an in-depth project report will be generated and presented.

GNET 489 Senior Seminar and Project (1-3) 2 S
(For seniors in B.S. Engineering Technology and Industrial Technology programs.) Seminar on topics relating to improving processes, design, teamwork, problem solving, communication skills, life-long learning, professional and ethical issues, total quality, time management, and continuous improvement. Final project aimed at combining the skills and knowledge gained from the various areas of study in the student’s field. The student will be expected to report graphically, orally, and in written form on a final project approved by a departmental advisor. Presentations will be made to a representative board of the faculty.

GNET 495 Independent Study (1-4 credits) As needed
(Department consent)
To provide for supervised independent study or projects in Engineering Technology.

Engineering Technology – Civil (CIET)

CIET 320 Construction Methods and Equipment (2-3) 3
(CIET 131, junior status or department consent)
Study of the methods used in civil engineering construction and the management of equipment that relates to these methods. Topics include earthwork, roads, pipelines, foundations and construction in concrete, masonry, steel, and timber. The course will be supplemented by organized field trips to construction sites.

CIET 325 Codes, Contracts, and Cost Analysis (2-3) 3
(Junior status)
Construction Planning. Economics and time value of money, use of interest formulas, inflation, depreciation, construction documents; construction contract administration; professional ethics construction scheduling using Gantt charts, critical path and PERT. Use of industry-standard software for planning and scheduling.

CIET 330 Computer Applications in Hydraulics and Hydrology (2-3) 3
(CIET 230)
Review of the principles of hydraulics and hydrology; hydraulic calculations using software; and storm sewer design using software. Use of other industry-standard software for water resources applications with emphasis on Haestad Methods.

CIET 355 Construction Estimating (2-3) 3
This course is intended to provide students with the ability to estimate the costs of the various activities that constitute a construction project. Issues to be considered include
contract documents, the bid-award process, types of estimates, breakdown of project, elements of the estimate, quantity take off techniques, estimating labor, material and equipment costs, use of “experience” tables and databases, adjustments for overhead, profit and contingencies, assembling the estimate. Considerate use will be made of spreadsheets and an industry-standard estimating computer software package.

**CIET 382 Environmental Engineering Technology** (2-3)3  
(CIET 230, Junior status)  
This subject deals with water and air quality, stream pollution; purification of water, treatment and disposal of municipal wastewater; aspects of municipal solid waste and hazardous waste management; and environmental regulations and impacts. Included are routine environmental calculations and elements of design of treatment and pollution control systems. Basic laboratory and field tests and sampling techniques are also covered. Numerous field trips are included.

**CIET 495 Independent Study**  (1-4 credits) As needed  
(Department consent)  
To provide for supervised independent study or projects in Civil Engineering Technology.

**Engineering Technology - Mechanical (MEET)**

**MEET 316 Dynamics** (3-0)3  
(Department consent)  
A study of mass moment of inertia; rectilinear, angular, and planar motion; work, energy, and power; and impulse and momentum as applied to technology.

**MEET 435 Energy Conversion Systems** (3-0)3  
(MATH 155, PHYS 102, junior status or permission of the instructor)  
An introduction to energy conversion through a study of thermal heat and power. Fundamental thermodynamic processes, cycles, and systems will be covered. Applications studied will include electric power generation, internal combustion engines, material science, refrigeration, and air conditioning processes.

**MEET 493 Special Topics**  1-4 hrs. As needed.  
(Department consent)  
Investigation of topics not covered in regularly scheduled courses.

**MEET 495 Independent Study**  1-4 hrs. As needed  
(Department consent)  
To provide for supervised independent study or projects in Mechanical Engineering Technology.

**English (ENGL)**

**ENGL 090 Developmental Writing** (3-0)3  
A course designed for students who need to develop basic writing skills. Entering freshmen with an ACT verbal score of 17 or less or SAT verbal of 450 or less may not register for English 101 until successful completion of ENGL 090. Pass/Fail grading. Course does not count toward graduation.
ENGL 091 Fundamental Reading (2-0)2
A course designed to improve reading speed and comprehension. Entering freshmen with ACT of 17 or lower or SAT of 450 or below in reading must pass ENGL 091 prior to registering for ENGL 101. Pass/Fail grading. Does not count toward graduation.

~ENGL 101 Composition and Rhetoric (3-0)3
A course in writing non-fiction prose, principally the expository essay. Required of all bachelor's degree candidates unless the requirement is waived under regulations prevailing at the time of admission. (Note: Entering Freshmen who score 18 or below on the ACT English or 450 or below on the SAT verbal may not register for ENGL 101 until they demonstrate requisite skills on the English Department’s Writing Placement Test. Because of anticipated revisions in SAT or ACT scores, these scores are subject to change. Students should contact the English Department for more current information.

~ENGL 102 Composition and Rhetoric (3-0)3
(ENGL 101)
Writing college-level research papers based on argumentative models. Precision in footnotes, bibliographies, usage, punctuation, and stylistics assumed. Required of all bachelor's degree candidates unless the requirement is waived under regulations prevailing at the time of admission.

ENGL 111 Introduction to Creative Writing (3-0)3
(ENGL 101 and ENGL 102 or equivalent)
Practice in writing a sequence of structured exercises designed to enhance creative writing skills.

~ENGL 131 Poetry and Drama (3-0)3
An introduction to the genres.

~ENGL 132 Short Story and Novel (3-0)3
An introduction to the genres.

ENGL 212 Creative Writing: Fiction (3-0)3
An open enrollment introduction to the writing of fiction.

ENGL 221 The English Language (3-0)3
(ENGL 101 & sophomore standing)
An introduction to language, its structure in the mind, and its use in the United States.

~ENGL 225 World Literature (3-0)3
(ENGL 102 or department consent)
Great literature from outside the United States and Great Britain; includes both Western and Non-Western Literature.

ENGL 232 Poetry (3-0)3
Appreciation and enjoyment of poems through critical and analytical reading. Studies in the various types of poetry, and of the language, imagery, and techniques of poetic expression.

ENGL 233 The Short Story (3-0)3
The short story's structure, history, and contemporary forms.
ENGL 234 Drama (3-0)3
The drama's structure, history, and contemporary forms.

ENGL 235 Novel (3-0)3
The novel's structure, history, and contemporary forms.

ENGL 236 The Bible as Literature (3-0)3
Analysis of the themes, topics and literary genres of the Old and New Testaments. Issues to be discussed include the unity of the text, the status of authorship, translation, and the depiction of God.

~ENGL 241 American Literature 1 (3-0)3
A historical introduction and survey from its beginnings to the mid-nineteenth century.

~ENGL 242 American Literature 2 (3-0)3
A historical introduction and survey from the mid-nineteenth century to the present.

ENGL 252 Appalachian Fiction (3-0)3
Reading of short stories, novels, and other narratives by Appalachian authors.

ENGL 258 Popular American Culture: Film & Fiction (3-0)3
A study of the history and nature of science fiction from H.G. Wells to the present, with special attention to features of prose narration.

~ENGL 261 British Literature 1 (3-0)3
A historical introduction and survey from the Middle Ages through the eighteenth century.

~ENGL 262 British Literature 2 (3-0)3
A historical introduction and survey from the late eighteenth century to the present.

ENGL 263 Shakespeare 1 (3-0)3
Several of Shakespeare's most important plays.

ENGL 272 Modern Literature (3-0)3
British and American poetry, drama, and fiction from 1900 to 1960.

ENGL 301 Writing Theory & Practice (3-0)3
(ENGL 101 and ENGL 102)
Tradition and contemporary approaches to rhetoric and writing theory for professional writing and editing students who wish to develop their abilities to analyze and produce written texts.

ENGL 302 Editing (3-0)3
A comprehensive approach to editing, including the correctness and effectiveness of a document, information design, and editorial responsibility. Students gain a realistic perspective on workplace practice through real-world scenarios, case studies, and technological applications.

ENGL 303 Multimedia Writing (3-0)3
Study of communication and design issues in multimedia composition. Focuses on communication, creative expression, persuasion, interactivity, and rhetorical principles. Practice in composing multimedia documents such as online publications, interactive literary works, and tutorials.
ENGL 304 Business and Professional Writing (3-0) 3
(ENGL 101 and ENGL 102)
Students will analyze different writing contexts, meet the needs of different audiences, and organize and present material in letters, memos, and reports. Includes some research, Internet components, and a review of style, grammar and usage.

ENGL 305 Technical Writing (3-0) 3
(ENGL 101 & ENGL 102)
Writing in scientific and technical fields. Introduces students to typical genres, workplace practices, document design, and conventions of writing for experts and non-experts.

ENGL 306 Topics in Humanities Computing (3-0) 3
Topics include: literary studies (electronic publications, web-based, interactive fiction, poetry, drama, nonfiction), creative writing in digital media, composition on-line, pedagogy, cultural studies of electronic media, online communications, language studies. Topics rotate; check with instructor.

ENGL 321 History of the English Language (3-0) 3
Study of the nature of the language; questions of origins, language families, development, relationships of English as one of the Indo-European languages.

ENGL 493 Special Topics (1-6-0) 1-6
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

Exercise Physiology (EXPH)

EXPH 364 Kinesiology (3-0) 3 S
(Junior standing or department consent)
Anatomical, mechanical, and musculoskeletal study of the human body as the instrument for efficient performance of motor activities.

EXPH 365 Exercise Physiology 1 (3-0) 3 F
(Students must be admitted to the ACE program to take this course, Junior standing or department consent)
The study of the functioning of body systems during exercise and the acute and chronic adaptations that occur from exercise stress.

Finance (FIN)

FIN 310 Investments (3-0) 3
(FIN 325)
Investment analysis and management for the individual and the financial institution.
FIN 321 Personal Finance  (3-0) 3
Issues concerning the management of personal wealth. Topics include personal financial statements & records; budgeting; personal income taxes; consumerism; use of credit; housing & real estate; insurance; investment; and retirement planning.

FIN 325 Financial Management 1  (3-0) 3  
(ACCT 202 & MATH 123)  
Nature of financial management; financial environment; some fundamental concepts of financial management-financial ratios; financial analysis, planning and control; time value of money. Capital budgeting risk-return analysis.

FIN 326 Financial Management 2  (3-0) 3  S  
(FIN 325)  
Continues the discussion of the fundamentals of financial management begun in FIN 325. Management of working capital; international finance; cost of capital; financial leverage; long-term finance. Use is made of the case studies method.

Forensic Investigation (FRNX)

FRNX 101 Intro to Forensic Investigation  (3-0) 3 F  
Covers the history, organization, and functions of Forensic Investigation organizations; how disciplines of science produce evidence, and sciences role in the courtroom. Introduces different types of crime scenes and how they are processed.

FRNX 210 Analysis and Collection of Fingerprint Evidence  (3-1) 3 F  
Explores the collection, classification, and comparison of friction-ridge skin prints; the application of probability in decision-making; and photographic and chemical-processing techniques applied to the recovery of latent friction ridge detail.

FRNX 210 Fingerprint Evidence Laboratory  (0-0) 0 F  
(FRNX-210 Lecture)  
Provides Laboratory Experience related to FRNX-210

FRNX 212 Advanced Fingerprint Evidence  (3-1) 3 S  
The identification of unknown to known impressions ranging from easy to extremely difficult; ways latent prints can be distorted; “smart” searching protocols, and a deeper understanding of the formation of friction ridge skin.

FRNX 224 AFIS Systems  (3-1) 3 S-Even  
Introduction to Automated Fingerprint Identification Systems (AFIS) in use in the criminal justice system nationwide. 10-print entry and latent fingerprint entry will be conducted on a daily basis.

FRNX 301 Investigative Photography  (3-1) 3 F  
Covers nomenclature and operation of photographic equipment, with emphasis on lighting, exposure, depth of field, motion-blur and image composition. The use of alternate light sources, crime scene, macro and surveillance photography are highlighted.
FRNX 310 Firearms and Tool Marks (3-1) 3 S
Explores analysis of impression evidence including odontology, tool marks, foot and tread wear, tire tracks, and firearm-related impression evidence. Includes techniques for evaluating projectile trajectories as well as explosive evidence and post blast scenarios.

FRNX 311 Trace and Blood Spatter Evidence (3-1) 3 F
Covers various types of trace evidence and its collection, preservation and evaluation; and covers Bloodstain pattern analysis for incident reconstruction.

FRNX 312 Digital Evidence Protocols (3-1) 3 F-Even
Introduces digital investigations and the acquisition and analysis of digital evidence. Topics include computer investigations practices, processes, working with common computer software and disk structures, current computer tools and digital evidence controls.

FRNX 314 Questioned Documents (3-1) 3 F-Odd
Covers theories and principles of the creation, duplication, and alteration of written and printed materials; includes an overview of the methods used to identify the varying elements of papers, inks, and creation processes.

FRNX 315 Interviewing Theories and Practice (3-1) 3 F
Covers interviewing theories and techniques to determine emotional states from speech and body language, build rapport, prevent contamination, increase recall, and reduce the risk of false confessions.

FRNX 316 Medico-Legal Death Investigation (3-1) 3 S
Topics include the homicide crime scene, preliminary investigations, scene documentation, estimating time of death, identity of remains, death notification modes of death, suicides; sex and narcotics related homicides; evidence collection; autopsy; news media.

FRNX 318 Crime Scenes (3-1) 3 S
Examines concepts, field-tested techniques and procedures, and technical information concerning crime scene investigation. Focuses on the initial responding officer and duties of the investigator, and on various types of crime scenes.

FRNX 324 Forensic Anthropology and Osteology (3-1) 3 F-Odd
Includes background in forensic anthropology, most often associated with the analysis of skeletonized human remains, and guidelines for determining when to include and how to choose a forensic anthropologist in death investigations.

FRNX 326 Investigative Intelligence (3-1) 3 F-Even
This course provides a survey of intelligence techniques for protecting information (counter-intelligence), obtaining information, and analyzing raw information. The impact on public policy and the ethics of intelligence gathering are also covered.

FRNX 327 Sexual Assault Investigations (3-1) 3 F-Even
Explores the role of sexual assault investigation. Includes the history of society’s response to sex crimes, investigation techniques, forensic applications, offender typologies and victim studies, legal procedures and judicial decisions, and expert testimony.

FRNX 422 Cold Case Investigations (3-1) 3 S-Odd
Provides an opportunity to work with a local law enforcement agency in re-examining an old case using modern technology. Students should be prepared to travel to crime scene locations and the offices of regional law-enforcement.
FRNX 484 Senior Seminar in Forensic Investigation (3-1) 3 S
An in-depth analysis of problems and issues in forensics. Identifies areas for development within a student’s forensic education. Includes career and graduate school planning and portfolio, resume, and interview skills

FRNX 496 Senior Thesis (3-1) 3 S
A senior thesis project, such as a traditional research paper, a series of comprehensive research papers, or an active field project, that represents mastery of the discipline and shows analysis, synthesis, and evaluation.

Geography (GEOG)

GEOG 102 World Regions (3-0)3 F
Comparison and relationships of world regions. Geographical perspectives of contemporary global problems. Developing regions contrasted with modernized regions and the consequences of their interactions.

GEOG 108 Human Geography (3-0)3
A course introducing students to the study of geography as a social science by emphasizing the relevance of geographic concepts to human problems.

GEOG 240 United States and Canada (3-0)3 S
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.

Geology (GEOL)

GEOL 312 Geology (2-3)3 S
An examination of the earth from its beginning as a planet in the solar system to its present day structure. The course is chiefly concerned with the composition, character and architecture of the earth’s crust and with the agencies and processes which are continually altering it. Includes laboratory experience in mineralogy, petrology, mapping, and a one-day field trip.

Health Science (HLSC)

HLSC 104 Nutrition (3-0)3
The study of normal and therapeutic nutrition and its implications in health care across the lifespan. Principles of normal nutritional needs of infants, children, adolescents, pregnant, and lactating women, and other adults are studied in relation to the nutrients as provided by the basic four food groups.

History (HIST)

HIST 105 The Middle East (3-0)3
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.
~HIST 152 Growth of the American Nation to 1865 (3-0)3
Examines the basic political, economic, and social forces in formation and development of the United States before 1865. Emphasis on national development from independence through the Civil War.

~HIST 153 Making of Modern America: 1865 to the Present (3-0)3
(HIST 153 may precede HIST 152)
Continues the examination of basic political, economic, and social forces in the development of the United States since the Civil War.

~HIST 179 World History to 1500 (3-0)3
Comparative history of Africa, Asia, and Europe from earliest times until 1500. Political, economic, social, and religious developments with emphasis on patterns of authority, the individual, nature, and society.

~HIST 180 World History Since 1500 (3-0)3
(HIST 180 may precede HIST 179)
Comparative history of Africa, Asia, and Europe 1500 to the present. Political, economic, and social developments with emphasis on patterns of authority, the individual, nature, society, and the impact of the West.

HIST 203 Introduction to Medieval Europe 3
Treats the emergence of the distinctive culture of Western Europe from the Fall of Rome to the Renaissance, considering the transformation and interaction of politics, economics, society, religion, and ideas.

HIST 261 Recent America: The United States Since 1918 (3-0)3
The 1920's, the New Deal, World War II, and a survey of developments since World War II.

HIST 277 Revolutions in Science and Technology (3-0)3 F
Examines particular periods of intensified change in science and technology, to develop general understanding of scientific and technical change. Episodes may include the scientific, industrial, Darwinian, or other revolutions.

HIST 293 A-Z Special Topics (1-6-0)1-6
Investigation of topics not covered in regularly scheduled courses.

HIST-300 Greece and Rome (3-0)3
Covers the Minoan and Mycenean civilizations, Archaic and Classical Greece, Alexander the Great and the Hellenistic Age, the Roman Republic, the Etruscan and Carthaginian states, and the rise of the Roman Empire.

HIST 367 History of England (3-0)3 F-Even
England under Celtic, Roman, and Anglo-Saxon rule; the Norman conquests, the Tudor Monarchy; Elizabethan and Stuart England; England in the Age of the American and French Revolutions; Nineteenth-Century England; England in World War I; England in World War II; the decline of England as a world power.

HIST 375. Hollywood and History. (3-0)3
Examines twentieth century American culture, politics, and society through film. It explores the relationship between film and history using films as primary sources for understanding the past.
**HIST-393 A-Z Special** (3-0)3
Investigation of topics not covered in regularly scheduled courses.

**HIST 424. Britain 1455-1603** (3-0)3
England from Richard II to Elizabeth I, covering developments in politics, religion and society, ranging from the War of the Roses and the plague to Protestantism and Shakespeare.

**HIST 453 Civil War and Reconstruction** (3-0)3  S-Even
Causes as well as constitutional and diplomatic aspects of the Civil War; the role of American blacks in slavery, in war, and in freedom; and the economic and political aspects of Congressional Reconstruction.

**HIST 473 Appalachian Regional History** (3-0)3
Historical survey of Central Appalachia’s three phases of development: traditional society of the nineteenth century, the transformation of a mountain society by industrialization at the turn of the twentieth century, and contemporary Appalachia.

**HIST 484 Historical Research-Capstone** (3-0)3  S-Even (History major or department consent)
Capstone course that introduces historical research techniques. Completion and presentation of major research paper required.

**HIST 495 Independent Study** 1-6 hr. (Department consent)
Faculty supervised study of topics not available through regular course offerings.

**Human Services (HUMS)**

**HUMS 100 Community Service** 1-3 hr.
Arranged field placement in community service. Work hours will vary by credit and project.

**HUMS 210 Introduction to Welfare** (3-0)3  S
A basic course in work that includes an introduction to the concept of welfare history of welfare in the U.S., institutional aspects of welfare, basic work methods, and some techniques of community organization.

**HUMS 300 Introduction to Health Care Organizations** (3-0)3  F
An examination of the broad institutional and organizational components of the health care field with concentration on hospitals, nursing homes, health departments, and alternative delivery organizations. The role of both the physician and the health care manager in influencing the delivery of health care will be emphasized. Basic factors determining the cost and planning of health care will be considered.

**HUMS 320 Public Administration** (3-0)3  F
Concepts of public administration, including organizational theory, organizational authority and communications, personnel and financial administration, administrative responsibility in the public sector.
HUMS 330 Health Insurance (3-0)3
Institutions, laws, and public policy dimensions of health care insurance in America with a focus on health and insurance, the payment network, comparative systems and alternate delivery, and public policy.

HUMS 400 Health Services Law and Legislation (3-0)3 S
Recognition and comprehension of areas of legal liability in hospital activities; knowledge and familiarity with a wide variety of administrative duties and responsibilities of a nature, such as administrative investigations, misconduct and line-of-duty determinations, claims under the Medical Care Recovery Act, Federal Tort Claims Act, and other related matters.

HUMS 410 Fundamentals of Health Care Administration (3-0)3 S
Principles of modern health care administration, planning, organizing, directing, and controlling in health services management; contemporary issues in health care administration.

HUMS 420 Principles of Microhealth Finance (3-0)3 F
A critical study of healthcare finance at the department and sub-department level. The course will continue the study of financial information, decision making in the health care environment, processing mapping, capital and operational budgeting. Students will also be exposed to federal, state and local healthcare finance laws, rules and regulations.

HUMS 421 Principles of Macrohealth Finance (3-0)3 S
(HUMS 420)
The nature of financial information and the decision making process in the health care industry; the financial environment in health care organizations; trends in reimbursement systems; cost concepts, financial analyses, capital formation and project analysis.

HUMS 430 Medical Ethics (3-0)3 F
Philosophical and sociological investigation of complex moral problems in medicine and healthcare delivery, topics include euthanasia, abortion, allocation of scarce medical responses, accessibility problems, AIDS, research and human experimentation, among others.

HUMS 440 Long Term Care Administration (3-0)3 S-Odd
(HUMS 300)
The purpose of this course is to acquaint students pursuing a career in health care management with the dynamic and increasingly important field of long term care. The course provides a comprehensive overview of programs, policies, and services and examines the issues, challenges and dilemmas confronting long term care management and others in the field of health services. Long term care includes; skilled nursing facilities, assisted living, home health care, adult day care (both the social and the medical models), hospice, and a view of continuous care retirement facilities.

HUMS 460 Readings and Research in Health Services Administration 1-3 Hr
(Department consent)
Directed readings and research in health services administration.

HUMS 470 Health Services Planning (3-0)3 S-Even
Introduction to the history and development of health planning; introductory overview of planning techniques and familiarity with general quantitative methodology; legal, political, and economic factors in health care planning with emphasis on policy formulation and implementation.
**HUMS 480 Grant Writing and Documentation** (3-0)3  F-Even
Specialized course providing students with the knowledge and skills necessary to write grants that are based upon clearly defined needs analysis and project goals. Researching possible funding and sources, identifying goals and objectives, developing a program evaluation and time-line for a mock proposal will provide the students with real-life grant writing experience.

**HUMS 489 Practicum Capstone Internship** 3-12 hr.
Observation, participation and hands-on experience in a suitable agency. The organization chosen for each individual will depend upon the occupational goals of the student. The selected facility will have a qualified administrator to enhance student learning opportunities. At least 75 work hours for each 3 hours of credit minimum and more is recommended.

**HUMS 493 Special Topics** (1-6-0)1-6
Investigation of topics not covered in regularly scheduled courses.

**HUMS 494 Seminar** (1-3-0)1-3
(Senior standing or department consent)
Presentation and discussion of topics of mutual concern to students and faculty.

**Industrial Technology (INDT)**

**INDT 302 Industrial Safety** (3-0)3  F
Topics covered in this course will include: manual handling and material storage; mechanical injuries; industrial environmental hazards - solvents, particulates, noise, radiation, toxicology, and ergonomics, etc.; monitoring instruments; protective devices; industrial hygiene programs and safety practice in the use of basic hand and machine tools, with reference to OSHA, and other regulatory safety regulations.

**INDT 308 Automated Manufacturing** (2-3)3  S
(Department consent)
Principles, techniques and applications of Numerical Control CNC programming utilizing CAD/CAM, automated methods of material handling, manufacture, assembly, inspection/testing and material processing. Field trips may be included.

**INDT 354 Industrial Materials** (2-3)3  S
Introduction to types of materials - metals, ceramics, polymers, composites, and semiconductors; environmental degradation of materials, and material selection.

**INDT 384 Robotics 1** (2-3)3
Fundamental concepts of industrial robotics; manipulator control, sensor systems, microprocessor control schemes, robot geometry and configuration, path control, multi-axis dynamics.

**INDT 410 Plant Equipment and Maintenance** (2-3)3
(Department consent)
A study of various manufacturing equipment, maintenance planning, scheduling, staffing, training, and resource management for maintenance requirements in industrial/educational facilities. Field trips may be included.
**INDT 420 Construction Technology** (2-3)3  
(INDT 354 or department consent)  
A broad coverage of current and standard methods of construction using wood, steel, masonry, and concrete. Requirements for energy efficiency of heating, plumbing, and air conditioning are included. Emphasis is on residential, light commercial, and industrial construction.

**INDT 484 Robotics 2** (3-3)4 As needed  
(INDT 384)  
Advanced concepts of industrial robots; survey of robotic components, systems and manufacturers, robot work areas, material logistics, implementation considerations, future robotic considerations.

**INDT 495 Independent Study** (1-4 credits) As needed  
Faculty supervised study of topics not available through regular course offerings.

**Information Systems (ISYS)**

**ISYS 101 Introduction to Information Systems 1** (3-0)3  
An introduction to the concepts of computer organization, system software, programming languages, computer security, networking, and database management. The other topics include history of computing, Boolean logic, and computer ethics.

**ISYS 102 Introduction to Information Systems 2** (3-0)3  
(ISYS 101 and CS 121)  
Introduction to the programming process, including program design tools, coding and debugging. Design and implementation of programs and projects for business applications in Visual Basic.

**ISYS 115 Discrete Structures** (3-0)3  
(MATH 150)  
An introduction to discrete mathematics as it is used in computer science. Topics include functions, relations, sets, propositional and predicate logic, simple circuit logic, proof techniques, elementary combinatorics, and discrete probability.

**ISYS 270 Linux** (3-0)3  
(CS 122)  
An introduction to Linux programming, including shell scripting; the Linux file system; packaging software; process and thread creation; process and thread synchronization with semaphores and mutexes; interprocess communication with pipes; and programming sockets.

**ISYS 325 C#** (3-0)3  
(C or better in CS 122)  
This course provides students the necessary skills for developing applications using C# within Microsoft Visual Studio.NET environment focusing on object oriented design, program structure and implementation guidelines for developing applications.
**ISYS 366 e-Commerce** (3-0)3
(CS 324 and ISYS 325)
The essentials of design and creation of data driven e-commerce websites associated with complex databases. Upon completion a student will have built a data driven commercial website similar to amazon.com in both ASP and php.

**Journalism (JRL)**

**JRL 101 Media and Society** (3-0)3 S
Examines the relationship between media, culture and society, with emphasis on the history, structure, and organization of the mass media.

**Management (MANG)**

**MANG 310 Management of Small Business** (3-0)3
(BCOR 370)
Focusing on the management of small business, the course is designed both for those seeking employment in small business, and for those entering large organizations which deal with small firms as suppliers, customers, and competitors.

**MANG 330 HR Management Fundamentals** (3-0)3
(BCOR 370)
Fundamental principles and practices related to the procurement, development, maintenance, and utilization of human resources. Focus on areas such as human resource planning, selection training, performance appraisals, compensation, safety and health, and labor relations.

**MANG 350 Leadership in Business** (3-0)3
The course focuses on deepening understanding of human behavior in organizations and to improve upon the practice of leadership and management as a result of increased understanding.

**MANG 360 International Business** (3-0)3
(BCOR 370)
The course explores the cultural, economic, and political environments of business. Other topics include globalization, import and export, foreign direct investment, foreign currency exchange, regional economic cooperation, and the multinational enterprise.

**MANG 375 Business Simulation** (3-0)3 S
(ACCT 331, BCOR 350, BCOR 370 and FIN 325)
Business games that provide students with simulated real-world managerial decision-making experiences. The simulation provides students with the opportunities to make decisions that cross over functional lines.

**MANG 386 Business Statistics** (3-0)3
(MATH 123)
Elementary principles of collecting and presenting statistical data; frequency distribution; grouping averages; dispersion and skewing; sampling processes; statistical inference; simple correlation; series analysis.
MANG 420 Business Information Systems (3-0)3  
(BCOR 370)  
Use of EDP for decision making with emphasis on application in the functions of finance, marketing, personnel, accounting, and operations management.

MANG 422 The Individual and the Organization (3-0)3  
(BCOR 370)  
Examination of how the individual, the group, and the organization interact to influence the behavior of the business organization and that of its human resources.

MANG 491 Professional Field Experience 1-6 Hr.  
(Department consent; may be repeated up to a maximum of 6 Hours)  
Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

Marketing (MKTG)

MKTG 315 Consumer Behavior (3-0)3  
(BCOR 350)  
The consumer decision process in a marketing framework. Emphasis on psychological and sociological concepts which influence the decision process.

MKTG 325 Marketing Research (3-0)3  
(BCOR 350)  
Scientific approach to the solution of marketing problems with emphasis on research methods and techniques.

MKTG 380 Integrated Promotions (3-0)3  
(BCOR 350)  
An analysis of the promotional mix options; advertising; personal selling; and sales promotion, and the integration of these options into the marketing mix.

MKTG 410 Retail Management (3-0)3  
(BCOR 350)  
The organization and operating environment of retail firms. Special emphasis placed on consumer market segmentation and the marketing variables of merchandise mix, effective pricing, store location, and communication with suppliers and consumers.

MKTG 420 Sales Management (3-0)3  
(BCOR 350)  
Concentrates on the managerial responsibilities of sales managers for directing, motivating, and controlling a sales force plus the techniques of selling, including objections and closing.

MKTG 485 Global Marketing (3-0)3  
(BCOR 350)  
Evaluation and analysis of marketing strategies in a global environment; examination of the relationship between international buyer behavior and the elements of the marketing mix.
Mathematics (MATH)

**MATH 91 Elementary Algebra (3-0)3**
(For students with ACT score of 14-16)
Addition and multiplication of polynomials; integral exponents; graphing linear equations;
linear inequalities; solving systems of linear equations; real number operations; solving
linear equations. Credit not applicable toward degree requirements.

**MATH 93 Intermediate Algebra (3-0)3**
(For students with ACT score of 17-18 or MATH 91)
Radical expressions; radical, rational, and quadratic equations; factoring; rational
expressions; absolute value equations and inequalities; solving systems by determinants.
Credit not applicable toward degree requirements.

~**MATH 121 Introductory Concepts of Mathematics (3-0)3 F/S**
(MATH 91 or a math ACT of 17 or more and 1 unit of high school algebra)
(Designed for non-science majors who do not need the techniques of mathematics for other
coursework in their programs.)
Topics in modern mathematics.

**MATH 123 Finite Math (3-0)3**
(MATH 93, or 1 unit of high school algebra and ACT math score of 19 or higher)
Fundamentals of algebra; functions and graphs; linear functions; introduction to exponential
and logarithmic functions; solving linear and quadratic equations; matrices.

~**MATH 126A College Algebra (3-2)3**
(For engineering, science, or mathematics students with 2 units each of high school algebra,
1 unit of high school geometry and a math ACT score of 19-22; MATH 93) (3 credits
applicable toward degree requirements.) (See MATH 126B for Topics)

~**MATH 126B College Algebra (3-1)3**
(2 units of high school algebra, 1 unit of high school geometry and ACT math score of 23 or
higher. Students who have passed MATH 93 must register for MATH 126A and not MATH
126B.)
Review of the real number system and algebraic expressions, equations, inequalities,
graphing, functions, exponential and logarithmic functions, basic matrix operations and
properties systems of equations, polynomials.

~**MATH 126C College Algebra (3-0) 3**
(2 units of high school algebra, 1 unit of high school geometry and ACT math score of 19 or
higher. This course is not offered on-campus during the Fall and Spring semesters.
Review of the real number system and algebraic expressions, equations, inequalities,
graphing, functions, exponential and logarithmic functions, basic matrix operations and
properties systems of equations, polynomials.

~**MATH 128 Plane Trigonometry (3-0)3**
(Grade of “C” or better in MATH 126A, or MATH 126B, or MATH 126C)
Trigonometric functions, identities, vectors, complex numbers, and trigonometric equations.

**MATH 129. Pre-Calculus Mathematics (4-1)3**
(ACT math score of 25 or higher)
A treatment of algebra, analytic geometry, and trigonometry.
MATH 150 Introduction to Calculus (3-0) S
(Grade of “C” or better in MATH 123 or MATH 126A or MATH 126B)
For in other disciplines needing calculus for applications. Limits of sequences and functions, continuity, derivatives, and integrals of polynomials, rational functions, and exponential and logarithmic functions, partial derivatives, maxima and minima.

MATH 155 Calculus 1 (4-1)4
(Grade of “C” or better in MATH 126A, or MATH 126B, or MATH 126C and MATH 128; or Grade of “C” or better in MATH 129; or ACT math score of 28 or higher).
Introduction to limits, continuity, derivatives, antiderivatives, definite integrals, and applications of the derivative.

MATH 156 Calculus 2 (4-0)4
(Grade of “C” or better in MATH 155)
Techniques of integration, applications of the definite integral, polar coordinates, indeterminate forms, and infinite series.

MATH 251 Multivariable Calculus (4-0)4
(Grade of “C” or better in MATH 156)
Introduction to solid analytic geometry, vector algebra, matrix algebra, calculus of several variables.

MATH 261 Elementary Differential Equations (4-0)4
(MATH 251 or grade “B” or better in MATH 315)
Ordinary differential equations, Laplace transforms, partial differential equations, Fourier series, applications.

MATH 283 Introduction to Concepts of Mathematics (3-0)3 S
(MATH 156 and department consent)
Elementary logic, basic theory, relations and functions, equivalence relations and decomposition of sets, order relations, cardinality. Emphasis on learning to prove theorems.

MATH 315 Advanced Technical Mathematics (4-0)4 F
(MATH 155 or department consent)
Applications of integration to areas, volumes, centroids, and moments of inertia; differentiation and integration of trigonometric, logarithmic and exponential functions; methods of integration, expansion of functions in series; elementary differential equations.

MATH 341 Introduction to Algebra Structures (3-0)3 As needed
(MATH 283 or department consent)
A study of groups, rings, and fields together with their substructures, quotients and products, morphisms; the fundamental homomorphism theorems.

MATH 378 Discrete Mathematics (3-0)3 S
(MATH 251)
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.
MATH 381 Topology (3-0)3 As needed
(MATH 283 or department consent)
Introduction to metric and topological spaces. Topics include: continuity, convergence, separation, compactness, and connectedness.

MATH 420 Numerical Analysis 1 (3-0)3 As needed
(MATH 261 or MATH 441, Programming ability required)

MATH 441 Applied Linear Algebra (3-0)3
(MATH 251)
Matrix algebra with emphasis on algorithmic techniques and applications to physical models. Topics include solution of large systems of equations, orthogonal projections and least squares, and eigenvalue problems.

MATH 448 Probability and Statistics (3-0)3
(MATH 251; grade of B or higher in MATH 315)
Samples spaces; probability, definition and elementary properties; random variables, expectation; special distributions; estimation; hypothesis testing; linear regression.

MATH 451 Introduction to Real Analysis 1 (3-0)3 F
(MATH 283 or department consent)
A study of sequences, convergence, limits, continuity, definite integral, and derivative, differentials, functional dependence, multiple integrals, sequences, and series of functions.

MATH 452 Introduction to Real Analysis 2 (3-0)3 S
(MATH 451)
A study of sequences, convergence, limits, continuity, definite integral, derivative, differentials, functional dependence, multiple integrals, sequences, and series of functions.

MATH 456 Complex Variables (3-0)3 As needed
(MATH 251 and department consent)
Complex numbers, functions of a complex variable; analytic functions; the logarithm and related functions; power series; Laurent series and residues; conformal mapping and applications.

MATH 493 Special Topics (1 to 4) As needed
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

MATH 496 Senior Thesis (1 to 3) As needed
(Department consent)
Mechanical Engineering (MAE)

MAE 201 Applied Engineering Analysis (3-0)3 S
(ENGR 111, MATH 156)
Overview of engineering analysis fundamentals. Applied linear algebra and statistical analysis. Use of software such as spreadsheets, symbolic and analytic mathematical modeling packages, solid modeling packages, preparation of graphs of data and curve fitting.

MAE 240 Manufacturing Processes (2-3)3 F & S
An introduction to manufacturing systems and strategy. A study of Manufacturing Processes. Measurement and quality assurance, engineering materials; machining, welding and casting processes; hot and cold forming and joining processes, manufacturing and production systems, thermal treatments; equipment and process demonstration films. Lab involves student-performed projects utilizing experience in operation of the various processes.

MAE 241 Statics (3-0)3
(MATH 155)
Addition and resolution of forces, equilibrium of a particle, moment of a force, vector methods, equivalent force systems, equilibrium in two and three dimensions, analysis of trusses, analysis of frames and machines, analysis of beams - shear and moment diagrams, friction, centroids, center of gravity, and moment of inertia.

MAE 242 Dynamics (3-0)3
(MAE 241, MATH 156)
Particle dynamics including study of rectilinear and curvilinear motion, Newton's laws, work and energy, impulse and momentum. Systems of particles, kinematics of rigid bodies, plane motion of rigid bodies, kinetics of rigid bodies in three dimensions.

MAE 243 Mechanics of Materials (3-0)3
(MAE 241, MATH 156)
Analysis of stresses, strains, and deformations in tension members, thin-walled pressure vessels, connections, circular torsion members, beams and columns. Members with combined loadings are also covered.

MAE 320 Thermodynamics (3-0)3 S
(MATH 156)
Fundamental concepts of energy analysis along with models for material properties necessary for problem solving including use of computer-aided thermodynamic property tables; First Law, introduction to Second Law, pressure, temperature, volume, enthalpy, and entropy. Design of some simple thermal systems.

MAE 321 Applied Thermodynamics (3-0)3 F
(MAE 320)
Continuation of Thermodynamics. Irreversibility and availability; power and refrigeration cycles, thermodynamic relations; mixtures and solutions; chemical reaction; phase and chemical equilibrium; flow through nozzles and blade passages. Design of some illustrative thermal systems.
MAE 331 Fluid Mechanics (3-0)3  
(MAE 242, MATH 156)  
Properties of fluids, fluid statics, fluid kinematics, thermodynamic principles, momentum and energy principles, similitude and dimensional analysis, laminar and turbulent flow, viscous effects, flow in pressure conduits.

MAE 332 Experimental Methods (0-3)1 S  
(MAE 321, MAE 201)  
Methodology of experimental investigation; common properties of electrical, mechanical, thermal, balancing, fluid systems, and statistical analysis of data.

MAE 333 Mechanical Measurements (0-3)1 F  
(MAE 320, MAE 201)  

MAE 340 Vibrations (3-0)3 S  
(MATH 261, MAE 242)  
Review of linear algebra. Systems of one degree of freedom, undamped and damped; free and forced vibrations; transient and nonlinear vibrations; multi-degree of freedom systems with simulations by analog or digital computer.

MAE 342 Dynamics of Machines (3-0)3 F  
(§MAE 242)  
Analysis of motion in linkages, cams, gears and other basic mechanisms. Synthesis of linkages, cams, gear profiles, and gear trains. Analysis techniques include algebraic, graphical methods, and computer simulation.

MAE 405 Senior Mechanical Engineering Laboratory (0-3)1  
(MAE 332, MAE 423, MAE 201)  
Analysis and testing of selected thermal or mechanical systems, such as, turbines, fans, pumps, air conditioning, heat pump, and internal combustion engines, statistical analysis.

MAE 407 Power Plant Engineering (3-0)3 As needed in F  
(MAE 321)  
Fuels and combustion, steam generators, super heaters, reheaters; condensers, economizers; feed water heaters; air preheaters, draft systems; introduction to nuclear power plant systems; aspects of environmental pollution, alternative energy systems including hydroelectric plants; field trips.

MAE 410 Materials Science (3-3)4 S  
(CHEM 115, MAE 243, senior status)  
Metals, microstructure, chemical composition, heat treatment, plastic deformation, fracture, fatigue, creep, and wear; introduce preparation and microscopic examination of specimens; advanced materials testing.

MAE-419 Heat Transfer Laboratory (0-3)1 S  
(Must be taken with MAE 423)  
It is a laboratory session consisting of traditional and computer-linked experiments on various heat transfer processes such as conduction, convection and radiation involving several types of commercial heat transfer equipment.
MAE 423 Heat Transfer (3-0)3 S  
(MAE 320, §MAE 321, §MAE 419)  
Steady-state and transient conduction; one-, two-, and three-dimensional conduction; free and forced convection; radiation; heat exchangers; heat and mass transfer by analytical, numerical, analogical, and experimental methods. Design of thermal systems.

MAE 425 Internal Combustion Engineering (3-0)3 As needed  
(MAE 321)  
Operating characteristics; engine cycles; thermochemistry and fuels; air and fuel induction; fluid motion within combustion chamber; combustion; exhaust flow; emissions and air pollution; heat transfer in engines; friction and lubrication, survey of recent developments.

MAE 427 Heating/Ventilating/ Air Conditioning (3-0)3 As needed  
(MAE 321, MAE 423 or department consent)  
Air and humidity relations; comfort and indoor air quality; building heat transfer; design heating and cooling loads; air distribution; refrigeration; systems and equipment; system energy analysis; control systems.

MAE 428 Aerodynamics (3-0)3 As needed  
(MAE 321, MAE 331)  
Bernoulli’s equation; dimensional analysis; potential flow analysis; lift analysis; compressible flow through nozzles; shock wave analysis; boundary layer effects; experimental testing in subsonic and supersonic flows.

MAE 429 Theory of Turbomachines (3-0)3 As needed  
(MAE 321, MAE 331)  
Dimensional analysis; energy transfer between a fluid and a rotor; thermodynamics of gas flow; flow of fluids in turbomachines; centrifugal pumps and compressors; radial flow turbines; axial flow turbines; performance of compressors and pumps and comparison of types.

MAE 440 Industrial Hydraulics: Components and Circuits Design (3-0)3 As needed F  
(MAE 242, MAE 331 or Department Consent)  

MAE 454 Machine Design and Manufacturing (2-3)3 F  
(MAE 243; §MAE 342)  
Working stresses, theories of failure, fatigue, welded joints, design of machine elements such as shafting, screws, springs, belts, clutches, brakes, gears, bearings and miscellaneous machine elements.

MAE 455 Computer Aided Design and Drafting (2-3)3 F  
(MAE 201, MAE 342 & senior status or department consent)  
Computer-aided design fundamentals. Use of graphics capabilities of the microcomputer for Engineering Design and Simulation. Exposure to commercial CAD and Motion Simulation packages. 2-D and 3-D computer drafting. Solid Modeling applications. A preparatory course for Finite Element Method.

MAE 456 Finite Element Method (2-3)3 S  
(§MAE 423, MATH 251, MAE 454, MAE 455)  
Finite element formulation of boundary value problems in engineering. Design and application of one– and two— dimensional elements. The direct formulation approach will be
used to formulate the problems. Modern FEM and solid modeling software will be utilized for the solution of representative problems.

**MAE 460 Automatic Controls (3-0)3 S**  
(EE 221, MATH 261)  
Analysis and design for controlling solid body, thermal, and electromechanical systems. Control system design to satisfy performance criteria including stability, response time, steady-state error, and disturbance rejection using both analytic solutions and numerical simulation; compensation design in the time and frequency domains.

**MAE 463 Advanced Machine Design (3-0)3**  
As needed in S  
(MAE 201, MAE 454)  

**MAE 464 Mechanical Engineering Projects (1 to 4)**  
As needed  
(Junior or senior status)  
An investigation of analytical or experimental nature; design, construction and testing of an experimental apparatus.

**MAE 480 Systems Design 1 (3-0)3 F**  
(MAE 454 one semester before graduation)  
Professional ethics, the role of engineer in society, professionalism and current issues in engineering. Systems design applied to a project; lectures cover morphology of design, the design processes, decision and optimization techniques, and computer aided design. Begin a design project to be completed in MAE 481.

**MAE 481 Systems Design 2 (3-0)3 S**  
(MAE 480)  
A semester-long design project in which students normally work in teams. Formal report required at the end of the semester.

**MAE 493 Special Topics in Mechanical Engineering 1 to 3 as needed.**

**Military Science (MILS)**

**MILS 101 Military Science 2**  
The organization and development of the U.S. Army and ROTC from its inception to the present. The structure and role of the U.S. defense establishment with emphasis on the broad range of America civil-military relations.

**MILS 102 Military Science 2**  
The development of American military institutions, policies, experience, and examined in the perspective of modern military thought. Traditions in peace and war are discussed. Past wars are examined in the prospective of modern military thought.

**MILS 103 Leadership Laboratory 1**  
(Open only to and required of students in the associated Military Science course)  
This laboratory course is designed to offer the student an opportunity for integration and application of training management and leadership skills. Team academic alignment. Course
includes confidence building exercises such as rappelling, group presentations, basic marksmanship, and drill and ceremonies.

**MILS 201 Military Science** 2
Introduction to basic leadership and management with emphasis on the fundamental concepts and skills required of today's citizen-soldier.

**MILS 202 Military Science** 2
Continued instruction in basic fundamentals of leadership and management, with emphasis on the military application of these fundamentals. Introduction to small unit tactics and organization.

**MILS 203 Leadership Laboratory** 3
(Open only to students in the associated Military Science courses 101, 102, 201, 202) This laboratory course is designed to offer the student an opportunity for integration and application of training management and leadership skills. Team members and leadership positions are tailored based on the students' academic alignment. Course includes confidence building exercises such as rappelling, group presentations, basic marksmanship, and drill and ceremonies.

**MILS 301 Military Science** 3
(Department consent)
Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead again in situations of increasing complexity. Uses small unit defensive tactics and opportunities to plan and conduct training for lower division students both to develop skills and as vehicles for practicing leading. The military science leadership lab (MILS 303) plus participation in the advanced physical fitness course are required in conjunction with this class. Participation in one weekend field training exercise is also required, and one or two more weekend exercises may be offered for optional participation.

**MILS 302 Military Science** 3
(Department consent)
Continues methodology of MILS 301. Analyze tasks; prepare written or oral guidance for team members to accomplish tasks. Delegate tasks and supervise. Plan for and adapt to the unexpected in organizations under stress. Examine and apply lessons from leadership case studies. Examine importance of ethical decision making in setting a positive climate that enhances team performance. The military science leadership lab, MILS 303, plus participation in the advanced physical fitness course are required in conjunction with this class. Participation in one weekend field training exercise is required; two other weekend exercises are optional.

**MILS 303 Leading Small Organizations** 1 2
(Open only to and required of students in the associated military science course) Different leadership roles are designed for students at different levels in the program. Involves leadership responsibilities for the planning, coordination, execution and evaluation of various training and activities with basic course students and for the ROTC program as a whole. Students develop, practice and refine leadership skills by serving and being evaluated in a variety of responsible positions.

**MILS 401 Military Science** 3
(MILS 301 & MILS 302 or department consent) Stresses the responsibilities of an officer and affords leadership experience as a cadet leader. Military staff procedures, military law, and military organizations, which prepare the student for future services, are studied.
MILS 402 Military Science  3
(MILS 401 or department consent)
Advanced leadership techniques, unit operations, and personnel management problems are discussed in seminars. The military role in United States foreign policy and world affairs is examined.

MILS 403 Leadership Challenges/Goal Setting  2
(Open only to and required of students in the associated military science course)
Different leadership roles are designed for students at different levels in the program. Involves leadership responsibilities for the planning, coordination, execution and evaluation of various training and activities with basic course students and for the ROTC program as a whole. Students develop, practice and refine leadership skills by serving and being evaluated in a variety of responsible positions.

Multidisciplinary Studies (MDS)

MDS-495 Independent Study  1-6 Hrs.
Faculty supervised study of topics not available through regular course offerings. MDS 495 Guided Electives are projected for the IDSC Senior Project.

Music (MUSC)

MUSC 111 Introduction to Music (3-0)3
Introductory course designed to develop an appreciation and understanding of the significance of music as a fine art, and to help the students develop intelligent listening habits.

MUSC 115 Introduction to History of Jazz (3-0)3
An introduction to jazz, its characteristics, important performers, and their music, including an historical survey with attention to the changing style of the music.

Nursing (NSG)

NSG 100 Introduction to Nursing (2-0)2
Introduction to the role of the nurse in modern health care: critical thinking, nursing interventions, professionalism, caring, and communication in nursing practice with emphasis on safety, quality health, culture, ethics, leadership, policy.

NSG 211 Health Assessment and Communication (4-2)6
(NSG 100, Sophomore nursing standing)
Examination of concepts, principles, processes, and models that guide nursing practice related to physical, psychosocial, spiritual, developmental, intellectual assessment and communication across the lifespan in the classroom, simulation, and various clinical settings.

NSG 212 Foundations of Nursing Practice (4-2)6
(NSG 211, Sophomore nursing standing)
Theories, concepts, principles, and processes that lay the foundation for critical thinking, nursing interventions, communication, professional role and caring in the practice of nursing. Application of the nursing process in classroom, simulation and clinical experiences.
**NSG 276 Introduction to Evidence Based Practice/Research** (3-0)3  
(STAT 211, NSG 211)  
Theory, concepts, and methods of the research process intended to provide a basic understanding that is necessary for the translation of current evidence into nursing practice.

**NSG 310 Women’s Health Across the Lifespan** (2.5-1.5)4  
(NSG 212, Junior nursing standing) (Co-req: NSG 311, NSG 376)  
Human response to normal and abnormal changes in health status across the female lifespan and adaptations of the childbearing family. Provision of holistic nursing care to women and childbearing families in the clinical area.

**NSG 311 Alterations in Adult Health 1** (3-3)6  
(NSG 212, Junior nursing standing) (Co-req: NSG 310, NSG 376)  
Pathophysiology and holistic nursing care of adults experiencing acute and chronic problems. Use of the nursing process to plan and provide interventions appropriate to health care needs in the clinical setting.

**NSG 312 Alterations in Adult Health 2** (3-3)6  
(NSG 311, NSG 376) (Junior nursing standing) (Co-req: NSG 320, NSG 360)  
Builds on Alterations in Adult Health I, using critical thinking and nursing process in a team-based learning format, paired with clinical application, to explore holistic nursing care of adults with acute and chronic health problems.

**NSG 320 Child and Adolescent Health** (2.5-1.5)4  
(NSG 311, NSG 376, Junior nursing standing) (Co-req: NSG 312, NSG 360)  
Human response to alterations in health, developmental needs, and family-centered care specific to pediatric population with emphasis on the professional nursing role, evidence-based reasoning, therapeutic communications, and caring.

**NSG 360 Ethics and Health Care Policy** (3-0)3  
(ENGL 102, Junior nursing standing) (Co-req: NSG 312, NSG 320)  
Ethical decision-making in health care situations across the lifespan, including palliative and end of life care. Health care policy, legal, and regulatory issues are discussed. Emphasizes professional writing skills.

**NSG 376 Clinical Nursing Pharmacology** (3-0)3  
(NSG 212, Junior nursing standing) (Co-req: NSG 311, NSG 310)  
Principle of pharmacology emphasizing scholarly inquiry and evidence-based reasoning to insure accurate knowledge of and administration of medications to individuals and families across the lifespan. Pharmacological management is analyzed in conjunction with pathophysiology.

**NSG 411 Nursing in Complex Community Systems** (3,4)7  
(NSG 276, NSG 310, NSG 312, NSG 320, NSG 360) (Senior nursing standing)  
Comprehensive theoretical introduction to community health nursing paired with clinical experiences found on promoting health and preventing disease in multiple populations. Culminates in a Capstone project that addresses an identified community health need.

**NSG 412 Leadership in Complex Systems** (2,5)7  
(Senior nursing standing)  
Development of leadership and management skills necessary for professional nursing practice and interventions supporting multiple patients in acute-care complex systems. Classroom experiences paired with 200 hours of precepted leadership experience.
**NSG 450 Alterations in Mental Health** (2.5, 1.5) 4  
(NSG 310, NSG 312, NSG 320, NSG 360) (Senior nursing standing)  
Theory and practice of professional nursing in response to complex alterations in psychosocial function and their impact on individuals, families, and communities. Classroom and clinical experiences.

**NSG 460 Care of the Critically Ill Patient** (3,1) 4  
(NSG 312, NSG 411, NSG 450) (Senior nursing standing)  
Focuses on the professional nursing role in supporting individuals and families experiencing complex physiological alterations in health. Paired with clinical experiences supporting individuals and families in critical care settings.

**NSG 480 Core Concepts in Gerontological Nursing** (2)  
(NSG 211, NSG 212) (Junior or senior level standing in nursing)  
Examination of patient specific concepts, nursing assessments, interventions, and models of care that guide nursing practice related to the holistic care of the older adult.

**NSG 485 Children with Complex Health Needs** (2)  
(NSG 320)  
The nursing care of children with complex acute and chronic health problems with a focus on decision making using a case study problem based learning approach.

**NSG 486 NCLEX Review** (1-0) 1  
(Senior nursing standing)  
This course is taken during last semester of BSN program. Focuses on achievement of professional success by preparing for RN licensure. Preparation for NCLEX will be the focus of this course by enhancing NCLEX testing skills.

**Physical Education (PE)**

**PE 100 Lifetime Activities** (0-2) 1  
Health and physical education concepts include carry over skills and techniques in a broad and varied list of elective activities. May be repeated to maximum of six hours.

**PE 104 Intermediate Basketball** (0-2) 1 F  
Introduction to intermediate knowledge and skills in basketball.

**PE 110 Military Physical Conditioning** 1  
Students participate in and learn to lead a physical fitness program. Emphasis is on the development of an individual fitness program and the role of exercise and fitness in one's life. Leadership positions are tailored based on the student's academic alignment.

**PE 130 Flag Football** (0-2) 1 S  
Introduction to beginning knowledge and skills in flag football.

**PE 157 Slow Pitch Softball** (0-2) 1 F  
Introduction to beginning knowledge and skills in slow pitch softball.

**PE 159 Soccer** (0-2) 1 S  
Introduction to beginning knowledge and skills in soccer.
**PE 161 Tennis (0-2)1 S**  
Introduction to basic knowledge and skills for people who are familiar with tennis.

**PE 164 Weight Training (0-2)1**  
Introduction to beginning knowledge and skills in weight training.

**PE 165 Conditioning (0-2)1**  
Introduction to beginning knowledge and skills in conditioning.

**PE 170 Volleyball (0-2)1 S**  
Introduction to beginning knowledge and skills in volleyball.

**PE 173 Beginning Swimming (0-2)1**  
Introduction to beginning knowledge and skills in swimming.

**PE 174 Intermediate Swimming (0-2)1**  
Introduction to intermediate knowledge and skills in swimming.

**PE 175 Lifeguard Training (0-4)2**  
Red Cross certification for lifeguards.

**PE 176 Advanced Swimming (0-2)1**  
Introduction to advanced knowledge and skills in swimming.

**PE 179 Orientation to Scuba (0-2)1**  
Introduction to beginning knowledge and skills in scuba diving.

**PE 187 Golf (0-2)1 F**  
The course is designed to introduce students to the rules, skills, and strategies involved in golf.

**PE-220 Striking and Field Games 1**  
This teaching games for understanding (TGfU) course is designed to introduce the students to the rules, skills, and strategies involved in playing striking and fielding games.

**PE-221 Invasion Games 1**  
This teaching games for understanding (TGfU) course is designed to introduce the students to the rules, skills, and strategies involved in playing games where one invades their opponent's territory.

**PE-223 Net and Wall Games 1**  
This teaching games for understanding (TGfU) course is designed to introduce the students to the rules, skills, and strategies involved in playing net and wall games.

**Physical Education/Teaching (PET)**

**PET 124 Human Body: Structure and Function (2-0)2 F**  
Overview of the structure and function of the organ systems in the human body. Topics covered include the skeletal, muscular, nervous, digestive, respiratory, and cardiovascular systems.
PET 125 Principles of Human Movement (2 0)2 S
(PET 124)
This course is designed to introduce prospective physical educators to the principles of human movement. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

PET 175 Motor Development (3-0)3 S
To examine changes in human movement behavior across the lifespan and the factors that contribute to those changes.

PET 244. Motor Learning and Performance. (2-0)2
Introduction to principles related to teaching, learning, and performance of motor skills. Emphasizes the application of knowledge to teaching and learning strategies for motor-skill acquisition.

PET-324 Water Safety Instructorships (0-4)2
(Senior Lifesaving Certification)
Teaching methods in swimming and water safety. Meet American Red Cross certification standards. Course completion carries eligibility for teaching swimming, lifesaving, and water safety.

Physical Science (PHSC)

~PHSC 101 Introductory Physical Science 1 (3-3)4
(MATH 124)
Current theories and concepts of physical science; fundamental laws and concepts of physics, chemistry, astronomy, and geology.

~PHSC 102 Introductory Physical Science 2 (3-3)4
Continuation of PHSC-101.

PHSC 311 Astronomy (3-0)3 F
(MATH 123)
Current theories and concepts of astronomy; structure and composition of the solar system; formation, structure, and evolution of stars; structure, composition, and motion of the Milky Way and other galaxies; structure and evolution of the universe.

Physics (PHYS)

~PHYS 101 Introductory Physics (3-3) 4 F
(High school trigonometry and MATH 126. §MATH 128)
The fundamental philosophy and principles of physics are applied to studies of mechanics, sound, heat, and thermodynamics through demonstrations, problems and experiments. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

~PHYS 102 Introductory Physics (3-3)4 S
(PHYS 101 and MATH 128)
The fundamental philosophy and principles of physics are applied to studies of electricity, magnetism, optics, light, and atomic and nuclear physics through demonstrations, problems and experiments Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.
~PHYS 111 General Physics (3-3)4 F
(Grade of "C" or better in MATH 155)
Survey of classical mechanics, thermodynamics, and waves.

~PHYS 112 General Physics (3-3)4 S
(PHYS 111)
Survey of electricity, magnetism, and optics.

PHYS 293 Special Topics 1-6 hr.
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

PHYS 314 Introductory Modern Physics (3-0)4
(PHYS 112 and MATH 156)
Topics of modern physics of interest to science majors and engineers; atomic and molecular structure and spectra, solid state and nuclear physics, relativity, and elementary particles.

PHYS 493 Special Topics 1-6 hr.
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

Political Science (POLS)

~POLS 102 Introduction to American Government (3-0)3 F
General survey of American national government and politics.

POLS 103 Global Political Issues (3-0)3
Analysis of issues in post-cold war international politics, ranging from traditional major power diplomacy and intervention to the newer problems of economic interdependence and development, human rights, population pressures on limited resources, and the environment.

POLS 220 State and Local Government (3-0)3 S
Origins, background, comparisons, and contrasts of state governments; state and federal relations; state executive, legislative, and judicial branches; state services; county and municipal governments.

POLS 260 Introduction to International Relations (3-0)3 S
Theories and concepts in international politics and their application to contemporary world politics.

POLS 293 Special Topics (1-6-0)1-6
Investigation of topics not covered in regularly scheduled courses.

POLS 311 Political Parties and Elections (3-0)3
Parties and elections in America; emphasis on nomination and general election processes, campaigns, the mass media, campaign finance, voting, the electoral college, and parties in government.

POLS 313 American Constitutional Law (3-0)3 F
The role of the Constitution in the American political system. Topics include the political concept of constitutionalism; the role of the Supreme Court in the political process; division
of powers among the three branches of government; and the constitutional relation between the national government and the states.

**POLS 319 Comparative Government** (3-0)3 F
Comparison of governmental systems in Europe, Asia, Latin America, and Africa. Select countries in each region will be studied with regard to their political institutions and socioeconomic systems.

**POLS 400 Terrorism and National Security** (3-0)3 S
(POLS 102)
Basic overview of terrorism tactics and national security initiatives.

**POLS 480 Seminar in Non-Profit Administration** (3-0)3
(Senior standing or department consent)
Special topics in the area of non-profit administration and current problems.

**POLS 495 Independent Study** 1-6
(Department consent)
Faculty supervised study of topics not available through regular course offerings.

**Psychology (PSYC)**

~**PSYC 101 Introduction to Psychology** (3-0)3
A survey of general psychology.

**PSYC 201 Psychology as a Profession** (1-0)1 S
(PSYC 101)
Orientation to opportunities for experience, employment, and graduate and professional training in psychology.

**PSYC 202 Research Methods in Psychology** (3-0)3 F-Even
(PSYC 101 & STAT 211 or ECON 225)
Research methods in experimental, developmental, clinical, and community-social psychology in the laboratory and the natural environment.

**PSYC 241 Introduction to Human Development** (3-0)3 S
(PSYC 101)
Survey of human psychological development across the life span with emphasis on change in biological, cognitive, and social-emotional processes. Special attention given to theoretical, conceptual, methodological, and practical issues.

**PSYC 281 Introduction to Abnormal Psychology** (3-0)3
(PSYC 101)
Introduction to major categories of behavior disorders; etiology, prevention and treatment.

**PSYC 301 Biological Foundations of Behavior** (3-0)3
(PSYC 101 & PSYC 202)
Introduction to animal behavior. Survey of fundamental concepts (evolution, genetics, adaptation, and learning) and research methods in understanding animal behavior including primate species. Includes laboratory exercises and demonstrations.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Departmental Requirements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 302</td>
<td>Behavior Principles</td>
<td>3-1</td>
<td>PSYC 101 &amp; PSYC 202</td>
<td>Principles of behavior and learning and the significance of these principles for psychological theory and application; laboratory exercises and demonstrations.</td>
</tr>
<tr>
<td>PSYC 331</td>
<td>History and Systems of Psychology</td>
<td>3</td>
<td>PSYC 202 or PSYC 241 or PSYC 293 and junior or senior standing</td>
<td>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.</td>
</tr>
<tr>
<td>PSYC 343</td>
<td>Child and Adolescent Development</td>
<td>3</td>
<td>PSYC 241 and junior or senior standing</td>
<td>Theory and research on major psychological processes in childhood and adolescence; maturation, personality, socialization, sensory, and cognitive development.</td>
</tr>
<tr>
<td>PSYC 351</td>
<td>Topics in Social Psychology</td>
<td>3</td>
<td></td>
<td>Social factors that determine human behavior, survey of research in selected areas of social psychology and their implications for social phenomena.</td>
</tr>
<tr>
<td>PSYC 362</td>
<td>Psychological Assessment</td>
<td>3</td>
<td>PSYC 202 or PSYC 241 or PSYC 293 and junior or senior standing</td>
<td>Psychometric theory and development of psychological assessment instruments. Includes behavioral, personality, intellectual, neuropsychological, forensic, achievement, and aptitude assessment.</td>
</tr>
<tr>
<td>PSYC 363</td>
<td>Personality Theory</td>
<td>3</td>
<td>PSYC 202 or PSYC 241 or PSYC 293 and junior or senior standing</td>
<td>Theoretical and empirical readings in a survey of major perspectives in personality theory, including dynamic, cognitive, humanistic, and behavioral.</td>
</tr>
<tr>
<td>PSYC 382</td>
<td>Exceptional Children</td>
<td>3</td>
<td>PSYC 241 and junior or senior standing</td>
<td>Exceptional mental retardation or advancement; organic disabilities having behavioral consequences, such as cerebral palsy or deafness; and behavior disorders.</td>
</tr>
<tr>
<td>PSYC 401</td>
<td>Psychology Capstone Experience</td>
<td>1</td>
<td>PSYC 101, PSYC 201, STAT 211 &amp; senior standing</td>
<td>Experience in coursework, research, or service that integrates knowledge gained as a major in psychology. To be taken concurrently with capstone experience, details of which are to be determined in consultation with advisor.</td>
</tr>
<tr>
<td>PSYC 424</td>
<td>Learning and Behavior Theory</td>
<td>3</td>
<td>PSYC 302 and junior or senior standing</td>
<td>Advanced course in empirical and theoretical issues in the psychology of learning.</td>
</tr>
<tr>
<td>PSYC 474</td>
<td>Behavior Modification</td>
<td>3</td>
<td>PSYC 302 and junior or senior standing</td>
<td>Basic principles of behavior and their application to changing significant human behavior. Includes clinical, educational, parenting, industrial/organizational, community, and other applications.</td>
</tr>
<tr>
<td>PSYC 491</td>
<td>Professional Field Experience</td>
<td>1-18</td>
<td>Department consent; may be repeated up to a maximum of 18 hours</td>
<td></td>
</tr>
</tbody>
</table>
Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

**PSYC 493 Special Topics** (1-6-0)1-6  
Investigation of topics not covered in regularly scheduled courses.

**PSYC 495 Independent Study** 1-6  
(Department consent)  
Faculty supervised study of topics not available through regularly scheduled courses.

**Sociology and Anthropology (SOCA)**

~**SOCA 101 Introduction to Sociology** (3-0)3  
Basic course intended to develop a perspective about the nature of social processes and the structure of society.

~**SOCA 105 Introduction to Anthropology** (3-0)3 F  
Essentials of human evolution and prehistory with a concentration on the varieties of languages and cultures found among peoples of the world.

**SOCA 207 Social Problems-Contemporary America** (3-0)3 F-Odd  
Causes of social disorganization in modern society and social life. Emphasis on research findings derived from studies of contemporary American society.

**SOCA 221 Families and Society** (3-0)3 S  
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, and sexual orientation.

**SOCA 232 Criminology** (3-0)3 S  
Exploration of various theories of criminal behavior; emphasis on a critical study of the criminal justice system and efforts to reform the penal system.

**SOCA 235 Race Relations** (3-0)3 S  
Causes and consequences of prejudice and discriminatory practices involving minority group members. Emphasis is on blacks, but social and economic conditions of Indians and other racial and religious minorities are also discussed.

**SOCA 302 Deviant Behavior** (3-0)3 F-Odd  
(6 Hrs. SOCA classes or department consent)  
Examination of the processes by which "deviance" is defined in society, and the methods of social control attempted. Provides a critical understanding of society from the perspective of those defined as "outsiders" - criminals, addicts, etc.
SOCA 305 Social Stratification and Power in American Society (3-0)3  F-Even (SOCA 101)
The course focuses on patterns of wealth, prestige, and power in American society. The contemporary configuration of class will be analyzed in the light of historical patterns, as well as future developments. The impact of class status on the individual and psychological patterns of class behavior will be studied. Philosphic arguments regarding the ethics of inequality will be considered.

SOCA 311 Social Research Methods (3-0)3  F (Junior status)
Logic of social research, elements of research design, and problems of measurement, with emphasis on survey research methodology and data analysis.

SOCA 312 Death and Dying (3-0)3
This course explains the issues and problems associated with death in American society. Topics such as changing attitudes, grief, funeral practices, life after death, the dying patient, and widowhood are presented from a variety of perspectives.

SOCA 325 Illness and Health Care (3-0)3  F
An overview of behavioral factors relating to occurrence of and response to illness, with particular emphasis upon American medicine. Designed especially for students interested in health-related careers.

SOCA 333 Sociology of Work and Work Places (3-0)3  S (SOCA 101)
Explores the significance of work and work relations in contemporary society. Emphasis is given to the analysis of employment settings including industrial organizations.

SOCA 360 Women and Men in Society (3-0)3  F (SOCA 101)

SOCA 430 World Religions (3-0)3  S Even
Study of the major religious traditions of the world. Through specialized lectures, speakers, assigned readings, field trips, and occasional videos students will gain a broad basis knowledge of the major religions.

SOCA 493 Special Topics (1-6-0)1-6
Investigation of topics not covered in regularly scheduled courses.

SOCA 495 Independent Study 1-6
Faculty supervised study of topics not available through regular course offerings.

SOCA 497 Research 1-6
(Department consent)
Independent research projects.
Spanish (SPAN)

SPAN 101 Elementary Spanish 1 (3-0)3 F/S
(Score of S1 on placement test or no prior study of the language) (Course presumes students have no prior knowledge of the language.)
Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading and writing within an authentic cultural context.

SPAN 102 Elementary Spanish 2 (3-0)3 S
(Span 101 or score of S2 on placement exam)
Continuation of SPAN 101. Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading, and writing within an authentic cultural context.

SPAN 203 Intermediate Spanish 1 (3-0)3 F
(Span 102 or score of S3 on placement exam)
Continuation of SPAN 102

SPAN 204 Intermediate Spanish 2 (3-0)3 S
(Span 203 or score of S4 on placement exam)
Foundation for advanced study of Spanish. Emphasis on oral and written communication.

SPAN 495 Independent Study 1-6 Hours
Faculty supervised study of topics not available through regular course offerings.

Sport and Exercise Psychology (SEP)

SEP 271 Sport in American Society (3-0)3 F
Socio-cultural investigation of sport in American society.

SEP 272 Psychological Perspectives of Sport (3-0)3 S
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.

Sport Management (SM)

SM 167 Introduction to Sport Studies (3-0)3 F
Overview of the sport management profession including career opportunities, critical current issues/trends, professional standards and the professional organizations.

SM 275 The Olympic Games (3-0)3 S-Odd
An examination of the historical development of the Olympic Games from the Greek classic period (500 B.C.) to the games of the XXVI Olympiad of Atlanta in 1996.

SM 340 Sport Governance (3-0)3 F
This course examines how sport organizations interact and coordinate with numerous policy actors to facilitate and coordinate the mechanisms of governance.
**SM 345 Technology in Sport Management** (2-0) 2 S  
This course provides an understanding of the technological concepts and principles relevant to sport management and provides student with practical experiences in the use of emerging technologies in the field.

**SM 350 Leadership in Sport Management** (2-0)2 S  
The purpose of this course is to identify the fundamental leadership behaviors in sport management. This course provides sport management students the opportunity to explore current leadership theories and practices in sport.

**SM 355 Orientation in Sport Management** (1-0)1 S  
In this course students will identify and develop the skill sets necessary for successful completion of an internship in sport management.

**SM 370 Sport Finance and Economics** (3-0)3 F  
The purpose of this course is to provide financial and economic overview of professional, collegiate, and recreational sports. Students will learn financial structures of sport organizations and various economic principles applied to the sport industry.

**SM 375 Sport in the Global Market** (3-0)3 F  
An examination of the role of sports within the broader process of globalization. Its impact on culture, politics, economics and how these influences shape today's sport.

**SM 380 History and Philosophy of Sport** (3-0)3 S  
This course is designed to acquaint students with philosophical issues related to sport and sport management and with individuals and events that helped shape the history of sport.

**SM 385 Sport Economics** (3-0)3 S  
Provides an understanding of the economic concepts and principles relevant to the sport industry. Provides the opportunity to apply the concepts and principles in a practical manner within a variety of different sport settings.

**SM 425 Facility Planning** (3-0)3 F  
(Department consent)  
An in-depth study of sport facilities, including planning, design, liability and facility management concepts and evaluation.

**SM 426 Liability in Sport** (3-0)3 F  
An overview of the legal system as it applies to sport, including contracts, tort law, drug testing, rights of athletes, product liability, legal duties of coaches, facilities supervisors, and athletic directors.

**SM 485 Sport Management** (3-0)3 F  
(Senior standing)  
The study of management principles as they relate to sport organizations. The analysis includes specific references to planning, organizing, leading, and evaluating functions of management in sport.

**SM 486 Sport Marketing** (3-0)3 S  
(Senior standing)  
The study of marketing principles as they relate to sport organizations. Specific attention is focused on the marketing planning process, marketing information systems, and internal marketing.
**SM 487 Issues in Sport Studies** (3-0)3 S
(SEP 271, ENGL 101, ENGL 102 & junior standing)
An in-depth analysis of critical issues impacting sport and the sport industry.

**SM 491 Internship Project** 3 S
(SM majors only and department consent)
(May be repeated up to a maximum of 18 hours.)
Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

**SM 493 A-Z Special Topics** (1-6-0)1-6
(Department consent)
Investigation of topics not covered in regularly scheduled courses.

**Statistics (STAT)**

**STAT 211 Elementary Statistical Inference** (3-0)3
(Grade of “C” or better in MATH 123 or MATH 126A or MATH 126B)
Basic concepts of descriptive and inferential statistics: descriptive measures, random variables, sampling distributions, estimation, tests of hypotheses, chi-square tests, regression, and correlation.

**Theatre (THET)**

**THET-300 Practicum** 1-3 Hrs. F/S
Participation in scheduled theatre productions. May be repeated up to a maximum of 6 Hr

**Women’s Studies (WMST)**

**WGST 225 Women of Appalachia** (3-0) 3 S Odd
Use variety of sources to explore how race, class, ethnicity, sex and gender impact lives of diverse Appalachian women, including portrayal of women, stereotypes, impact of stereotypes, and how women construct their own identities.

**West Virginia University (WVUE)**

**WVUE-191 First Year Seminar** (1-0)1 F
Support the first-year student to make a successful transition from high school to college; develop a better understanding of the learning process including critical thinking; and acquire basic academic and personal “survival skills.”
7. Faculty Listing

College of Business, Humanities, and Social Sciences

Almendarez, Anthony, M.A.
Marshall University

Amin, Mohammad Nurul, ABD, M.B.A., MAct, CPA, CMA, CFE, FCMA
University of Illinois, Champaign
Associate Professor and Chair of Accounting and Management ............... 1994

Barko, Cortney C., Ph.D.
Northern Illinois University
Assistant Professor, Department of History, English, and Creative Arts .......... 2011

Bernier, David, M.A.
West Virginia University
Assistant Director of Tech Adventures .................................................. 2016

Bragg, Rachel, Ph.D.
Old Dominion University
Assistant Professor, Department of History, English and Creative Arts ........ 2013

Brown, Stephen W., Ph.D.
West Virginia University
Dean of the College of Business, Humanities and Social Sciences and
Professor of History ............................................................................. 1973

Bruce, Amy, M.S.N.
Marshall University
Senior Lecturer, Department of Nursing ............................................... 2006

Clough, William E., Ph.D.
Indiana University of Pennsylvania
Assistant Professor, Department of History, English and Creative Arts ........ 2016

Coroian, George E., Jr. Ph.D.
Indiana University of Pennsylvania
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Douglas, Barbara D., M.S.N.
Wright State University
Senior Lecturer, Department of Nursing .............................................. 1996

Elmore, Sandra J., Ed.D.
West Virginia University
Professor and Chair, Department of Sport Studies .................................. 1989

Fink, Lambert, Peggy, A., Ph.D.
West Virginia University
Assistant Professor, Department of Nursing .......................................... 1998

Fowler, Lauren, M.A.
East Tennessee State University
Visiting Instructor, Department of History, English and Creative Arts ....... 2016

Gill, Fahad, Ph.D.,
Middle Tennessee State University
Assistant Professor, Department of Social Sciences and Public Administration .. 2016

Hall, Cynthia A, Ph.D.
University of Alabama, Birmingham
Assistant Professor, Department of Psychology ...................................... 2011
Harris, Mindy L., M.S.N.  
Marshall University  
Senior Lecturer, Department of Nursing.................................1998

Janeksela, Galan, Ph.D.  
Iowa State University  
Professor, Department of Social Sciences and Public Administration...........2003

Jefferys, Roger L., II, M.S.  
West Virginia University  
Visiting Instructor, Department of Social Sciences and Public Administration....2016

Jones, Mark, M.S.  
Indiana State University  
Teaching Assistant Professor, Department of Sport Studies ....................2006

Kent, Andrea, Ph.D.  
University of Illinois, Urbana-Champaign  
Assistant Professor, Department of Social Sciences and Public Administration ..2013

Kihn, Patricia L., Ph.D.  
Wayne State University  
Professor and Chair, Department of History, English and Creative Arts........1991

Kim, Kyungmoon, D.B.A.  
Louisiana Tech University  
Assistant Professor, Department of Accounting and Management ..............2015

Klocek, Evelyn, M.S.N., Ed.D.  
Marshall University  
Assistant Professor and Chair, Department of Nursing ........................1995

Lieving, Gregory, Ph.D.  
West Virginia University  
Associate Professor and Chair, Department of Psychology ....................2006

Liu, Yan, D.B.A.  
Louisiana Tech University  
Assistant Professor, Department of Accounting and Management ..............2016

Lovett, Paul, M.S.  
West Virginia University  
Teaching Assistant Professor, Department of Career-Technical Education ......2012

McCarthy, Amanda, M.B.A.  
West Virginia University  
Assistant Professor, Department of Social Sciences and Public Administration..2016

McGraw, Thomas, M.H.A.  
Xavier University  
Associate Professor, Department of Social Sciences and Public Administration..2008

Messer, James, MSN  
University of Phoenix  
Senior Lecturer, Department of Nursing........................................2007

Mitrik, Robert M., Jr., D.A.  
Idaho State University  
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Morton, Kelly, B.S.N.  
West Virginia University Institute of Technology  
Lecturer, Department of Nursing................................................2016

Parcell, Hillary, M.S.N.  
Marshall University,  
Lecturer, Department of Nursing................................................2014
Pennington, Anita, M.A.
West Virginia University
Visiting Instructor of Spanish, Dept. of History, English, & Creative Arts.........2016

Rakes, Paul H., Ph.D.
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Rezek, Janis, Ph.D.
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Robbins, Frank, B.A.
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Sarin, Madhuri, M.A., M.B.A., CMA, CFM, CFE, EA
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Sartore, Melissa Ann, Ph.D.
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Smith, Reginald, M.S.
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Spencer, Robin, M.S.N.
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Spiers, Laura K., M.S.
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Stoecklin, Melinda, M.S.N.
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Storck, Steven, Ph.D.
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Wheeler, Andrew, M.F.S.
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Williams, Robert F., M.S.
U.S. Sports Academy
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Gray, Kimberlyn, Ph.D.
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Hird, John Thomas, Jr., Ph.D.
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Hurst, Scott, Ph.D.
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Leary, Brian, Ph.D.
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Leftwich, Steven D., Ph.D., P.E., P.S.
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Lu, Mingyu, Ph.D.
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Minnick, Michael V., Ph.D.
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Mohammed, Amr, Ph.D.
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Monzon, Eric V., Ph.D.
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Moss, Tyler, Ph.D.
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Assistant Professor, Department of Mathematics.............................2014

Munasinghe, Ranjith, Ph.D.
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Naz, Afrin, Ph.D.
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Neary, John, Ph.D.
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Assistant Professor, Department of Biology ..................................2012
Osei-Prempeh, Gifty, Ph.D.
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Associate Professor, Department of Chemical Engineering ......................... 2010

Ouendeno, Michel, Ph.D.
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Panta, Yogendra, Ph.D.
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Puttaiah, Govindappa, Ph.D., P.E.
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Smith, Don J., M.S., M.A.
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Song, Houbing, Ph.D.
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Squire, Richard, Ph.D.
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Steranka, Paul O., Jr., D.Eng., P.E.
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Associate Dean, Leonard C. Nelson College of Engineering and Sciences ........ 1992

Taylor, John Gerrard, Ph.D.
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Thomas, Garth D., Jr., M.S., P.E.
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Torbica, Zeljko, Ph.D.
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Dean, Leonard C. Nelson College of Engineering and Sciences ..................... 2012

Wellstead, Carl, Ph.D.
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Associate Professor, Department of Biology .................................................. 1990

Williamson, Matthew, Ph.D.
West Virginia University
Assistant Professor, Dept. of Computer Science and Information Systems ...... 2013

Yang, Bing, Ph.D.
Colorado State University
Professor and Chair, Department of Mathematics ......................................... 1991

Yang, Chengmin, Ph.D.,
Colorado State University
Professor, Department of Mathematics .......................................................... 1992

Yang, Horng-Jyh, Ph.D., P.E.
University of Nevada, Reno
Assistant Professor, Department of Civil Engineering ................................. 2011
Zabihian, Farshid, Ph.D.
Ryerson University
Assistant Professor, Department of Mechanical Engineering 2011

Emeriti Faculty

Alexander, Ronald R., Ph.D.
Professor Emeritus of History 1966-2003

Bailey, Kenneth, Ph.D.
Professor Emeritus of Geography and
Dean of College of Business, Humanities & Sciences 1972-2000

Bell, Thomas, M.A.
Professor Emeritus of Economics/Social Sciences 1975-2002

Bitzer, Jr., Wesley, E.M.
Assistant Professor Emeritus of Mining Engineering Technology 1982-1991

Blevins, James R., M.S.
Professor Emeritus of Drafting and Design 1976-2002

Bloome, Carlyle W., M.C.E., R.L.S.
Professor Emeritus of Engineering Technology 1976-1996

Bradford, Richard, Ph.D.
Professor Emeritus of History 1968-2002

Brannon, Donald G., Ph.D.
Professor Emeritus of Chemistry 1967-1996

Cardea, Eva Kay, M.A.
Assistant Professor Emeritus of English 1966-1996

Carrier, John P., Ph.D.
President Emeritus 1992-1998

Clark, William,
Associate Professor Emeritus of Computer Science 1980-2011

Clonch, Daniel M., M.S.E., P.E.
Professor Emeritus of Electrical & Electronic Engineering Technology 1961-1992

Cobb, Charles H., M.S.
Professor Emeritus of Physical Education 1957-1992

Cook, James, M.S.
Associate Professor Emeritus 1980-2002

Crist, Barbara, Ed.D.
Associate Professor Emeritus of Computer Science 1975-2011

Crum, Edward H., Ph.D.
Professor Emeritus of Chemical Engineering 1975-1996

David, John P., Ph.D.
Professor Emeritus of Economics 1971-2012

Dodson, Patricia, M.S.
Professor Emeritus of Office Administration 1983-1996

Doner, David, Ph.D.
Professor Emeritus of Chemical Engineering 1984-2011

Durrett, Gary, M.S.
Professor Emeritus of Computer Science 1966-2002

Ellis, Thearn H., M.S.
Professor Emeritus of Industrial Technology 1981-2002
Farooq, M.U., Ph.D.
Professor Emeritus of Electrical Engineering ............................................ 1990-2007

Frye, Billy W., M.A.
Professor Emeritus of Industrial Technology ........................................ 1960-1996

Gaertner, Ronald A., Ph.D.
Professor Emeritus of Biology ............................................................... 1970-2000

Gillespie, Robert, Ph.D.
Professor Emeritus of Electrical Engineering ........................................ 1965-2004

Gourley, Jr., Frank A., Ph.D.
Professor Emeritus of Engineering Technology & Industrial Technology ... 1990-2006

Heal, James, Ph.D.
Professor Emeritus of Safety Education .................................................. 1965-1989

Honey, Keith R., Ph.D.
Professor Emeritus of Physics ................................................................. 1976-2006

Illman, Barry, Ph.D.
Professor Emeritus of Physics ................................................................. 1982-2003

Jennings, Jean K., M.A.
Professor Emeritus of English ................................................................. 1967-1987

Kiley, G. Bertram, Ph.D.
Professor Emeritus of English ................................................................. 1947-1976

Kuhn, Howard, Ph.D.
Professor Emeritus of English ................................................................. 1972-2001

Kurland, Dorothy, Ph.D.
Professor Emeritus of Chemistry ............................................................. 1980-2001

Lauer, Norma, Ph.D.
Professor Emeritus of Mathematics ......................................................... 1976-2000

Lunsford, Harold D., B.E.S., P.E.
Assistant Professor Emeritus of Mechanical Engineering Technology....... 1984-1997

Mansour, Scott W., Ph.D.
Professor Emeritus of Mathematics ......................................................... 1973-2003

Marshburn, Robert A., M.S.
Professor Emeritus of Management & Computer Information Systems.... 1973-2005

Martyn, Charles F., Mus.D.
Professor Emeritus of Music ................................................................. 1967-1994

Meyer, W. Frederick, D.M.A.
Professor Emeritus of Music ................................................................. 1972-2006

Moore, Edward A., M.B.A.
Associate Professor Emeritus of Accounting ........................................... 1946-1985

Murthy, Krishna, Ph.D.
Professor Emeritus of Civil Engineering .................................................. 1977-2011

Myers, Robert L., Ph.D.
Professor Emeritus of Chemistry ............................................................. 1966-1996

Nelson, Leonard C., Ph.D.
President and Professor Emeritus of Mechanical Engineering ............... 1956-1986

Oxendale, James, Ph.D.
Professor Emeritus of Political Science .................................................. 1976-2005

Oxendale, Lucia, M.S.
Associate Professor Emeritus of Department of Management and Computer Information Systems ......................... 1985-2006

Perry, Jacqueline, Ph.D.
Professor Emeritus of Accounting .......................................................... 1998-2013

Piercy, James W., M.S.E., P.E.
Associate Professor Emeritus ................................................................. 1986-2002
Ram, Surender, Ph.D.
  Professor Emeritus of Electrical Engineering posthumous ................. 1981-2013
Rice, Donald E., M.S.
  Professor Emeritus of Chemistry ......................................................... 1961-1996
Riggio, Donald J., M.A.
  Professor Emeritus of Music ................................................................. 1960-1991
Russell, Angela M., M.B.A.
  Associate Professor Emeritus of Marketing ........................................... 1975-2014
Russell, G. Mary Lou, M.A.
  Assistant Professor Emeritus of Mathematics ....................................... 1980-1989
St. Clair, Ruth, M.A.
  Assistant Professor Emeritus of Mathematics ....................................... 1954-1979
Sanger, Robert L., M.B.A.
  Professor Emeritus of Management ....................................................... 1958-1994
Schoonover, Walter B., M.A.
  Professor Emeritus of Accounting ......................................................... 1955-1989
Shaaban, Mostafa, Ph.D.
  Professor of Economics .............................................................................. 1968-2007
Short, Gordon, Ed.D.
  Professor Emeritus of Psychology & Dean of College of Arts & Sciences .. 1973-1997
Tabit, Beverly, M.A.
  Assistant Professor Emeritus of English .................................................. 1976-2006
Thornton, Stafford E., M.C.E., P.E., P.S.
  Professor Emeritus of Civil Engineering .................................................... 1964-2000
Tuholsky, Joseph, M.S.
  Professor Emeritus of Engineering Technology ......................................... 1973-2000
Urbanski, Joseph V., Ph.D.
  Professor Emeritus of Mathematics .......................................................... 1989-2012
Wicks-Nelson, Rita, Ph.D.
  Professor Emeritus of Psychology ............................................................ 1984-1998
Wilson, Alpha E., Ed.D.
  Professor Emeritus of Physics ................................................................... 1983-1995
Wilson, Roderick W., M.S.
  Professor Emeritus of Physics ................................................................... 1964-1998
Yu, Juin S., Ph.D.
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