2006-2007 Catalog







Community & Technical College and Institute of Technology Weaving University.

Catalog 2006-2007

West Virginia University Institute of Technology

and

Community & Technical College at WVU Tech

ACCREDITATION

West Virginia University Institute of Technology and the Community and Technical College at WVU Institute of Technology are accredited by The Higher Learning Commission and are members 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: 800-621-7440).

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

Engineering Programs: Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202 (Telephone: 410-347-7700).

Engineering Technology Programs: Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202 (Telephone: 410-347-7700)

Nursing BSN Program: Commission on Collegiate Nursing Education, 1 DuPont Circle, NW, Suite 530, Washington, DC 20036-1120 (Telephone: 202-887-6791).

Dental Hygiene: Commission on Dental Accreditation, American Dental Association, 211 East Chicago Avenue, Chicago Illinois 60611-2678 (Telephone: 800-621-8099, ext. 4653).

Respiratory Therapy: Committee on Accreditation for Respiratory Care, 1248 Harwood Road, Bedfored, Texas 76021-4244 (Telephone: 817-283-2835)

Office Technology Management - Medical Assistant Emphasis: The Commission on accreditation of Allied Health Education Programs (CAAHEP) (Pending) 35 East Wacker Drive, Suite 1970 Chicago, IL 60601 (Telephone: 312-553-9355)

COMPLIANCE STATEMENT

It is the policy of West Virginia University Institute of Technology and the Community and Technical College at WVU Institute of Technology to provide equal opportunities to all prospective and current members of the student body, faculty and staff on the basis of individual qualifications and merit without regard to race, color, religion, sex, marital status, disability, veteran status, sexual orientation, national origin or age. This policy is in compliance with the requirements of Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990 and all other applicable federal, state and local statutes, ordinances and regulations.

Information on the implementation of the policy may be obtained by contacting:

AA/EEO/ADA/Social Justice Officer West Virginia University Morgantown, West Virginia 26506 (304) 293-5496

STUDENT RIGHT-TO-KNOW AND CAMPUS SECURITY ACT

On November 8, 1990, the Student Right-to-Know and Campus Security Act was signed into federal law. This Act (Public Law 101-542) requires institutions to produce and make available annually the completion or graduation rate of first-time, full-time, certificate/degree seeking undergraduates. Graduation rates for all West Virginia public higher education institutions are published in the *West Virginia Higher Education Report Card* which is available at any of the public colleges and universities and at the main public libraries throughout the State. For information pertaining to graduation rates at the West Virginia University Institute of Technology and the Community and Technical College at WVU Tech contact the Office of the Registrar and Records at (304) 442-3151.

AMERICANS WITH DISABILITIES ACT

West Virginia University Institute of Technology and the Community and Technical College at WVU Tech strive to assist those students who are qualified for the protection garnered by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities ACT (ADA) of 1990. To be eligible for the protection under Section 504 and the ADA, a student has the obligation and responsibility to self-identify the disability and must provide appropriate documentation at the beginning of each semester that they are enrolled.

A person with a disability has a physical or mental impairment which substantially limits a major life activity, has a record or history of such an impairment, and/or is regarded as having such an impairment. A learning disability is not a form of mental retardation or an emotional disorder. A learning disability (LD) is:

- a permanent disorder which affects the manner in which an individual with normal or above-average intelligence takes in, retains, and expresses information;
- commonly recognized in learning challenged adults as deficits in one or more of the following areas: reading comprehension, spelling written expression, math computation, and problem-solving. Less frequent, but not less troublesome, are problems in organizational skills, time management, and social skills. Many learning challenged adults also may have language-based and/or perceptual problems; and
- frustrating for those individuals who often feel the need to prove that their invisible disabilities may be as handicapping as paraplegia.

Tech will provide reasonable accommodations to the student known to have a disability in order to afford him/her an equal opportunity to participate in the programs, activities, and services provided by the Institution. Students who desire these services and accommodations should contact the Tech ADA officer. The Office of Disability Services is located in 331 Vining Library.

Students seeking assistance under Section 504 and the ADA must provide the ADA Office with proper documentation at the beginning of each semester in which they are enrolled.

DISCLAIMER

The West Virginia University Institute of Technology and the Community and Technical College at WVU Tech catalog is used as a source of information for curriculum, course offerings, admission, graduation requirements, and other rules and regulations pertaining to the college. While every effort has been made to provide a correct catalog, the institution reserves the right to delete, change, or amend this information as necessary.

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ACADEMIC CALENDAR 2006-2007 FALL SEMESTER

August 2006	
18	Registration
21	Classes Begin
21	Late registration begins (late fee in effect)
25	Late registration ends
September	
4	Labor Day (No Classes)
October	
2	Last day for incomplete work from Spring 2006 to be submitted to faculty.
6	Midsemester
9	Midterm Grades due in Registrar's Office (noon)
27	Deadline for withdrawal with "W" grade
November	
3	Deadline for applying for graduation in December
20, 21, 22, 23, 24	Thanksgiving Vacation (No Classes)
December	
8	Last day of classes
11, 12, 13, 14, 15	Final Exams
18	Grades due in Registrar's Office (noon)

SPRING SEMESTER 2007-2008

January 2007

5	Registration
8	Classes begin
8	Late registration begins (Late fee in effect)
12	Late registration ends
15	Martin Luther King Jr. Day Observed (no classes)
February	
2	Deadline for applying for graduation in May
19	Last day for incomplete work from Fall 2006 to be submitted to faculty.
23	Midsemester
26	Mid-semester reports due in Registrar's Office (noon)
March	
9	Last day for withdrawal with "W" grade
26, 27, 28, 29, 30	Semester Break (no classes)
April	
6	Spring Recess
27	Last Day of Classes
30	Final Exams
May	
12, 3, 4	Final Exams
5	Commencement
7	Grades due in Registrar's Office (noon)

"Tech"-Yesterday and Today

were constructed to all of the second of the

In 1900 Mrs. H.C. Quesenberry became the first of many alumni to graduate from this institution, known at that time as the Montgomery Preparatory School.

Five years earlier, the West Virginia legislature passed legislation on February 16, 1895 establishing the Montgomery Preparatory School. Created as the preparatory branch for West Virginia University, the school was to provide academic instruction for college-bound students.

In an effort to develop a worthwhile role for the school and support vocational education, legislation was passed in 1917 changing the name of the school to West Virginia Trades School. Despite its name change, the institution failed in its trade school role. Funding from state and federal governments for vocational education was not forthcoming and the principal gave little hope that the school could survive.

With an extraordinary new principal and a supportive community, plans were created to develop the school into a junior college, making higher education more accessible to students in central and southern West Virginia. These plans were supported by the legislature and on April 16, 1921 legislation was passed to change the school's mission and its name to New River State School.

Throughout the years the school expanded its enrollment, programs and facilities. In the spring of 1929, 16 graduates became the first four-year-degree recipients. This was followed by another name change for the full four-year institution to New River State College in 1931.

A decade later the school became West Virginia Institute of Technology. This legislative action on March 5, 1941 directed the college to offer instruction in industrial, technical and commercial subjects. It was believed that the change would place the school in a unique role as the state's only technical college. By an act of the 1996 Legislature on July 1, 1996 the college became a regional campus of West Virginia University and was renamed West Virginia University Institute of Technology.

Today WVU Tech has an enrollment of 2,400 students and approximately 16,000 alumni. The school continues to be a leader in preparing students for future careers as engineers, scientists, teachers, health care providers and printing industry specialists. Its mission traditionally and consistently meets the challenge to grow and to meet the needs of a changing world. For nearly a century, WVU Tech continues to be a tradition of excellence.

From "WVIT: A History" By Dr. Ronald R. Alexander

By acts of the Legislature, Tech was separated into two institutions in 2004, with all two-year associate degrees awarded by the Community and Technical College at WVU Tech (CTC at WVU Tech) and all four-year baccalaureate degrees awarded by Tech Presidents.

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C.H. Martin, A.B.	1921-1933
Edward S. Maclin, M.A.	1933-1945
M.J. Horsch, M. Ed., Ped. D	1945-1953
William B. Axtell, Ed. D	1953-1961
Leonard C. Nelson, Ph. D	1961-1986
Robert C. Gillespie, Ph. D	1986-1992
John Carrier, Ph. D	1992-1999
Karen R. LaRoe, Ed. D.	1999-2003
Charles Bayless J.D. (Tech)	
Jo Harris Ph. D. (CTC at Tech)	
. /	

DIRECTORY Information (304) 442-3071

www.wvutech.edu

AA/EEO/Social Justice Officer	Morgantown, WV	293-5496
Academic Affairs	Old Main, 216	442-3207
Accounting Department	COBE, Room 329	442-3483
Admissions	Welcome Center	442-3167
Alumni Office	Old Main, 204	442-1003
AmeriCorps VISTA	COBE, 325	442-3002
Athletic Director	Neil D. Baisi Athletic Center	442-3121
Bears Den	Tech Center, 2nd Floor	442-3281
Bear Tracks	Old Main, W. End Entrance	442-3180
Bookstore	Tech Center, 3rd Floor	442-3106
Buildings and Grounds	Lanham Maintenance Building	442-3104
Cafeteria	Hirise Hall	442-3277
Career Services	Old Main, 326	442-3185
Campus Police	Ratliff Hall, 1st Floor	442-3313
Cashier	Old Main, 212	442-3176
Center for Research	Room 210, Engineering Building	442-3162
Center for Instructional Technology	Rear Entrance, Vining Library	442-3159
Chief Financial Officer	Old Main, 120	442-3355
Child Care Center	Westmoreland Hall	442-1008
College of Business, Humanities and Sciences	COBE, Room 227	442-3105
College of Engineering	Mezzanine, Engineering Building	442-3161
Community and Technical College	Davis Hall, 105	442-3000
Collegian	Old Main, W. End Entrance	442-3180
Computer Science Department	Engineering Lab Building	442-3361
Controller	Old Main, 209B	442-3155
Cooperative Education	Old Main, 326	442-3291
Counseling Services	Old Main, 325	442-3051
Creative Arts	Conley Hall	442-3192
Dean of Student Development	Old Main, 325	442-3158
Dental Hygiene Clinic	Davis Hall, 6th Floor	442-3345
Dining Services	Hirise Cafeteria	442-3277
Engineering Technology/Industrial Technology	Davis Hall, 218	442-3098
External Engineering Programs	Mezzanine, Engineering Building	442-3161
Extended and Continuing Education	Vining Library 324	442-3200
Financial Aid	Welcome Center	442-3228
Information Technology	Engineering Lab Bldg.	442-3366
Institutional Research	Old Main, 208	442-1004
Human Resources	Old Main, 216	442-3179
Institutional Advancement	Applied Tech. Center	442-3049
International Students	Old Main, 210	442-3143
Library	Vining Library	442-3322
Cataloging		442-3322
Circulation		442-3230
Director		442-3141
Ordering		442-3324
Periodicals		442-3218
Reserve		442-3323
Reference		442-3321
Mail Room	Old Main, 209A	442-3060
Medical Services (Student)	Old Main, 325	442-3158
Mediation	Old Main, 325	442-3158
Military Science (ROTC)	Old Main, 007	442-3265

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Minority Affairs Non-traditional Student Services Nursing Oak Hill Center Parents' Partnership Program Physical Education President, CTC at WVU Tech President, WVU Tech Printing Technology Department Printing Services Public Relations and Marketing Records Registrar Residence Hall Offices

Residence Life South Charleston Technology ParkCenter

Student Success Center Student Support Services Social Sciences Department Southern Appalachian Labor School Sponsored Programs Student Activities Board Student Activities/Tech Center Student Government Association Student Services Student Success Programs Swimming Pool Switchboard Teacher Education Tech Center Tech Foundation, Inc. Title IX Compliance Coordinator Upward Bound Veterans' Affairs Vice President for Academic Affairs Career-Technical Education Work Study

Old Main, 325	442-3158
Old Main, 325	442-3158
Orndorff Hall, Room 2400	442-3346
912 E. Main St., Oak Hill	465-0546
3 rd Floor Vining Library	442-3853
M-111 Physical Education Building	442-3121
Davis Hall, 208	442-3149
Old Main, 217	442-3146
Engineering Lab, 109	442-3172
Old Main, 123A	442-3191
Welcome Center	442-1005
Old Main, 127	442-3113
Old Main, 210	442-3151
Coed, 1st Floor	442-3800
Hirise, 2nd Floor	442-3600
Ratliff, 1st Floor	442-3500
Old Main, 322	442-3183
3200/3300 Kanawha Turnpike,	720-1031
Building 701, South Charleston	
3 rd Floor Vining Library	442-3853
Tech Center, Rooms 104, 107	442-3477
COBE, Room 327	442-3157
COBE, Room 214	442-3328
Applied Tech. Center	442-1078
Tech Center, 1st Floor	442-3486
Tech Center, 3rd Floor	442-3100
Tech Center, 1st Floor	442-3193
Old Main, 325	442-3158
Library, third floor	442-3224
Health and Phys. Ed. Bldg.	442-3299
Old Main, 123A	442-3071
COBE, Room 225	442-3227
Tech Center	442-3100
Old Main, 201	442-3491
Old Main, 325	442-3158
Tech Center, Room 102, 105, 106	442-3196
3 rd Floor Vining Library	442-3853
Old Main, 216	442-3207
Orndorff, Room 3414	442-3125
Old Main, 216	442-3058

FAX NUMBERS

President, CTC at WVU Tech	442-3245
President's Office	442-3059
Acct./Fin./Mgt./CIS Depts	442-3810
Admissions	442-3052
Alumni Office	442-3862
Athletics	442-3499
Bookstore	442-3007
Business Office	442-3463
College of Bus., Hum., & Sci.	442-3488
Community and Technical College	442-3245
Computer Center	442-3456
Computer Science Department	442-3201
Counseling	442-3371
Dental Hygiene	442-3093
Extended Education	442-3090
External Engineering Programs	442-3307
Human Resources	442-3059
Institutional Advancement	442-3052
Learning Center	442-1033
Mediation	442-3371
Mathematics	442-3201
Parents' Partnership Program	442-3090
Residence Life	442-3464
Student Activities	442-3239
Student Services	442-3464
College of Engineering	442-1006
Learning Center	442-1033
Library	442-3091
Nursing	442-3479
Orndorff Hall	442-1046
Physical Plant	442-3204
Printing Department	442-3454
Registrar and Records	442-3097
Social Sciences	442-3285
Student Services	442-3464
Student Success Center	442-3090
Upward Bound	442-1033
Veterans' Affairs	442-3090
Vocational-Technical Education	442-3184
WVU Tech – Oak Hill	465-8680

Commitment to Social Justice

The pursuit of truth underlying the mission of West Virginia University Institute of Technology (WVUTech) and the Community and Technical College at West Virginia University Institute of Technology focuses attention on issues of diversity, power, and perspective, so that students, faculty, and staff may study and work in a climate of academic freedom and social responsibility, developing the skills, knowledge, and self-esteem necessary for participation as world citizens.

Equal opportunity is a fundamental goal in a democratic society, and WVU Tech and the Community and Technical College at WVU Tech share the responsibility for achieving that equity. The institutions are committed, therefore, to ensuring that all persons, including women; people of color; people with disabilities; gays, lesbians, and bisexuals; veterans; and people of different religions, ages, and international, ethnic, and economic backgrounds benefit from the many opportunities the institution provides.

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

The importance of the social justice program goes beyond the benefits that accrue to any one person or group, to the strengthening of the institutions and the enhancing of the ability to accomplish the mission with which they have been entrusted by the people and the state of West Virginia.

Mediation

Conflict is a part of everyday life, and is not necessarily good or bad. The mediation of conflicts that arise among us is an important tool in helping members of our community successfully live and work well together. The Social Justice Office administers the Mediation program at West Virginia University Institute of Technology and the Community and Technical College at WVU Tech.

Common causes of conflict are breakdowns in communication, contradictory beliefs and values, changes, cultural differences, and misinformation. Conflict makes many people uncomfortable, disrupts work, may cause illness, and is often times difficult to define and deal with. Examples include, but are not limited to: supervisor/employee relationships; co-worker behavior; work expectations; schedules; annoying habits; credit for work done; and many more. Mediation is a structured process of communication that creates a special context for people to discuss and resolve issues of mutual concern. Mediators lead the process to clarify issues, identify options, and create an agreed-upon course of action.

Mediation is a valuable alternative in resolving differences. Participation is always voluntary on the part of all parties and mediation occurs during official work time. If assistance is needed to arrange for mediation, please contact the Dean of Student Development at 442-3158. There is no charge for this service. West Virginia University Institute of Technology and the Community and Technical College at WVU Tech Profile: Institutional Overview

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WEST VIRGINIA UNIVERSITY INSTITUTE OF TECHNOLOGY Mission Statement

West Virginia University Institute of Technology, West Virginia's only public institute of technology and a regional campus of West Virginia University, has the responsibility to address the engineering, scientific, and technical educational needs of business, industry, and government. The most important function of the Institute is to prepare citizens of the State, national and global communities. A student-centered philosophy of education that balances career preparation with understanding and appreciation of the traditional arts, humanities, and sciences guides fulfillment of this mission. As part of its public trust and as a contributing community member, WVU Tech also has responsibilities to participate in the economic development of the area and improve the quality of life in the region through the intellectual, cultural, and recreational opportunities it offers.

To accomplish its mission, WVU Tech (in collaboration with the CTC at WVU Tech):

- provides (1) baccalaureate, and graduate degree programs to prepare individuals for careers in the public and private and private sectors that derive from the basic and applied sciences and (2) academic programs through the community and technical college component to prepare students for technically oriented occupations;
- offers continuing, extension and workforce education relevant to the regional needs;
- convenes a faculty with excellent credentials, dedicated to teaching and active in the pursuit of scholarship;
- collaborates within the West Virginia University system and with other institutions to deliver academic programs and support services that promote access to higher education for traditional and nontraditional students; and
- enhances the educational process and fosters intellectual, professional, and personal growth of its students, faculty, and staff in an open, ethical, and stimulating environment characterized by an appreciation for diversity, personal respect, and frequent collegial interactions.

Institutional Goals

In order to accomplish the WVU Tech mission, the following institutional goals have been established:

- Students Attract and retain a highly capable student body.
- Faculty and Staff- Attract and retain qualified faculty and staff committed to professional development, scholarly and creative activities, and a quality learning environment.
- **Programs**-Offer academic programs that enhance the ability of students to be critical thinkers, lifelong learners, and responsible and ethical citizens.
- Service Create a campus culture of service that supports and promotes economic and cultural development.
- Environment- Foster an environment that promotes excellence, values diversity, and supports personal growth.
- **Resources**-Acquire and effectively utilize the financial, human, informational, and physical resources needed to fulfill the mission of WVU Tech.

Profile

West Virginia University Institute of Technology was established by the State Legislature in 1895 as Montgomery Preparatory School, a branch of West Virginia University. With the development of local district high schools, it was assigned a vocational education role beginning in 1917 and its name was changed to West Virginia Trade School. In 1921, again responding to changing community needs, it became a junior college, New River State School, with the primary function of training teachers for regional elementary schools. As a result of its growth to baccalaureate degree status, it became New River State College in 1931. By 1941, in response to demands for personnel from industries and businesses, the institution added technical and business programs. Recognizing this new role, the State Legislature renamed the College the West Virginia Institute of Technology. In 1952, the College began to offer bachelor degrees in engineering. This marked the first instance in which a West Virginia four-year college had developed a specialized role in providing educational services to its constituencies. In response to regional needs, Tech established community college programming in 1966. A master of engineering program was added in 1978.

By an act of the 1996 Legislature on July 1, 1996 the college became a regional campus of West Virginia University and was renamed West Virginia University Institute of Technology (WVU Tech). In February 2004, the Community and Technical College division received independent accreditation by North Central Association in response to Senate Bill 703 and was accredited as The Community and Technical College at West Virginia University Institute of Technology (CTC at WVU Tech.)

WVU Tech and the CTC at WVU Tech comprise WVU's southern-most regional campus. Since programs offered by the colleges are primarily career oriented, the institutions acknowledge the primacy of instruction, but also encourage faculty to research in their respective fields, as a valuable concomitant to good instruction. Within the realm of public service, WVU Tech and the CTC at WVU Tech also stress the importance of continuing education to serve the needs of the people of the region, including those in the industrial, business, and educational communities. WVU-Morgantown, WVU Tech, and the CTC at WVU Tech , along with the other regional campuses, are working together to use technology to expand offerings available to students in the southern part of the state.

Baccalaureate degrees are offered through WVU Tech in engineering, the sciences, computer science, business areas, social sciences, nursing, and humanities, and engineering technologies. The CTC at WVU Tech offers associate degrees in engineering technologies, health, business, printing, and general studies. The Colleges also offer experiential degree programs for nontraditional students as well as extension and continuing education. One graduate degree, the master's of control systems engineering, is offered. Tech maintains a cooperative education program for students majoring in degree programs and remedial education for those admitted to the College but not eligible for entrance into degree programs. The CTC also offers certificate programs in business and office technology and printing.

Phone: (888)-554-TECH; Web: www.wvutech.edu or http://ctc.wvutech.edu

Location

West Virginia University Institute of Technology and the Community and Technical College at WVU Tech are located in Montgomery, West Virginia, twenty-eight miles southeast of Charleston, the state capital. Situated on the Kanawha River in the rugged Allegheny Mountains, Montgomery has about 2,000 residents. In addition, approximately 1,000 Tech students reside in the town from August to May. Montgomery is a friendly community, in which city officials and the college administration have cooperated for more than eighty years in joint endeavors that have promoted the progress of Tech and at the same time have proved beneficial to residents of the community.

The campus, which occupies both hillside and valley land, blends in well with the terrain of the area. Its impressive buildings befit the importance of the college to the community and to the region. Major transportation facilities which serve the college include Interstate Routes 64, 77, and 79, all of which run within thirty miles of the campus; U.S. Route 60, a major east-west artery adjacent to the campus; and Yeager Airport in Charleston. Bus service is available

through the Greyhound Lines, which stops at Gauley Bridge, Charleston and Beckley, as well as more distant points; major assets are Amtrak service from Chicago, Cincinnati, Washington D.C. and New York City that stops on campus; the Kanawha Rapid Transit (KRT), with convenient schedules between Montgomery, Charleston, and other towns in the Kanawha Valley; and the Mountain Transit Authority (MTA), which provides weekday transportation to Oak Hill and Summersville.

Accreditation and Memberships

WVU Tech and the CTC at WVU Tech are accredited by the Higher Learning Commission and are members of the North Central Association of Colleges and Schools, 30 North LaSalle Street, Suite 2400, Chicago, IL 60602-2504 (800-621-7440)

WVU Tech's curricula in chemical engineering, civil engineering, electrical engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). The bachelor of science in nursing program is approved by the West Virginia Board of Examiners for Registered Nurses and accredited nationally by the Commission of Collegiate Nursing Education (CCNE).

The CTC at WVU Tech associate of science degree programs in civil engineering technology, drafting & design engineering technology, electrical engineering technology, and mechanical engineering technology, as well as the bachelor of science in electronic engineering technology and engineering technology (civil and mechanical emphases) are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET). The program in Dental Hygiene is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and by the United States Department of Education.

WVU Tech and the CTC at WVU Tech are members of numerous national organizations. They include the American Association of State Colleges and Universities; the American Association of Community Colleges, the American Association for Health, Physical Education and Recreation; The American Assembly of Collegiate Schools of Business; the Commission on Collegiate Nursing Education (CCNE); American Society for Engineering Education; the American Society for Testing and Materials; the American Library Association; the National Association of College Stores; the National Association of Intercollegiate Athletics; and the National Association of Collegiate Registrars and Admission Officers; the National Association of Student Personnel Administrators; and the United Association for Labor Education; College, and University Staffing; Mid-Atlantic Placement Association for School; College and University Staffing; University Council of Industrial Relations; Human Resources Programs; American College of Health Care Executives; and the National Council of Educational Opportunity Programs (NCEOA).

The colleges are also members of major state organizations including the West Virginia Intercollegiate Athletic Association; the West Virginia Women's Intercollegiate Athletic Association; the West Virginia Nursing Education Foundation and WV Association of Deans and Directors of Nursing Education Programs; the West Virginia Association of College and University Presidents; and the West Virginia Council of College and University Physical Plant Administrators and Supervisors; and the West Virginia College Placement Association.

Degrees Offered

WVU Tech offers the bachelor of art, bachelor of science, and master of engineering degrees. Bachelor of arts degrees are available for majors in history and government and in the Regents B.A. program. Bachelor of science degrees are available for majors in accounting, management information systems, business management, technology management, industrial relations and human resources, industrial technology, printing management, engineering technology, engineering technology-civil/environmental/mechanical, electronic engineering technology, biology, chemistry, mathematics, nursing, engineering physics, public service administration and health services administration.

WVU Tech also offers the Master of Science in control systems engineering, and the bachelor of science in chemical engineering, civil engineering, computer science, electrical engineering, and mechanical engineering.

The CTC at WVU Tech offers associate of science degrees in business technology with emphases in accounting, business supervision, restaurant management, and computer information systems; general studies; computer and information technology; office technology management; dental hygiene; respiratory therapy; and printing technology. Associate of science degrees are also available in the following engineering technology fields: civil, drafting and design, electrical, and mechanical. The associate of applied science is offered in occupational development (corrections, culinary arts, and child development specialist emphases), technical studies (automotive service technology, diesel technology, manufacturing and para-educator emphases) and The Board of Governor's Adult Completion Program. A one-year certificate may be obtained in claims processing, electrical mining specialist, electro-mechanical specialist, mechanical mining specialist, computer network specialist, internetworking and computer security specialist, digital imaging, network security administrator specialist, help desk, manufacturing, medical transcription, press technology, pre-press technology, and entrepreneurship.

Enrollment

WVU Tech and the CTC at WVU Tech are proud of the diverse atmosphere on campus. In 2003-2004, for example, students from 22 foreign countries and 15 states elected to study at the institutions. Of the 2,468 students, 1,489 were men and 979 were women. West Virginians comprise 89 percent of the full-time enrollment.

Academic Advising

Each student is assigned an academic advisor who is a faculty member from the student's major field of study. Students in general studies will have an advisor in the CTC at WVU Tech.

Assignment of advisors may vary slightly from department to department. Students having any doubt about the advisor to whom they are assigned should see the department chair.

Educational Facilities

Twenty-three academic, administrative, and residential buildings are situated on the 200 acres owned by the colleges. Construction and renovation costs of the buildings have been over \$20 million but the replacement value of the physical plant, its equipment, and acreage is estimated to be \$50 million.

Old Main (1896) is the oldest building on campus. With an east wing completed in 1899, the west wing added in 1904, and an addition made to the east wing in 1958, Old Main today

houses administrative offices, including those of the WVU Tech president, vice president of academic services, international student office, administrative vice president, dean of student services, registrar, business manager, career services/cooperative education, printing services, and public information, as well as several academic departments. A red brick structure, Old Main is situated on a hillside overlooking the campus.

William G. Conley Hall (1931) contains faculty offices, classrooms, and practice rooms for the Music Department. It also houses the Little Theatre, where productions of the active drama group, Tech Players, are presented. Once the location of the college library, Conley Hall was named for the eighteenth governor of West Virginia. An extensive renovation of Conley Hall was completed in 1978.

Orndorff Hall (1989) is the home for the departments of chemistry, nursing, physics and biology, as well as housing the faculty of other academic departments. Located on Route 61, the 36,000 square foot building offers modern laboratories, classrooms and offices.

COBE Building was formerly known as Science Hall. It now houses the College of Business, Humanities and Sciences. Renovation was completed in 1992.

Neil D. Baisi Athletic Center (1966) contains the field house, the Wellness Center, weight room, an Olympic-size swimming pool, and the offices of the Department of Physical Education and the Director of Athletics.

Martin Field (1932), named for the school's first president, C.H. Martin, is the home of the WVU Tech Golden Bears football team. However, it is also an outside classroom for the physical education department, playing field for intramurals, as well as the Valley High football team. Astro Turf was placed on the field in 1977 at a cost of over a half million dollars and was replaced in 1986 at a cost of \$450,000, but it has proven worthwhile, as the field is in use on most days from 8 a.m. to 11 p.m. The press box has also undergone recent renovation and expansion. The stadium, which sits high on the hill behind the school, has a seating capacity of 3,000 and is the site for commencement.

Engineering Building (1967) is a seven-story structure containing classrooms, laboratories, an auditorium, and the office of the dean of the Leonard C. Nelson College of Engineering. All engineering departments are located in the Engineering Building.

Engineering Laboratories Building (1983) houses the Engineering Laboratories, the Computer Science Department, the Math Department, and the Computer Center. Printing Technology is also located in this two-story structure.

A. Reed Davis Hall (1972) is home of the Community and Technical College at WVU Tech. Named for a former academic dean of the college, Davis Hall is a six-story structure housing two-year and four-year engineering/industrial technology programs, as well as programs in health and business. Supporting these programs are technical laboratories such as computer graphics (CAD), robotics, electronics, programmable logic controls, inter-and-intranetworking, process control, fluid power, computers, metallurgy, manufacturing, office practices, and dental hygiene. Davis Hall contains the office of the president of the Community and Technical College.

Westmoreland Hall (1978) houses the Civil Engineering Technology program, the Tech Child Care Center, and provides support laboratories for other engineering technology programs. Built at a cost of \$375,000 from state, federal and private industry monies, the building contains one classroom, various laboratories, a civil resource room, and an open laboratory area with a 10-ton hoist and larger equipment for several programs. The Day Care Center occupies the second floor of the facility.

Vining Library

The library was built in 1971 and named after former English professor Dr. Roscoe H. Vining. It represents an investment of over \$10 million including building, books, computers and furnishings. It encompasses nearly 60,000 square feet of floor space in three stories and a mezzanine. Its plan is very open and spacious including student access to the stack area.

The library collection has surpassed 160,000 volumes and continues to grow. In addition it has 360,000 microtexts. It subscribes to 300 journals and 6000 internet based full text journals. Internet access is provided by a computer lab with 25 stations.

The building provides an inviting atmosphere for study. It is spacious with seating for 500 which accommodate a variety of research styles. These include dozens of large tables, over 100 study carrels, fifteen private study rooms, two seminar rooms and a large conference room.

Other services provided by the Vining Library include interlibrary loans, computer-automated book charging equipment, fax services, photocopiers on the two main floors and a computer lab.

The Kraybill Room, named for D.B. Kraybill, a former dean of the college, is on the first floor of the library. It houses Tech's West Virginia Collection, including over 2,000 volumes about West Virginia or by West Virginia authors.

The library staff, dedicated to helping students in their research and study needs, is available to assist any student in using the library facilities during regular hours throughout the school year. Library Hours are Monday – Thursday 8 a.m. to 10 p.m., Friday 8 a.m. – 4:30 p.m., and Saturday— Sunday 1:30 p.m. to 10 p.m. The summer hours are Monday – Friday 8 a.m. – 4:30 p.m. Special holiday hours are announced in advance.

Computer Center

The Computer Center is designed to serve the needs of the administration, faculty, and students. The Center is equipped with a Digital Equipment Corporation VAX 4700A, plus auxiliary equipment for administrative computing; MS Windows 2000 servers. Supported software applications include Campus Pipeline, Banner, Corel Suite, MS Office, MS Windows 98, MS Windows 2000 and MS windows XP. The Computer Center is located on the first floor of the Engineering Lab Building.

WVU Tech and the CTC at WVU Tech are participants in the West Virginia Network for Educational Telecomputing (WVNET). WVNET provides access to the internet as well as access to large scale computing.

The Computer Center provides computer service to the school administration. This involves the maintenance of records for the offices of the registrar and admissions, college accounting for the business office, financial aid accounting, public information data, Human Resources and data for administrative reports.

The WVU Tech Computer Center provides on-campus internet connectivity to faculty, staff and student dorms as well as dialup access through WVNET modem accounts.

Alumni Association

The Tech Alumni Association is comprised of all former students who have received academic credit from Tech. Active and emeritus members of the faculty are considered honorary members, and friends of the college may be elected to associate membership. The purpose of the Association is to promote the interests the colleges and to establish a mutually beneficial relationship among the colleges, alumni, and all other appropriate constituencies.

Tech Foundation, Inc.

Tech Foundation, Incorporated, was established in 1964 to provide financial support for the institutional needs. In addition to receiving cash contributions, the Foundation provides free counseling for donors who prefer to make a deferred gift through unitrusts, insurance, and other methods. The offices of the Foundation are located in Old Main and may be reached by dialing 442-3491, or by writing:

Tech Foundation, Incorporated Box 94 WVU Tech Montgomery, West Virginia 25136

Student Life

STUDENT SERVICES Bookstore

Customer service is the college bookstore's top priority. We strive to provide our community with the friendly and knowledgeable service they deserve.

We realize that our students want used textbooks, and we work hard to provide as many as possible. The Tech Bookstore is managed by Barnes & Noble, Inc. and has a sister company that is one of the largest used book companies. This affiliation enables the Tech Bookstore to carry a large selection of used books. Used textbooks are priced 25 percent less than new and are guaranteed to have all the pages.

The Tech Bookstore, for your convenience, carries a wide variety of merchandise, including, but not limited to, engineering paper, dissecting supplies, snack foods, school and office supplies, reference books, study aids, general books, WVU and WVU Tech sportswear and gift items.

We invite you to visit the Tech Bookstore. We accept checks, Visa, MasterCard, Discover, and American Express. Take advantage of the merchandise and services offered in the Tech Bookstore (located on the top level floor of the Tech Center).

Open year-round Monday – Friday, 8:30 a.m. to 4:30 p.m. www.wvutech.bkstore.com

Campus Police

Public safety is maintained by the Campus Police Department. Officers are assigned to patrol the campus around the clock. Their duties include the preservation of peace and public safety to the students, faculty, staff, and visitors.

The officers strive to provide an atmosphere free from fear for personal safety, property loss, or accident and, thereby, contribute to the academic excellence of WVU Tech and the CTC at WVU Tech.

Campus Police is responsible for enforcing all parking and traffic regulations on the campus. On-campus parking is available by permit only. Permits may be purchased in the Student Service Center located in Tech Center, Third floor.

Career Services

www.wvutech.edu/students/career center/

The Career Services Office (CSO) offers career development assistance to all students. Daily contact with employers and faculty enables office personnel to provide students with an up-to-date and realistic reference between college and the world of work.

Career decisions are best thought out carefully; therefore, students are encouraged to begin in their first semester and take advantage of CSO opportunities throughout their collegiate experience.

Resources Available for All Students

eRecruiting —Visit the Career Services Office from any internet connection. Apply for jobs and link up with employers, receive messages regarding open job opportunities, participate in workshops and activities, schedule interviews, post copies of resume(s), post copies of cover letter(s), and network your hard earned credentials. Contact the CSO at <u>career@wvutech.edu</u> to establish your own special *eRecruiting* account.

Jobs – Part-time, cooperative education, internship, seasonal, and summer position announcements are received regularly by the CSO. The credentials of students meeting the

given position requirements are distributed, and resulting interviews are arranged through *eRecruiting*.

Career Advising – Students in the process of making academic major or career choices may be interested in receiving individualized assistance from several on-campus sources.

Career Day/Job Expo – A number of employer representatives visit the campus each fall for this special two-day event. Students are invited to meet with these representatives to present resumes or to discuss employment desires, opportunities, and forecasts. Additional off-campus "real-time" and "virtual" career fair events are announced and available to students throughout the academic year.

Graduate and Professional School Information – Graduate school catalogues and program directories as well as free application materials for the GRE, GMAT, LSAT, MCAT, TOEFL and TSE examinations are available.

Resources Especially for Graduating Students

Jobs – Full-time employment opportunities received by the CSO results in either the distribution of qualified student credentials or the notification of those students via *eRecruiting* instructing them of appropriate application procedures.

On-Campus Recruiting – Employers regularly visit campus to interview candidates for full-time employment opportunities. Students wishing to be considered for on-campus interviews are to contact the CSO during the first semester of their graduating year to establish a credential file.

Cooperative Education

The Cooperative Education program alternates terms of on-campus study with terms of paid full-time employment. 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. Eligible students are assigned to work in settings that are commensurate with their academic program and education. For additional information, please refer to page 93.

Student Health Services

WVU Tech and CTC at WVU Tech student health services are provided at the Montgomery General Hospital in Suite 101 where the Student Health Clinic is maintained. Services are available on Monday, Tuesday, Wednesday and Friday of each week. The clinic can be reached by telephone at 442-2613. While an appointment is not necessary, students are encouraged to call to decrease waiting time. Students will be required to present a valid Tech student ID.

Services include acute care and family planning services. Students with emergencies such as broken bones, respiratory distress or allergic reactions are encouraged to go immediately to the Emergency Department at Montgomery General Hospital. Student fees cover services provided by the WVUIT Student Health Clinic only. Any expense incurred outside the WVUIT Student Health Clinic, such as x-ray, lab work medications and referrals to other health care providers are the responsibility of the student.

Patient education is a primary concern of all staff, and educational materials on health problems common to the college-age population are provided as a supplement to treatment. Students are encouraged to know their instructor's requirements and expectations regarding class attendance.

Each student is encouraged to come to campus knowing his or her own medical history, any allergies, and any medications taken. For those students with insurance, it is recommended that they bring proof of insurance to campus for those services and medications not covered under the WVU Tech Student Health Clinic services.

Printing Services

Printing services are available to the campus via facilities in Old Main, Room 123. Printing of letterhead, business cards, standard forms, posters, newsletters, brochures, school work and invitations are a few of a wide variety of services offered. Services are scheduled on a priority basis; billing is handled (for faculty and offices) through the Business Office.

Printing Services now has a color copier and can also print two-color jobs.

Residence Life (Housing)

Housing and dining facilities are available for all students. These services are provided on a contractual basis for the fall, spring, and summer terms.

The campus has three residence halls: Hirise, Ratliff, and Coed. Each hall has its own unique atmosphere and type of residence rooms.

Lavada Ratliff Hall is our newest co-ed residence hall. The East wing contains 2 floors for male residents and the West wing has 3 floors for female residents. The Ratliff Hall wings are treated as two separate buildings for all practical purposes. This centrally located hall is adjacent to both the Vining Library and the Neil Baisi Athletic Center

The vast majority of rooms are traditional double-occupancy rooms with cable TV, internet connections, and telephone jacks provided. All Ratliff rooms are carpeted. Each floor has a centrally located community bathroom. The hall has a main lounge with big screen TV, student-accessible meeting room, kitchen, wellness/fitness room, vending area, main desk, individual mailboxes, recreation room, and two laundry rooms. The hall also has several sundecks and individual floor lounges.

There is one Intensive Quiet Floor for males and one for females in Ratliff Hall. The Intensive Quiet Floor provides residents with a quieter environment geared towards intensive evening study. Placement in these communities must be requested by the resident. Community members must sign agreements pledging to live within the guidelines of these environments.

The Campus Police Department is located in Ratliff Hall providing a real convenience to residents. On one floor of Ratliff Hall, office space is available for 14 student clubs and organizations. For security reasons, this floor does not have direct access to the floors with resident rooms.

Hirise Hall is the tallest building in Montgomery and thus has the best view of the surrounding mountains and valley. The hall houses 264 men in two-room suites, which have cable TV, computer internet access, and phone jacks provided.

Each suite is designed to house up to four students. The suites consist of two rooms containing two sets of bunk beds, four desks, four chairs, and four closets (built into the back room). The rooms may be set up as the students desire, but we recommend a room for studying and socializing and another room for privacy and sleeping. Although each suite can comfortably house four students, efforts are made to place fewer students in each suite when enrollment permits. On each floor is a centrally located community bathroom, eight suites, and a Resident Assistant room. There are four small private rooms.

Hirise Hall offers residents a special lifestyle option in the form of the Intensive Quiet Floor. This floor provides residents with a quieter environment geared towards intensive evening study. Placement in this community must be requested by the resident. Community members must sign agreements pledging to live within the guidelines of this environment.

Other conveniences in Hirise Hall are individual mailboxes, two elevators, an office with a change machine, a laundry room, and a recreation room.

The Hirise Cafeteria (our campus dining room) is located on the first floor of this hall. This is a definite advantage for Hirise residents, especially during bad weather.

Coed Hall is the most unique residence hall on campus. This air-conditioned facility houses 300 students living in groups of rooms called modules, which have cable TV and phone jacks provided. All of the rooms have internet access. The number of male and female modules varies from year to year, depending upon enrollment and housing needs.

Each module is a self-contained unit consisting of six double occupancy rooms surrounding a bathroom and jointly shared lounge. This setting allows students to live in an environment conducive to individuality.

Coed Hall is ideal for the student who is self-sufficient and committed to a high degree of personal responsibility. Most Coed Hall residents are upperclassmen. For this reason many freshmen often find other residence halls more attractive.

Coed Hall has three sundecks, a mail room, an office, a recreation room, a TV area, a kitchen area, and a laundry room.

All unmarried freshmen and sophomores who do not commute from the permanent legal residence of their parents or of a guardian, grandparent, brother or sister, aunt or uncle are required to live in a residence hall. This requirement is waived if the student has:

- 1. served two or more years of active duty in the Armed Forces or has completed the reserve obligation;
- 2. finished high school at least two complete years prior to attending college;
- 3. lived in a college residence hall for four semesters; and/or
- 4. a physical disability which would prevent residence hall living.

Tech reserves the right to require all students to live in the residence halls. All freshmen and sophomores who are obligated by the residence hall requirement will not be released from this agreement during an academic year. Freshmen and sophomores, not otherwise obligated, who choose to sign the Housing and Food Service Contract are obligated for the remainder of the academic year. The Housing and Food Service Contract is for the entire academic year.

Students who have lived in the residence halls four semesters are eligible to sign Housing and Food Service contracts one semester at a time. This option is also extended to participants in special academic programs of the college such as the co-op program.

The staff believes that living on campus contributes significantly to the academic and personal development of the student. For example, during the Fall 2002-2006 semesters, a higher percentage of Dean's List students lived on campus than off.

The residence hall living environment provides a framework rich with challenging and rewarding interpersonal experience. Each hall is managed by a staff member. Each residence hall floor, section, or group of modules has a resource person called a resident assistant (RA).

The resident assistants are students trained to advise fellow residents, to help them adjust to college life, and to assist them in developing concern for others. The RAs and the professional staff work as a team to provide developmental opportunities for students in each residence hall community.

For additional information, visit our website at **www.wvutech.edu/residencelife/housing.html**

Dining Service

Tech operates its own professional catering and student dining service through WVU to prepare meals for residence hall students. The college dining hall, located in Hirise Hall, provides two meals a day, and is open from 11 am to 7 pm Monday through Friday. Resident students have a choice of 3 meal plans (10, 15, or 19 meals per week). Students may eat their meals at the Hirise Cafeteria or in the Bear's Den, located on the second floor of the Tech Center. The college dining hall, located in Hirise Hall, provides lunch and dinner each day and the Bear's Den provides breakfast and lunch each day, Monday through Friday. Students have the option to dine in the Hirise Dining Hall (all you can eat) or in the Bear's Den (cash-equivalent basis). Provisions for special diets are made by the Dining Services Director. Weekend meals (Brunch and Dinner) are served Saturday and Sunday in the Bear's Den.

The Bear's Den Snack Bar is located on the second level of the Tech Center. The Den provides fast foods, special plated lunches, and a variety of beverages and desserts.

Tech also operates a snack bar in the lobby of Davis Hall. The Cub House is open 7:30 am to 1:30 pm Monday through Friday with cash sales only.

Housing and Food Service Contracts

Housing and Food Service contracts are available at the Office of Residence Life. A contract must be completed by each student and accompanied by a \$100.00 deposit. This deposit will be applied to the room and board charges during the last semester of the contract. We require separate contracts for the academic year (fall and spring) and summer. For more information regarding meal plan options, call the Residence Life Office, (304) 442-3183.

Off-Campus Housing

The Tech Center maintains a bulletin board of available housing in the community and in surrounding areas. Contact Student Activities (442-3100) for additional information. Students living off campus may take their meals in the Hirise Cafeteria. For more information regarding meal plan options, phone the Residence Life Office, (304) 442-3183.

International Students

The goal of International Student Services is to enhance the well-being of our international students by helping them to assimilate into the local culture, to disseminate and interpret immigration information, and to provide a general support system. The office promotes and supports activities that help foster good relations among students of different nationalities and between international students and the campus community.

Each year, the office sponsors and coordinates various cultural events and social activities, presents programs designed to meet the special needs of the international student, and provides individual counseling and advising services to these students. International Student Services is located in 210 Old Main. The telephone number is 304-442-3143.

Nontraditional Student Services

At WVU Tech and the CTC at WVU Tech, there are a growing number of nontraditional students seeking a degree in higher education. A nontraditional student is any student who can be defined in one or more of the following ways:

- did not attend college immediately after graduation from high school;
- married and supporting a family;

- supporting parents or other elderly adults;
- a single parent;
- working full time;
- returning to school after a prolonged period of time; and/or
- retraining for a new career.

The faculty, staff, and administration recognize the sacrifices made by these students and strive to assist them in their endeavor. Furthermore, the CTC at WVU Tech has appointed a Nontraditional Student Services coordinator to assist this growing segment of the student body. There is also a Nontraditional Student Organization (NTSO)

Services for Students with Disabilities

Consistent with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, West Virginia University Institute of Technology and the Community and Technical College at WVU Tech ensure that individuals with disabilities are afforded an equal opportunity to participate in the academic programs and services. Reasonable modifications in policies, practices, and procedures are effected to assure equal access to individuals with disabilities.

The ADA Officer apprises the necessary academic personnel of the required accommodations for each student. The colleges provide priority scheduling for students with disabilities. Students who require priority scheduling must contact the Registrar's Office, phone (304) 442-3151.

Students who desire services under ADA and Section S04 are required to furnish documentation of their disabilities at the beginning of each semester. Please contact the Office of Disability Services for additional information.

Student Activities/Tech Center (Third level, Tech Center)

The Student Activities Office serves as a social, recreational, and educational outlet for the student body by providing facilities and services which offer the opportunity to become involved in the planning and production of campus events. This participation helps students develop important leadership and managerial skills that are useful after graduation. The goal of this office is to enhance the quality of campus life by helping foster broad-based intellectual and social interaction among all elements of the college community.

The Student Activities Office coordinates, supervises, and/or directs various activities, programs, and organizations some of which include Orientation, Student Government Association, Student Activities Board, and social life. The office also operates and maintains the Tech Center.

Students may cash checks and obtain student identification (I.D.) cards and parking permits in the Office.

Student I.D. cards are issued for all new students during the registration period of each semester. These cards are used for library privileges and admission to all athletic events, social activities, and other college functions. Cards are used for the entire stay at the college and are updated with stickers at the beginning of each semester. The loss of an I.D. card should be reported to the Student Activities Office immediately. The replacement fee for lost or mutilated cards is \$15.00.

Students must present car registration when purchasing a parking permit.

Checks are limited to a \$25.00 maximum.

Student Success Center

Located on the 3rd Floor of the Vining Library, the Student Success Center provides WVU Tech and the CTC at WVU Tech with a variety of programming designed to enhance student retention. Programs and activities include:

- Coordinating and participating in the delivery of WVU Tech's required Freshman Seminar course that focuses on acclimation to the university environment and reinforcement of proven student success strategies with senior students serving as Mentors for groups of same or similar majors;
- Providing Academic Recovery guidance and planning for At-Risk students on Academic Probation or identified by the faculty-initiated Early Alert system;
- Managing the campus-wide Academic Tutoring Program with student Tutors provided to any student in any course and;
- Overseeing the Parents' Partnership Program designed to promote positive and informed parental engagement in their student's university experience.

Freshman Seminar – TECH 100

Coordinated through the Student Success Center, Freshman Seminar is a required one credithour course for all first-time full-time Freshmen and full-time Transfer Students with less than 30 semester hours. The course is designed to assist new WVU Tech students in making a smooth transition into the Tech community. Through this course, new students learn about university life, career goals, and academic and personal skills necessary for successfully completing the all-important first semester at Tech. Students are grouped into course sections according to academic majors with senior students assigned as Freshman Seminar Mentors. The course is delivered by the Division of Student Development, the College of Engineering and the College of Business, Humanities and Sciences in an integrated format. Various members of the faculty, staff and administration also provide information concerning university policies and procedures. Students have an opportunity to establish early relationships with their academic departments and confer with their academic advisor in developing short-term and long-range academic and career plans.

Student Support Services

Student Support Services is a federally funded, uniquely designed educational program aimed at helping Tech students successfully advance to their graduation. Through personal and individualized support services, our program works with each student to promote growth and learning, enhance each individual's academic promise and build strong and confident leaders in the community.

Our services include personal, career and academic counseling; study skills assessment; individual math tutoring; career exploration, assessment and planning; group workshops; financial aid counseling; and cultural enrichment activities.

Any student is eligible to participate if he or she has been accepted for admission at Tech, and meets one or more of the following criteria:

- · He or she is a first generation college student
- His/her family's taxable income does not exceed levels set by federal government regulations
- · He or she is physically or learning disabled

We are open daily from 8:00 - 4:30, including summers, and look forward to working with you. Our offices are located in the Tech Center Building, First Floor. For more information,

Tech Center

Tech Center is the focal point for all members of the college community - - students, faculty, administration, alumni, staff, and guests. Among the facilities included in Tech Center are a snack bar, special dining area, television lounge, study lounge, ballroom, Tech Bookstore, Student Government Association Office, Student Activities Board, and Student Activities Office.

The Center provides for a total educational program. Through its facilities and programming, it offers a comfortable atmosphere where all members of the academic community are offered the opportunity to get to know and understand one another through informal association outside the classroom.

Student Government

The Student Government Association consists of students chosen in campus-wide elections held each spring. One of the SGA's most important functions is developing a budget for appropriating student activity fees to the many diverse student activities and organizations.

In addition to its financial responsibilities, the SGA appoints student representatives to serve on most faculty committees. These committees deal with various aspects of campus life including publications, social activities, discipline, financial aid, academic affairs, athletics, and alumni activities.

All residence halls exercise a form of self-government known as residence hall councils. Students are responsible for their conduct, social activities, and care of their facilities.

The fraternal organizations affiliated with the college maintain their own governing bodies.

Social Life

The college provides a wide variety of social activities designed to meet the needs of students. Students may wish to become involved in the Greek organizations on campus. Five fraternities and two sororities maintain active chapters. They include Delta Chi, Phi Kappa Tau, Omega Lambda Phi, Psi Delta, and Sigma Pi fraternities and Alpha Sigma Tau and Delta Zeta sororities.

Of course, much of the social life on campus is casual. Students may take in a campus movie, attend a basketball game in the field house, grab a snack at the Bears Den, or attend any number of theatre productions, coffee-house programs, and parties on campus.

Recreation

Although hiking to the top of Tech Mountain is a popular activity on the campus, other recreational facilities are available within a few minutes drive of the college.

Hawks Nest State Park, with its aerial tram to the bottom of the New River Canyon, is located 20 miles from the campus. The New River, one of only two rivers in the world that flow north and considered by many authoritative geologists to be the second oldest river in the world, is a challenge to white water rafting enthusiasts. The New River Gorge Bridge is the largest arch bridge east of the Mississippi.

Charleston's Kanawha State Forest and Coonskin Park, Fayette County's Babcock State Park, and Stephen's Lake, all located within a one-to two-hour drive, provide facilities for picnickers, swimmers, boaters, fishermen, and others who appreciate the great outdoors and the beautiful scenery in the area. Camping facilities are available in natural settings nearby. Snow skiing, the newest recreation to the area, is only 40 minutes away in Flat Top, WV.

Student Organizations

Currently recognized organizations include the following:

Accounting Leaders of Tommorrow Alpha Phi Omega Alpha Sigma Tau Sorority American Institute of Chemical Engineers American Society of Civil Engineers American Society of Mechanical Engineers Association of Information Technology Professionals Black Student Association Campus Light Ministries Christian Student Union Civil Engineering Technology Club Coed Hall Council CTC Student Government Association Delta Chi Fraternity Delta Zeta Sorority Institute of Electrical and **Electronic Engineers** Interfraternity Council International Student Association Phi Beta Lambda Phi Kappa Tau Fraternity Phi Theta Kappa Pi Alpha Psi

Pi Tau Sigma Psi Delta Remote Controled Airplane Club Sigma Pi Fraternity Sigma Pi Pledge Class Society for Human Resource Management Society of American Health Care Administrators Society of Automotive Engineers Society of Manufacturing Engineers Society of Women Engineers Student Activities Board Student Computer Club Student Government Association Tau Beta Pi WVU Tech Biological Association WVU Tech College Republicans WVU Tech Democrats WVU Tech History Club WVU Tech Marching Band WVU Tech Paintball Club WVU Tech Soccer Club WVU Tech Student Ambassadors WVU Tech Student Nurses Association

Cultural Activities

The Student Activities Board (SAB) and the Convocations Committee bring a number of nationally known artists, speakers, popular and classical performers to the campus each year. The SAB also sponsors first-run movies. The Student Activities Office assists the SAB in coordinating events, including coffeehouse performances, concerts, dances, speakers, and Homecoming.

Student Publications

The *Tech Collegian* is the weekly student newspaper. This publication functions under the direction of a student editor who is advised by a faculty member. The Student Publication Advisory Committee, comprised of faculty, staff, and students, selects the *Tech Collegiasn* Editor, and is responsible for the publication of the newspaper. The *Tech Collegian* is financed by advertising and the student activity fee as allocated by the Student Government Association.

Student Regulations

For a complete explanation of student rights and responsibilities, students should consult *BEARFACTS*, the student handbook. This handbook contains information about the residence hall living and dining, use of cars on campus, disciplinary guidelines, and other pertinent information.

Tech Child Care Center

Tech Child Care Center provides a quality learning environment to the children of students, faculty, staff, and the members of the community. Service is provided for children two to six years old on a daily basis. After-school care is available for children through age eleven.

The environment of the Center is structured to meet each child's developmental needs and interests according to age level. The teachers and other staff members encourage all children to grow and reach their highest potential while developing a positive self-image. A variety of learning activities are provided to enhance individual developmental needs including physical, emotional, social, and intellectual well-being. The child will learn actively through creativity, discovery, experimenting, and constructive play. The campus and involvement of family and community provide the child with various resources and a culturally diverse societal setting.

Tech Child Care Center is licensed by several WV agencies: the State Fire Marshal, the State Department of Health and the State Department of Human Resources.

Phone: (304) 442-1008 Open Monday – Friday 7:30 a.m. – 5:00 p.m., including summer

Theatre

Tech Players, the official drama company on campus, presents at least two theatrical productions each year. Most are scheduled in the Conley Hall Little Theatre. Tryouts are open to any student on campus. The Studio Company, formed under the auspices of the Drama Lab, presents two one-act plays each semester. This new company is a vehicle for aspiring artists to experiment with their work. Its purpose is to encourage new directors, actors, and writers to stage innovative work in an atmosphere conductive to creative growth. The Studio Company reminds us that theatre is process as well as product.

Music

WVU Tech's Department of Creative Arts provides a wide variety of activities, both vocal and instrumental, in which all musically talented students at the college can participate.

Choirs

The Tech Singers' forte is all popular styles of choral music. Membership is open to all students on campus who wish to be in a superior choral group.

The Community Choir sings the large or major choral works, including the "Messiah." Membership is open to all high school age singers, college students, and adult singers in the community.

Bands

The Tech Band performs at home basketball games and at rallies. In addition to numerous performances throughout the year, the Tech bands sponsor clinics and competitions each year for area high school musicians who wish to take advantage of the talent available at the college.

Athletics

The Athletic Department sponsors both intercollegiate athletics and intramural athletics for its students. WVU Tech is a member of the NAIA Division I and competes in the Mid-South Athletic Conference.

WVU Tech currently sponsors ten intercollegiate sports. Men's sports include football, basketball, basketball, tennis,'soccer and golf. Women's sports include basketball, soccer, tennis, softball, and volleyball. Approximately ten percent of the student body competes on the varsity level.

Students may also compete on the intramural level. Men and women may compete in such sports as basketball, volleyball, football, softball, tennis, and many others.

Recognition of Scholarship

The college publicly recognizes students who have achieved a high degree of scholarship in their academic work at WVU Tech and the CTC at WVU Tech, through formal induction ceremonies into honor societies, publication of the Dean's/Provost's List each semester, and the awarding of degrees with distinction at commencement.

Honoraries

Outstanding students are designated for membership in Alpha Chi, which recognizes exemplary achievement by students in all four-year degree fields. Phi Theta Kappa recognizes academic achievement of students majoring in two-year degree programs. Tau Beta Pi, second oldest honorary in the nation, recognizes outstanding engineering students.

Other honoraries include Alpha Psi Omega (dramatics), Eta Kappa Nu (electrical engineers), Sigma Phi Alpha (dental hygiene), Phi Alpha Theta (history), Pi Alpha Psi (printing management), Sigma Theta Tau (International Nursing Honor Society) and Pi Tau Sigma (mechanical engineers). Approximately 78 students are named each year to Who's Who in American Colleges and Universities and Who's Who in America Junior Colleges. These students are nominated for the honor by the Who's Who Student-Faculty Selection Committee.

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 3.25 or higher.

Each student whose grade average in a particular semester is 3.25 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.

Graduation with Honors

Special recognition is given at commencement to students who have achieved special distinction in their studies on the associate and baccalaureate levels. Ceremonial honors are based on the previous semester average. Final honors will be recorded on the diploma and transcript.

To graduate summa cum laude, a student must attain a 3.750 average. Magna cum laude requires a 3.500 average, and cum laude a 3.250 average.

These requirements are based on Tech averages. Transfer students are also eligible for honors, but the associate degree candidate must complete the last year (or last 32 semester hours) at the CTC at WVU Tech and the baccalaureate degree candidate must complete the last two years (or last 64 semester hours) at WVU Tech. Transfer credits must also meet the standards for honors. Transfer credits cannot permit the student to graduate with higher honors than Tech credits allow.

Institutional Testing Program

The Admissions Office serves as a testing center for several examinations given on a nationwide basis. The American College Test (ACT) is given five times each year on the campus. Every WVU Tech freshman must take the ACT or SAT in order to be admitted to the college. Students desiring admission to the CTC at WVU Tech may be admitted with ACT, SAT, Accuplacer or Compass scores.

The College Level Examination Program (CLEP) is administered by appointment in the Admission Office. Examinations are available in approximately 50 subject areas. In order to receive credit, a student must pass an examination in the proposed area(s).

WVU Tech and the CTC at WVU Tech have implemented college-wide assessment programs. Each academic department and college has in place strategies for entry, intermediate, and exit assessment. In addition, the ACT, CAAP test and/or WorkKeys test is administered to measure student academic achievement in the general education areas.

All incoming students to WVU Tech and the CTC at Tech are required to take the Compass for placement in math classes. The results of one's performance on the Compass test will be the determinant of which math class a student will be allowed to take.
Admissions

Admissions How To Apply

All requests for admission should be addressed to: Director of Admissions and Recruitment Box 80 Old Main WVU Tech/CTC at WVU Tech Montgomery, West Virginia 25136 or apply on-line at www.wvutech.edu

Applications are processed on a rolling decision basis. Students with a B average or higher will be notified upon receipt of their sixth semester high school transcript and ACT or SAT test scores. All other students will be notified upon receipt of their seventh semester or final transcript and ACT or SAT scores.

General Requirements for Admission of High School Graduates

To receive consideration for admission to four-year baccalaureate degree programs at the West Virginia University Institute of Technology applicants must have successfully completed the following high school units.

4 units of English

3 units of Social Studies

3 units of Mathematics (Algebra I & higher)

3 units of Science (Two of the three units must be laboratory science)

Students who lack one or more of these requirements may elect to enter the Community and Technical College at WVU Tech.

Leonard C. Nelson College of Engineering (Resident/Non-Resident)

To be admitted to any program in the Leonard C. Nelson College of Engineering, an applicant must meet the following additional minimum requirements:

- 1. Graduate from an accredited high school with successful completion of 2 units of high school algebra, 1 unit of plane geometry, and 1 unit of trigonometry (or advanced math).
- 2. Obtain an ACT math score of 19, a SAT math score of 460, or a high school average of B (3.000).

Students who wish to pursue a career in engineering or computer science but who do not meet the above criteria for admissions to the College of Engineering can be admitted to the Pre-engineering Program for one year while becoming eligible.

College of Business, Humanities, and Sciences (Resident/Non-Resident)

To receive favorable admission to the College of Business, Humanities and Sciences, an applicant must meet the following additional minimum requirements:

- 1. Graduate from an accredited high school with an overall grade point average of at least 2.0 or a composite ACT score of 17 or a composite SAT score of 830, or meet General Education Development (GED) requirements. Non-residents must rank in upper three-fourth of their graduating class.
- 2. Complete the American College Test or the Scholastic Aptitude Test and have test scores sent directly from ACT or SAT.

Community and Technical College at WVU Tech (Resident/Non-Resident)

To receive favorable admission to the Community and Technical College at WVU Tech, the applicant must meet the following minimum requirements:

- 1. Graduate from an accredited high school or meet General Education Development (GED) requirements.
- 2. Complete the American College Test (ACT), Scholastic Aptitude Test (SAT), Accuplacer or Compass Test. Scores are used for placement and counseling purposes only. Note that ACT scores are required for certain scholarship programs such as the West Virginia Promise Scholarship and our campus Presidential and Golden Bear Scholarships.

The Community and Technical College at WVU Tech adheres to an open admission policy for West Virginia residents. This means that anyone with a high school diploma or GED is accepted. Non-residents must have a 2.0 average and rank in upper three-fourths of their graduation class OR attain a composite score of 17 on the ACT or a composite score of 830 on the SAT. Students who do not meet this requirement may be considered for conditional acceptance upon consultation with the CTC at WVU Tech President.

Students who do not meet the requirements for admission to the Leonard C. Nelson College of Engineering or the College of Business, Humanities and Sciences are given the option of enrolling in the Community and Technical College. (After successful completion of any existing deficiency, they may petition their dean for a change of major.)

Admission to Specific Academic Programs

Admission to the college does not necessarily admit a student to all programs. Prerequisites are required for admission to the following curricula:

A. ENGINEERING, COMPUTER SCIENCE: two units of algebra, one unit of plane geometry, and one unit of trigonometry (or advanced math).

B. CHEMISTRY, AND MATHEMATICS: two units of algebra, one unit of plane geometry, and one unit of advanced math.

C. ENGINEERING TECHNOLOGY: The Engineering Technology programs are open admission programs. It is recommended that students take at least one unit of algebra, one unit of plane geometry, and one-half unit of trigonometry. Prospective students are evaluated to determine the appropriate math and English entry levels. Students who lack sufficient background in these topics to be successful in the prescribed college-level courses will be given an opportunity to enroll in pre-technology mathematics courses.

D. NURSING: Nursing candidates need two units of mathematics (Algebra I and higher), two units of laboratory science (must include chemistry). Because of limited enrollment, nursing candidates are selected by a special committee. Students with a high school average of B or higher and/or an ACT composite score of 20 or higher and/or a SAT composite score of 950 or higher will be given priority by the admission committee. All admission materials must be received by the Admission Office by the January 31 deadline for Fall admission.

E. DENTAL HYGIENE: The dental hygiene program is a limited enrollment program which admits one class each fall semester. All admission materials must be received by the Admission Office by the January 31 deadline for Fall admission. Admission requirements include the following:

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- (1) ACT composite (or SAT equivalent composite score 950) score of 20 or better. Individuals who took this test prior to October 1, 1989 may meet this requirement with composite ACT score of 18 or better.
- (2) High school grade point average of 3.0 or better on a 4.00 scale. Individuals who have completed high school requirements via GED must have a score of 40 on each of the GED tests or an average score of 45.
- (3) Have completed one unit of high school or college algebra. If the individual's math score on the ACT is 17 or less, then the individual must take and pass an elementary college math course.
- (4) Have completed and passed with letter grade of "B" or higher, a minimum of 2 high school science courses including Chemistry.

Or

Students whose ACT scores do not meet the above outlined criteria may be considered for admission to the dental hygiene program by meeting the following requirements:

- (1) Have completed 12 hours college credit with a minimum grade of "C" in each course at an accredited institution of higher learning within the past five years. These courses must include Chemistry and Biology. (Development or remedial courses will not be considered).
- (2) Have completed one unit of high school or college algebra. If the individual's math score on the enhanced ACT is 17 or less, then the individual must take and pass an elementary college math course.
- (3) Have completed requirements for a high school diploma or met GED requirements (score of 40 on each test or achieved an average score of 45).

F. RESPIRATORY THERAPY: The associate of science degree program in Respiratory Therapy is a cooperative program offered by Carver Career and Technical Education Center in Malden West Virginia and the CTC at WVU Tech. It is a limited enrollment program which admits one class of students each fall semester. All admission materials must be received by the Admission Office by the January 31 deadline for Fall admission.

Admission requirements include the following:

- (1) Graduation with a high school diploma or GED.
- (2) Successful completion of the Psychological Services Bureau of Health and Occupations entrance examination and a personal interview (conducted by Carver Career and Technical Education Center. Contact Carver at (304) 348-1965 for test dates and location).
- (3) ACT composite (or SAT composite 950) score of 20 or better. Individuals who took this test prior to October 1, 1989, may meet this requirement with composite score of 18 or better. ACT score of 18 or better is required in the English and reading areas and 17 or better in Math.
- (4) Two units of high school or college math courses: Algebra I and/or higher with a "C" or better.
- (5) Two lab sciences in high school or college, one of which must be chemistry, with a "C" or better. Other lab sciences preferred: biology or physics.

Or

Students whose ACT scores do not meet the above outlined criteria may be considered for admission to the programs by successfully completing:

(1) Successful completion of the Psychological Services Bureau of Health and Occupations entrance examination and a personal interview (conducted by CCTEC).

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- (2) Twelve hours of college credit (with a minimum grade of a "C" in each course) from an accredited institution of higher learning within the past five years have a minimum overall college GPA of 2.0. These courses must include chemistry and/or biology. (Developmental or remedial courses will not be considered.)
- (3) One unit of high school or college algebra with a grade of "C" or better. If the individual's math score on the ACT is less than 17, MATH 030 or its equivalent must be taken and passed with a grade of "C" or better.

Submission of a completed physical examination form is required prior to the start of classes. Prospective students are encouraged to first contact Carver Career and Technical Education Center no later than December 15 to arrange to take the Psychological Services Bureau of Health and Occupations entrance examination. Call (304) 348-1965 or write Respiratory Therapy Director, Carver Career and Technical Education Center, 4799 Midland Drive, Charleston, WV 25306.

American College Test (ACT)

Entering freshmen at WVU Tech must take the American College Test (ACT) or the Scholastic Aptitude Test (SAT) and have scores sent directly to Tech before admission is approved. Students entering the CTC at WVU Tech may take the ACT, SAT, Accuplacer or Compass Test for placement purposes.

*Placement in English and Mathematics courses for both institutions is based on standardized test scores, placement examinations, and academic history.

ACT and SAT are given at designated centers throughout the United States. Information bulletins and registration forms for the ACT and the SAT are available in the high school or by writing to American College Testing Program, Box 168, Iowa City, Iowa 52240. For information on the SAT test write to Educational Testing Service, Princeton, NJ 08541.

The Accuplacer or Residual Compass Test is given at the CTC at WVU Tech on an asneeded basis.

Admission of Transfer Students

Transfer students are accepted for each semester or summer term. One month prior to a registration period, the student must be accepted for admission. Documents required are as follows:

- 1. Application for admission
- 2. Official transcript from each college attended
- 3. ACT/SAT test scores sent directly from ACT or SAT
- 4. If the student has earned less than 30 semester hours, an official copy of the high school transcript will be required.

Leonard C. Nelson College of Engineering

Transfer students will be considered by the College of Engineering Admissions Committee on a space available basis if they meet the following criteria:

- 1. Have a minimum grade point average of 2.00 overall and in professional courses (math, physics, chemistry and engineering).
- 2. Have completed MATH-126 College Algebra and MATH-128 Trigonometry or equivalent with a grade of C or better.
- 3. Have completed at least 30 hours of college level work. Applicants with less than 30

hours can be considered under the policy governing high school graduates.

*Students who wish to pursue a career in engineering or computer science but who do not meet the above criteria can be admitted to the Pre-engineering Program for one year while becoming eligible.

College of Business, Humanities, and Sciences

Transfer students may be admitted in the following three ways:

- 1. **In good standing.** A transfer student must present a cumulative grade average of C (2.00) or higher to be accepted in good standing.
- 2. **On academic probation**. A transfer student must have a cumulative average as indicated below to be admitted on academic probation:
 - 1-30 semester hours completed
- 1.70 average required
- 31-60 semester hours completed
- 1.85 average required 1.90 average required
- 61-90 semester hours completed 91 and above hours completed
 - 1.95 average required
- **3. On academic probation by special committee action.** A transfer student with an average less than indicated above may be accepted by committee action if circumstances justify special consideration. The student shall prepare a statement to send with the application indicating pertinent data as to why an exception is justified.

Community and Technical College at WVU Tech

Transfer students may be admitted in the following two ways:

- 1. **In good standing.** A transfer student must present a cumulative grade average of C (2.0) or higher to be accepted in good standing.
- 2. **On academic probation.** A transfer student will be accepted into the Community and Technical College at WVU Tech regardless of grade point average, provided the student is not suspended from any other institution.

All credits, grades, and quality points shall be entered on the permanent record card of transfer students. D grades will be accepted from all accredited four-year and community colleges. Students transferring from non-accredited colleges will receive credit only for those courses in which a grade of C or higher has been earned. In sequence courses, however, a D grade will be accepted if followed by a grade of C or higher.

Evaluation of transfer credits will be approved by the Registrar.

Students with less than 30 transfer credits must take orientation or freshman seminar courses designated within the academic program. The transfer student must fulfill the graduation requirements of the college.

Evaluation of Transfer Credits

All credits, grades and quality points shall be entered on the permanent record card of transfer students. D grades will be accepted from all accredited four year and community colleges. Students transferring from non-accredited colleges will receive credit only for those courses in which a grade of C or higher has been earned. In sequence courses, however, a D grade will be accepted if followed by a grade of C or higher.

Up to seventy-two semester hours of college-parallel courses will be accepted from accredited junior or community colleges or those under the West Virginia system of higher education. If the college is not regionally accredited but has approved status, only 64 hours will be accepted.

Evaluation of transfer credits will be approved by the Registrar.

The transfer student 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 even though transfer credits are evaluated as comparable to 300 and 400 level courses at WVU Tech. Students with less than 30 transfer credits must take orientation.

Formal transfer agreements with other institutions have been developed for the plus-two baccalaureate degree engineering technology and industrial technology programs. Over seventy transfer guides identify transferability on a course-by-course basis for various associate degree programs at these institutions. The institutions for which transfer agreements are in place include: Belmont Technical College (OH), Dabney S. Lancaster Community College (VA), Hocking Technical College (OH), Jefferson Community College (OH), Marshall Community & Technical College (WV), New River Community College (VA), Southern West Virginia Community & Technical College (WV), Southwest Virginia Community College (VA), Washington State Community College (OH), West Virginia Northern Community College (WV), West Virginia State Community & Technical College (WV), and West Virginia University-Parkersburg (WV).

Admission by GED Test

The Community and Technical College at WVU Tech will admit students who are not high school graduates if they have a General Educational Development (GED) diploma. To be approved for admission, an applicant must file an application and have an official copy of the GED transcript sent to the Office of Admissions. If you received a GED in West Virginia, you may request a GED Release of Information Form by calling the WV Department of Education at (304) 558-2681.

Advanced Admission of High School Juniors and Seniors (Part Time)

Students may earn up to 12 semester hours toward a degree at this college prior to high school graduation. To be eligible for advanced admission, a student must (1) complete an application for advanced admission; (2) submit a high school transcript and ACT or SAT scores; (3) have completed the sophomore year of high school; (4) have earned a minimum average of B (3.00) for all high school courses attempted; and (5) be recommended by the school guidance counselor of the high school attended.

Students selected for advanced admission may enroll for any freshman level class upon approval of the Registrar. Juniors may enroll during the summer session. Seniors may enroll during the regular school year, but their classes will be limited to those that do not interfere with regularly scheduled high school subjects.

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.

Cost of tuition and fees will be the same as those for regular college students.

Advanced Admission of High School Seniors Full Time

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

program, a student must (1) complete an application for advanced admission as a full-time student; (2) submit a high school transcript and ACT or SAT test scores; (3) have completed the junior year of high school; (4) have earned a minimum average of B (3.000) for all high school courses attempted; (5) be recommended by the high school guidance courselor of the high school attended; and (6) be approved for advanced admission as a full-time student by the principal of the high school attended.

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.

Cost of tuition and fees will be the same as those for regular college students.

Other Opportunities

College credit may be obtained by students while attending high school through three options: dual credit courses, articulation agreements, and Tech Prep EDGE courses. Agreements are in place with high schools throughout the region. For more information, contact the high school counselor or the Office of Admissions.

Admission of International Students

International students applying for undergraduate admission must have their completed applications on file at least four months prior to their intended date of enrollment. Inquiries and application should be addressed to:

Director of Admissions and Recruitment

Box 80 Old Main

WVU Tech/CTC at WVU Tech

Montgomery, West Virginia 25136 USA

Students applying should have completed the equivalent of a secondary education with higher than average grades. The

"Test of English as a Foreign Language" is recommended for all students with a native language other than English. A score of 500 or above on the paper-based TOEFL or 173 on the computer-based TOEFL is usually considered adequate for admission. Applications for this test should be addressed to:

TOEFL Educational Test Service Princeton, New Jersey 08540 USA

All documents received by the college in connection with such applications for admission become the property of the college. Under no circumstance will they 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 may be destroyed after one year.

Because WVU Tech or the CTC at WVU Tech offer no elementary studies in English as a foreign language, only students with English proficiency are admitted. The students may be given a conditional acceptance provided they submit a TOEFL test score of at least 500.

To be admitted, an international student must furnish a certificate of finance showing the ability to finance the entire cost of an education at WVU Tech. It is estimated that each student will need a minimum of \$13,500 for an academic year of two semesters and at least \$4,000 for the summer months of May, June, July, and August.

Auditing Courses

Any student wishing to audit a class must notify the Registrar of that intention during regular or late registration. No grades or credit are given; nor is the student required to take examinations.

Readmission

Students in good standing who return to college after an absence of one or more semesters, not including the summer term, must apply for readmission.

A WVU Tech student suspended for one semester for academic reasons may be readmitted after at least one semester has elapsed by applying for readmission. Readmission to the college does not automatically mean readmission to a previous program.

A student given a second academic suspension is usually not readmitted. However, the student may petition the Committee on Classification and Grades for readmission. The Committee will decide whether the student should return on the basis of academic ability, character, circumstances, and motivation. The student should present evidence of a change in circumstances or conditions which will support the application for readmission. If the Committee approves readmission, the student will return on academic probation and under whatever special circumstances the Committee may deem advisable. Readmission to the college does not automatically mean readmission to a previous program.

The Special Student

An individual who wishes to take courses, but not for a degree or certification, is a nonmatriculant or special student and may register only as a part-time student, taking fewer than 12 hours of course credit in any semester. A special student who has attempted a maximum of 12 credit hours must apply for admission as a degree candidate by filing full credentials with the Office of Admissions and Records.. An overall grade point average of 2.00 or higher is required for admission.

The special student may also enroll as an auditor. Auditors take no examinations and receive no grades or credits for courses audited. A student may not request credit by examination for an audited course.

The Transient Student

A student wishing to take courses to be transferred to another college may do so, but must present, at registration, an official transient student permit from the college accepting the course credit. This permit must include the number of semester hours which the student is permitted to complete.

A WVU Tech or CTC at WVU Tech student who wishes to enroll at another college as a transient student must have prior approval of the appropriate advisor, dean, and the Registrar. The required form is available in the Office of the Registrar and Records.

The Veteran Student

WVU Tech and the CTC at WVU Tech are 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 Veterans' Affairs Office, located on the 3rd floor of the Vining Library, 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 Registrar's Office. The student must also officially apply for WVU Tech or CTC at WVU Tech admission and select an 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.

It is the student's responsibility to insure that all tuition and fees are paid. 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. 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 form the Veterans' Affairs Office and U.S. Department of Veterans Affairs or appropriate Guard or Reserve Unit. to being certified for receiving educational benefits for the semester.

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 and any students not following these requirements may lose their benefits.

All forms necessary for educational benefits are available in the Veterans' Affairs Office, 3rd Floor Vining Library – Phone 304.442.3853 – FAX 304.442.3090 – E-mail:– <u>Sid.Cooper@mail.wvu.edu</u>.

Registration

A registration period is provided for each semester and summer term as specified in the academic calendar. No registration is considered complete until tuition and fees are paid in full. The class schedule may be found on the internet www.wvutech.edu.

Detailed instructions for registration are distributed prior to the dates specified. Students are expected to register on the dates specified. An exception may be granted under rare circumstances and then only when there is evidence that the student has a reasonable opportunity to complete successfully all course work. The president or a designee must approve the exception with the evidence supporting the decision documented and held on file.

The first two class meetings shall be considered the regular registration period for nontraditional students registering for evening, Saturday, off-campus, extension and other special classes. In addition, a late registration period may be established which shall not exceed the third and fourth class meetings. A late registration fee shall be imposed on all late registrants.

Counseling Services

The Counseling Office addresses student needs through personal counseling, academic counseling for students experiencing difficulty in meeting the demands of college life, and career counseling, as well as career testing, and educational outreach programs which assist in preventing any problems that may interfere with personal growth and development (i.e., alcohol abuse, substance abuse, eating disorders, stress, relationship issues, sexual assault/ abuse, date rape, poor time management skills, etc.)

The average college student experiences much stress and undergoes many changes as he or she grows and develops. This developmental process involves issues which include, but are not limited to, self-image, personal and societal values, relationships, decision-making skills, cultural diversity, sexual preferences, independence, time and stress management skills as well as the pressure to succeed. Many students experience homesickness, loneliness, anxiety, career concerns, and academic adjustments. Oftentimes, previously undetected learning disabilities will manifest once the student enters college.

Individual and group counseling sessions are available through the Counseling Office. Students receive assistance in addressing their issues and/or concerns. Workshops are offered regularly on topics such as Stress Management, Time Management, Study Skills, Assertiveness Skills, Healthy Relationships, Clear Communication Techniques, and Conflict Resolution. Diagnostic and career testing are available.

Counseling Service is also available to assist students with special concerns such as thoughts of suicide, alcohol abuse, substance abuse, eating disorders, depression, co-dependence, divorce learning disabilities, detection and comprehension of personal learning styles, etc. Various support groups are available including Alcoholics Anonymous, Narcotics Anonymous, and Eating Disorders. Although students are encouraged to deal with any concern before it reaches a crisis stage, the counseling staff is trained in crisis intervention. Contact the Dean of Student Development at 442-3158.

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EXPENSES/REFUNDS

Expenses

A schedule of expenses may be obtained from the Cashiers' Office. Expenses may include tuition, room, board, books, student fees, and laboratory fees.

Methods of Paying College Costs

The tuition, fees, and one-third of the room and board charges are due to the cashier during the first week of class. Students must make one-third payments for the two months following registration. All charges must be paid in full to the cashier by midterm. The college also offers private companies' payment plans.

The institution's will make every effort to provide financial assistance to eligible students. However, if students and their parents fail to provide the necessary information in a timely manner, the institutions take no responsibility for deferring payment of fees.

Payment may be made by cash, postal money order, MasterCard, Visa and American Express, and Discover credit cards or approved personal check made payable to West Virginia University Institute of Technology or the CTC at WVU Tech for the exact amount of the obligation. If a personal check is returned for lack of sufficient funds, it must be redeemed in cash before the last regular registration date in order for the student to register normally. If the check is redeemed during the class days designated as late registration days, the late registration fee must be paid. A fee of fifteen dollars is charged for each check that is returned.

Once a student has written a check which is returned for insufficient funds, that student's name is placed on a list. No checks will be accepted from that student for a period of six months. If a second check is returned for insufficient funds, only cash, money orders, or cashier's checks will be accepted and the student will be placed on a permanent list. If a check is returned because of a bank error that can be proven, a student's name will be dropped from the list.

Registration is not complete until all obligations to the college are paid. Failure to meet payments when they are due will result in suspension from classes until payment is made. The Registrar cannot release the academic records of any student who is financially obligated to the college for any reason.

Refund of Tuition and Fees

To withdraw officially from college, the student must apply to the cashier's office for a partial refund of tuition, activity fee, and general course fee. A withdrawal form, which will require the signature of several college officials, must be obtained from the Registrar's Office Room 210, Old Main. The date of official withdrawal in the registrar's office will determine the amount of refund due the student. An irregular withdrawal will cancel a refund.

Refunds will be made as soon as possible after collection of fees is complete.

Students who officially withdraw from any college or university under the jurisdiction of the Higher Education Policy Commission shall receive a refund of regular fees in accordance with the following schedule, adopted on May 5, 1994.

1. Academic Year (Semester) Amount of Refund	
During the first and second weeks	90%
During the third and fourth weeks	70%
During the fifth and sixth weeks	50%
Beginning with the seventh week	No Refund

2. Summer Terms and Non-Traditional Periods Refunds for summer sessions and nontraditional periods shall be established based upon the refund rate for the academic year and calculated using the following schedule.

Term	Refund
During the first 13% of the term	
From 14% to 25% of the term	
From 26% to 38% of the term	
After 38% of the term is completed	No Refund

Should the percentage calculation identify a partial day, the entire day should be included in the higher refund period.

Return of Title IV Refunds: Financial Aid recipients that withdraw from WVU Tech or the CTC at WVU Tech before 60% of the semester has been completed, may be required to repay a portion of the federal aid received. Repayments are based on the number of days a student has been enrolled in classes.

Refund of Room and Board

A resident who takes possession of an assigned residence hall space, and officially checks out in accordance with prescribed procedures may receive a refund. The basis for the refund is:

- (i) 25% forfeit of full room fees through the 7th day of each semester (including weekends).
- (ii) 50% forfeit of full room fees from the 8th through the 24th day of each semester (including weekends).
- (iii) 75% forfeit of full room fees from the 25th through the 50th day of each semester (including weekends); and
- (iv) No refund of residence hall room fees from the 51st day (including weekends) to the end of the semester. Board fees are refunded on a weekly pro-rated basis.

Disciplinary termination of this contract may result in forfeiture of all remaining prepaid residence hall fees.

In the event that the college is forced to close for any period of time due to severe weather or energy shortage, the Office of Residence Life reserves the right to determine the portion of the room and board fee, if any, to be refunded.

Financial Aid

The Financial Aid Office, located in the Welcome Center, provides assistance in the form of grants, scholarships, employment, and loans to over half of the student body. To receive any one type or combination of student aid, it is highly recommended that the applicant apply on January 1 or as soon as possible thereafter. The amount and combination of aid a student receives is determined through the processed* need analysis form listed below.

Types of Application

Free Application For Federal Student Aid- This form is used to determine eligibility for:

- 1. Federal Pell Grant
- 2. WV Higher Education Grant
- 3. Promise Scholarship
- 4. Federal Supplemental Educational Opportunity Grant (SEOG)
- 5. Federal College Work Study (CWS)
- 6. Federal Perkins Loan

7. Federal Stafford Loans

8. Higher Education Adult Part-Time Award

Applications are available in most financial aid and high school counselor offices in late November. You may also apply on line at: www.fafsa.ed.gov.

Application for Financial Aid - An institutional form is required from all students applying for any type of financial aid. Forms are available in the Financial Aid Offices.

Scholarship Application is not required for incoming freshmen. An application for currently enrolled students may be obtained by logging on to the Financial Aid website: *www.wvutech.edu* A listing of all scholarships are available in this catalog (see index).

Federal Stafford Loan Application- An electronic loan application will be created if you indicated an interest in student loans on your FAFSA. A master promissory note will be mailed to your home address. If you are a renewal applicant, and signed a master promissory note during a previous year, an electronic loan application will be created for you. You will not be required to sign another master promissory note.

Stafford Loan Entrance and Exit interviews are required for all loan applicants. Log on to *www.pheaa.org* and follow the instructions for entrance and exit interview requirements.

NOTE: Federal Tax Returns and W-2's may be required from applicants and dependent applicant parents. Parent(s) tax return(s) may also be required for independent students to verify their independence.

Students must be admitted to WVU Tech or the CTC at WVU Tech before awards are made.

Application Deadlines

While the recommended time to apply for aid is the first week in January, the following deadlines remain in effect when awarding funds.

Federal Pell Grant - The results from the Free Application for Federal Student Aid (FAFSA) must be received by the Financial Aid Office by the last day of the student's enrollment in a given academic term. For example, students enrolled in Fall 2006 classes must have completed the FAFSA by December 8, 2006.

WVHEG (WV Higher Education Grant) – March 1 - The Free Application For Federal Student Aid must be postmarked by the processor, by this date.

Promise Scholarship–First-year students must complete a common application online at www.wvapplycom by January 31 of the calendar year of enrollment. A FAFSA must be completed by March 1 of the calendar year of enrollment. For example, a student planning to enter college for the Fall 2006 - 2007 school term must file the common application by January 31, 2006 and the FAFSA application by March 1, 2006.

Campus Based Aid - April 1 – The Free Application for Federal Student Aid must be received by the processing center by this date. Need analysis's are received electronically by the Financial Aid Office. Applicants are awarded chronologically.

- Federal Perkins Loan

- Federal Supplemental Educational Opportunity Grant (SEOG)
- Federal College Work Study

Verification Process - The information required to verify or document the information on your application may include but is not limited to:

1. Income.

- 2. Federal income tax return with W-2's.
- 3. Household size.

4. Independent student status.

5. Family members enrolled in post-secondary education at least halftime.

6. Any untaxed income or benefits received.

7. Any unreimbursed medical and dental expenses paid by you.

Verification is a process mandated by law that requires schools to verify the accuracy of data reported on selected student aid applications. This data must be acceptable before disbursements can be made or Federal Stafford Loan applications can be certified.

Eligibility-In general, you are eligible for Federal aid if you meet the following requirements:

1. You are enrolled at least halftime as a regular student in an eligible program.

- 2. You are U.S. citizen or an eligible noncitizen.
- 3. You show that you have financial need.

4. You are making satisfactory progress in your course of study as determined by the Satisfactory Academic Progress Policy for Financial Aid.

5. You are not in default on a Federal Perkins Loan, Federal Stafford Loan, or Federal PLUS loan at any school.

6. You do 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.

Financial Need

Most federal student aid is awarded on the basis of financial need. Need is the difference between your cost of education (educational expenses such as tuition, fees, room, board, books, supplies, and other expenses) and an amount you and your family are expected to contribute toward your education. A standard formula used for all applicants determines this amount, which is called the Expected Family Contribution (EFC). If there is anything left over after subtracting the expected contribution from your cost of education, you are considered to have financial need. The information you provide on an aid application is used in determining your contribution. Factors such as income, assets, and benefits (for example, unemployment benefits or Social Security) are all considered in determining your need.

Transfer Students

Financial aid does not automatically follow a student who transfers to WVU Tech or the CTC at WVU Tech from another school. To continue receiving aid, the student should check with the financial aid administrator to find out what aid will be available and what steps to take. For example the student must:

1. Submit change of school information to the processing center using the FAFSA website.

- 2. Notify the state grant program of intent to transfer.
- 3. Submit academic transcripts from previous schools

Acceptance Procedure

An award letter will be sent to you after your financial aid is set up by the Financial Aid Office. If you wish to DECLINE any of the aid offered, please send a written notice to the Financial Aid Office, Welcome Center, WVU Tech/CTC at Tech, Montgomery, WV 25136 within FIVE days after receiving the notice. Any pending aid may not be available at registration. Students should make arrangements to pay the costs and be reimbursed at a later date. Some awards may have to be reduced so that the student remains within the Cost of Education (or Cost of Attendance) set up by the institution, as per Federal Regulations.

Student Information

The student should know:

1. What financial assistance is available, including information on all federal, state and institutional financial aid programs.

- 2. The deadlines for submitting applications for each of the financial aid programs available.
- 3. The cost of attending the institution and the school's refund policy.
- 4. The criteria used by the institution to select financial aid recipients.
- 5. How the school determines financial need. This process includes how costs for tuition and fees, room and board, travel, books and supplies, personal and miscellaneous expenses, etc., are considered in a student's budget.
- 6. What resources (such as parental contribution, other financial aid, your assets, etc.) are considered in the calculation of student need.
- 7. How much of the financial need, as determined by the situation, has been met.
- 8. How to request from the Financial Aid Office an explanation of the various programs in the student aid package. A student may request reconsideration of the award received.
- 9. What portion of the financial aid received must be repaid, and what portion is grant aid. If the aid is a loan, the student should know the interest rate, the total amount that must be repaid, the repayment procedures, the length of time for repayment of the loan, and when repayment is to begin.
- 10. How the school determines satisfactory progress; and, what happens if the student is not progressing satisfactorily.

Student Responsibilities

- * The student has the responsibility to:
- 1. Review and consider all information about the school's program before enrolling.
- 2. Complete all application forms accurately and submit them on time to the right place.
- 3. Pay special attention to and accurately complete the application for student financial aid. (Errors can result in long delays in receiving financial aid. Intentional misreport of information on application forms for federal financial aid is a violation of law and is considered a criminal offense subject to penalties under the U. S. Criminal Code.)
- 4. Return all additional documentation, verification, corrections, and new information requested by either the financial aid office or the agency to which the application was submitted.
- 5. Read and understand all forms that are to be signed and keep copies of them.
- 6. Accept responsibility for all agreements signed.
- 7. Notify the lender of any changes in name, address, or school status.
- 8. Perform in a satisfactory manner the work agreed upon in accepting a College Work-Study award.
- 9. Know and comply with the deadlines for application or reapplication for aid.
- 10. Know and comply with the school's refund procedures.
- 11. Know and comply with the satisfactory academic progress policy for financial aid.

First Time Loan Borrowers

A Master Promissory Note (MPN) must be completed for all Federal Stafford Loans and Federal Perkins Loans. American Education Services (AES) will mail a Stafford Loan MPN to your home address. The student must complete, sign the note, and return it to AES in Harrisburg, PA. You may also go online at <u>www.aessuccess.org</u> and complete the MPN. Your federal PIN number is required to complete this process. **AES will not release disbursements until the MPN is received from the student**. Federal Perkins Loan MPN's may be completed in the Business Office, Old Main, Room 122.

First time parent loan borrowers must also complete a Master Promissory Note (MPN) for the Parent Loan for Undergraduate Students (PLUS). American Education Services (AES) will mail the parent a MPN to be completed. The parent may also go online to www.aessuccess.org and complete the required MPN. A federal PIN number for the parent is required to complete this process. **AES will not release any disbursements until the MPN is received from the student and/or parent.**

Entrance Loan Counseling

First time loan (Federal Stafford/Subsidized and Unsubsidized, Federal Perkins, Wood, and Sporn) borrowers are required to complete an Entrance Loan Counseling session. You may complete this process by logging on to <u>www.pheaa.org.</u> Under "Other Helpful Tools" you will find the Entrance Loan Counseling section. An electronic confirmation notice will be sent to the Financial Aid Office once you complete the counseling session. The purpose of the counseling session is to make the student aware of his/her rights and responsibilities as they relate to student loan borrowing. At the end of the counseling session the student will indicate if they are completing the session for Stafford and/or Perkins.

Exit Loan Counseling

Students that have received Federal Stafford (Subsidized/Unsubsidized), Perkins, Wood and Sporn Loans are required to attend Exit Loan Counseling before leaving campus, graduating, transferring or withdrawing.

With today's technology, you can do the Federal Stafford Loan Counseling on the Internet. Go to www.pheaa.org and under "Other Helpful Tools" you will find the Entrance and Exit Loan Counseling. Click on it, read the Disclaimer statement, scrolling to the bottom, and click on Exit Loan Counseling.

For the Federal Perkins, Wood, and Sporn loan, the exit loan counseling is done in the Business Office, Room 122 of the Old Main Bldg. If you have questions concerning the Perkins, Wood, and Sporn you can call 304/442-3131.

If you do not complete the Exit Loan Counseling your records will be tagged. No transcripts will be released until we have the loan counseling on file. You must complete this in order for me to remove your tag on your record. If you have any questions, please feel free to contact the Financial Aid Office, Welcome Center or call at 304/442-3208.

Satisfactory Academic Progress: Standards for Maintaining Financial Aid Eligibility – WVU Tech and CTC Tech

The Higher Education act of 1965, as amended by Congress in 1980, mandates institutions of Higher Education to establish minimum standards of "satisfactory progress" for students receiving financial aid. WVU Tech and CTC Tech policy makes these standards applicable to the Federal Pell Grants, Federal Supplemental Educational Opportunity Grants, WV Higher Education Grants, Federal Perkins Loan, Federal Stafford Loans, Federal Parent Loans, Federal College Work-Study, and some institutionally award funds. Special Note: The state grant programs each have their own standards for academic progress.

Therefore, recipients are governed by both State and institutional policies.

Evaluation

The standards established by the Financial Aid Office, consistent with the federal student aid requirements, are stated below. **All three requirements must be met.** SAP includes:

1. Quantitative (number of courses completed divided by the number of courses attempted – this must be at least 75%);

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2. Qualitative (grade point average -2.0 or above); and

3. The 150% federal rule. See section **C** below.

The University's academic forgiveness policies (or rollback policies) do not apply to satisfactory academic progress standards for financial aid, according to Federal regulations.

Satisfactory Academic Progress (SAP) is evaluated at the end of spring semester. Students who do not meet the three standards listed above (quantitative, qualitative, and completion of the program or degree requirements within 150% of the time printed in the catalog) are placed on probation for the next term in which they enroll. Students who withdraw from all classes, receive all failing grades, or all Incompletes in any semester are be subject to probation or suspension after that semester. See the SAP criteria explained below.

A. Students are required to earn at least 75% of the credit hours for which they enroll during each term. Full-time students are governed by the following chart.

SEMESTER HOURS ENROLLED:	18	17	16	15	14	13	12
MINIMUM TO EARN:	13	13	12	12	11	10	9

Special Note: Earning the minimum hours each term may not allow for completion of a degree within the maximum allotted time frame for aid of 150% (3 years for an Associate Degree, 6 years for the first Baccalaureate Degree). See **B**. below for further information.

Part-time students are governed by the following chart:

SEMESTER HOURS ENROLLED:	11	10	9	8	7	6 or less
MINIMUM TO EARN:	9	8	7	6	6	all hours

- **B.** Students must maintain a grade point average of 2.0 (C) overall. This does not necessarily mean that each student must make a 2.0 average for each semester. However, falling below the required GPA will make it more difficult in subsequent semesters to bring the overall GPA up to a 2.0 average.
- C. Satisfactory Academic Progress requires a student pursuing an Associate Degree to complete the requirements within three (3) academic years or 150% of the time printed in this catalog for each major. Those students pursuing a Baccalaureate Degree must complete the requirements within 6 academic years. Students pursuing an Associate Degree must complete the requirements within 3 academic years. Financial Aid will be terminated for students who do not meet this time frame.
- Grades of W (withdrawal), F (failure), and I (incomplete) are counted as hours attempted but not earned. Incoming transfer students are governed by the above criteria including grades received from all courses at any institution. During the first two years of enrollment, aid will be denied (suspended) after two or more consecutive semesters on Academic Probation. After two years of enrollment, aid will be denied (suspended) if the student's overall GPA drops below 2.0 and the completion rate drops below 75%. A student that has been placed on Financial Aid Suspension must bring the GPA requirement of 2.0 and completion rate of 75% up to required standards before financial aid can be reinstated. The student must request reinstatement in writing.

Graduate Students

The graduate student must earn at least 75% of the hours enrolled. Hours must be completed

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with a "C" grade or better. Aid may be awarded for a maximum of 6 semesters.

Termination

Failure to meet any of the above criteria for Satisfactory Academic Progress will result in suspension (termination) of financial aid (Pell, SEOG, Stafford Loan, Perkins Loan, Wood, WVHEG, and all scholarships) until SAP standards are met. Suspension of financial aid eligibility does not prohibit a student from enrollment at WVU Tech or CTC at WVU Tech using his or her own funds.

Appeals

Any student who is placed on financial aid suspension may submit a written appeal including documentation to:

WVU - Tech Director of Financial Aid Welcome Center Montgomery WV 25136

within 20 working days from the date of suspension. The Director of Financial Aid reviews each appeal and, if it meets federal requirements, presents it to the Loans, Grants and Scholarships Committee for a final decision. You may appeal Financial aid suspension only once. Undocumented appeals will be denied. The appeal process also ends with the Loans, Grants and Scholarships Committee. Some conditions for appealing suspension may include death in the immediate family, serious illness of the student or immediate family member, or natural disaster. Items to include in the letter of appeal: the reason for lack of progress, documentation supporting this reason or reasons, and plans for correcting this situation to ensure future success in college.

Reinstatement

Student aid will be reinstated for one semester with a minimum of 6 hours. All courses must be successfully completely with no withdrawals or incompletes. At the end of this semester, grades and completion rate will be monitored to ensure continued improvement.

IT IS THE STUDENT'S RESPONSIBILITY TO REVIEW AND CONSIDER THE REQUIREMENTS FOR MAKING AND MAINTAINING SATISFACTORY ACADEMIC PROGRESS FOR FINANCIAL AID ELIGIBILITY.

Policy revisions are effective July 1, 2006

Types of Financial Aid Available

Scholarships

Scholarships designed for students in particular areas of study are awarded according to the criteria stipulated by the scholarship donors. Some scholarships are for one year only; others are renewable by reapplying each academic year as provided for in the scholarship criteria. To be considered, FAFSA must be completed by March 1 and an application for admission must be postmarked by April 1.

Presidential Scholarship – 3.5 GPA and 25 ACT. Award is valued at \$2,500 for out-of-state students and \$1500 for in-state students. Scholarship is for first time freshmen only.

Golden Bear Scholarship – 3.0 GPA and 21 ACT. Award is valued at \$2000 for out-of-state students and \$1000 for in-state students. Scholarship is for first time freshmen only.

Golden Bear Transfer Scholarship - Transfer 30 or more college hours from an accredited

institution with a 3.25 cumulative GPA. Apply for and enroll in a bachelor's degree program. Award is worth \$1,000 annually and is renewable for six semesters with a cumulative GPA of 3.25. Applications accepted through the first day of classes. Current students are ineligible.

Undergraduate Scholarship–A tuition waiver worth the actual cost of tuition each semester for an academic year. West Virginia residents receive priority. This scholarship may be based on financial need, exceptional academic ability, or outstanding ability in athletics, choir, or band. Needy applicants are given first priority. A recipient must reapply annually and may receive the scholarship for up to eight consecutive semesters.

To maintain the scholarship (a) for academic ability, the recipient must maintain at least a 2.5 overall average. (b) for outstanding ability, in specific areas rules established by the awarding department and/or the financial aid director.

Enrique and Sallie Aguilar Endowed Scholarship–Established by Enrique and Sallie Aguilar to benefit students majoring in engineering, computer science, or nursing. The recipient must be a full-time student at WVU Tech; must have a high school GPA of 2.5; the highest preference, all other things being equal, if the recipient graduated from Fayette County, WV high school and/or is a WV resident.

Alberta Ray Anderson Scholarship–Dr. Anderson provides an annual donation to support two baccalaureate and/or associate degree business scholarships per year. Eligibility requirements: must be an office technology or business management major entering his/her sophomore year; have a 2.7 GPA; must demonstrate an interest in seeking employment upon graduation in business; must have proven aptitude for chosen specialization.

Joan Armbruster Award for Excellence in End-of-Life Nursing Care–Award is for a Senior Nursing Student based on genuine concern for terminally ill patients.

Athletic Grants-In-Aid–Scholarships for athletic ability. Mr. and Mrs. A. W. Orndorff and J. O. Lively have been the major contributors in providing educational funding to outstanding athletes. In addition, funds are donated by the Tech Scholarship Fund, Inc. Grant recipients are selected by the Director of Athletics.

Dale C. Bailey Memorial Scholarship–Entering freshman who shall have an outstanding academic record in high school and a 20 or better ACT score, and be a WV resident. The scholarship may be retained for up to eight semesters as long as the recipient maintains a minimum of 2.5 GPA.

Band Scholarship–Based on an audition for faculty member or members; personal interview with faculty; application which includes high school grade point average and class standing; letter of reference from director.

Mike Barrett Endowed Scholarship–Established in February 1994 to honor professional basketball player Mike Barrett. This scholarship will be given out to outstanding basketball players.

Biology Scholarship–Must be full-time student and a Biology major to receive and remain eligible for this award. Student must have sophomore status with a minimum 32 credit hours and a GPA of 3.0 in math, science, English, and computer courses. Exception is award to freshman planning to enter the second semester, if he/she has an overall GPA of 2.75. Must have financial need as verified by Financial Aid Office. Must be sponsored by Biology faculty member to be considered.

Bryan Bills Memorial Scholarship–Established following the death of Bryan Lee Bills a former Tech student who earned a bachelor of science in civil engineering. Criteria: must be a civil engineering major; WV resident; active member of ASCE; must have junior standing; must have highest grade point average of eligible candidates; in case of a tie, the award will be

made on basis of financial need.

William A. Bragg Scholarship–Created by Montgomery High School graduates to honor Mr. Bragg who served as high school principal for many years. Recipient must be a graduate of Valley High School or a child of a Montgomery High School graduate from the years 1948-69; have a 2.7 or better GPA; full-time student enrolled in a degree program at Tech; favorable recommendations from high school teacher, principal, and/or Counselor; financial need; in case of a tie, preference shall be given to applicants with an ancestor who attended Montgomery High School. The scholarship may continue for eight consecutive semesters, if a 2.7 or better GPA is maintained as a full-time Tech student.

Lala M. Breeden Scholarship–To qualify, applicants must enroll in a two-year or four year nursing program in Tech; be high school graduates from Fayette, Kanawha, Clay, or Raleigh County; must have attained and maintain a 2.5 GPA; and show evidence of financial need.

Mrs. Rex A. (Lessie D.) Burdette Scholarship–Mrs. Burdette contributed funds to permanently endow a scholarship at her alma mater New River State College (now WVU Tech) for a deserving full-time student.

Business Scholarships-The College of Business, Humanities and Science Scholarship will be awarded to residents of Cabin Creek area who enroll in programs offered by the department of Management and Computer Information Systems and/or the Department of Accounting and Finance. A minimum high school grade point average of 3.0 and an ACT Composite score of at least 21.

C&T Scholarship–General scholarship fund for students in the Community and Technical College. Selected by College of C&T Scholarship Committee.

Bill and Brenda Casto Civil Engineering Technology Scholarship–Textbook scholarship awarded to a full-time incoming freshman who is a citizen of the United States. Preference given to veterans. Can be renewed up to 4 years, so long as 2.5 GPA maintained and a full-time student in the Civil Engineering Technology and/or BS Engineering Technology-Civil program.

Cavalier/Nichols Family Endowed Scholarship–Established by Dr. Anne Cavalier, Vice President for Institutional Advancement and professor and her husband Dr. Fred Cavalier, professor of Mathematics, to honor their parents.

Sewell Preston Champe Endowed Scholarship–Must be a senior with minimum 90 credit hours at beginning of fall semester of senior year. Student agrees in writing that he/she will matriculate into a Ph.D. program in biology, chemistry, or physics, within one year of graduation from Tech. If student does not matriculate into such a program within that year, the scholarship award designation is changed to a loan, which shall be repaid in at least three calendar years commencing one year after student's Tech graduation.

Harvey R. Chapman Memorial Scholarship–Established in 1998 by his widow, Sharon L. Chapman, in memory of Harvey R. Chapman. The recipient shall be a WV resident; be a sophomore or junior with at least 3 semesters remaining, enrolled in 4-year Civil Engineering program. Financial need may be given preference in event of multiple finalists.

Chemical Engineering Scholarship–Must meet College of Engineering admission requirements based on high school record, math and composite ACT scores, and special achievements; must be registered as full-time chemical engineering major.

Jim Clark Memorial Scholarship–The recipient shall be an entering freshman majoring in mathematics. The scholarship may be retained for up to eight semesters as long as a 2.0 GPA is maintained.

Clonch Family Scholarship–Established by the Clonch family and Cannelton Industries in recognition of Naaman Clonch. Scholarship recipients shall have completed at least 30 semester hours of college credit; have in state status with preference to Fayette, Nicholas, Clay, Kanawha, Boone, and Raleigh Counties have a GPA of at least 2.5.

College of Business and Economics Entrepreneurial Scholarships–Established to encourage study in programs offered by the Department of Management and Computer Information Systems and/or Accounting and Finance. A minimum high school grade point average of 3.0 and an ACT Composite Score of at least 21.

Ethel L. Crandall Memorial Scholarship–The recipient must be a Gauley Bridge High School graduate; attend WVU Tech; 2.5 overall high school GPA. The award will be divided into two payments, with the payment for second semester being dependent on the student maintaining a 2.5 GPA.

A. Reed Davis Endowed Scholarship–Shall be used for tuition and fees. Recipient shall have residence in Pocahontas Co., WV, and have a college GPA of 2.5. Eligibility after freshman year. Financial need, as verified by Financial Aid Office, will be considered. Scholarship can be continued until graduation or four years so long as criteria continue to be met.

Carl DelSignore Scholarship–Provides tuition, fees, books, room and board for a dependent of Buffalo Coal Company employees who maintains a 2.0 GPA and continues to be a full-time student

E.E."Gene" Dillon Endowed Scholarship–In memory of 35-year Tech employee, his last position being Dean of Student Services. The award is for an outstanding sophomore with a minimum 3.5 GPA, must be enrolled full-time in a degree granting major and can be continued for three years if criteria continue to be met.

Donalson Engineering Endowed Scholarship–Engineering student, male or female, a native-born second generation West Virginian who attended four years and graduated from any high school in Raleigh, Fayette, Roane, or Putnam County, WV. Applicant must be fulltime student entering junior or senior year in Leonard C. Nelson College of Engineering. Must have a 2.5 GPA during freshman and sophomore year in any engineering program at Tech, and must maintain that GPA while maintaining scholarship. Must show financial need, with money being used for tuition only.

Dewey Wilson Hoye Memorial Scholarship–Recipient shall be full-time student, with first preference to be given to students who are residents of Raleigh County, WV, and subsequent preference given to resident of other WV counties and residents of Washington County, OH. Scholarship recipients shall be selected on the basis of: Declared interest in majoring in the fields of Industrial Relations, Human Resources, Engineering, or Nursing, with at least two semesters or one full year of college level work having been successfully completed. A grade point average of 2.5 or better is required. A demonstration of a strong work ethic, documented by involvement in part-time work, extra-curricular, community service, or other volunteer activities. Applications are available in the Financial Aid Office at WVU Tech. Application deadline is April 1st.

Ralph and Jo Eary Printing Scholarship–Applicant must be a full-time student currently enrolled in the Printing Management program at WVU Tech. A 3.0 overall GPA is required. Scholarship candidates are judged on the basis of their high school/college academic records; rank in class; leadership; and financial need. Contact the Printing Department.

Engineering Scholarship–Must meet College of Engineering admission requirements based on high school record, math and composite ACT scores, and special achievement, must be entering freshman registered as full-time engineering major; award dispensed in two equal parts for two consecutive semesters (freshman year only); must maintain 2.5 GPA to receive second semester award.

Charles Bowling Scholarship–Established by the Kanawha Valley Mining Institute for Engineering Technology students who are at least sophomores with a 2.7, or better, GPA. They must have a demonstrated interest in the mining industry and a proven aptitude in laboratory settings.

Dr. Dana R. and Ethel R. Ervin Endowed Scholarship and Educational Fund–Must be a graduate of Riverside High School, Quincy, WV, or successor high school serving Cabin Creek geographic area; be enrolled as full-time student in 4-year degree program. Must have a 3.0 minimum GPA and a composite ACT score of at least 18 and maintain a 3.0 GPA while at Tech. Secondary award criteria, if no one found from first region mentioned, be a graduate of Clay County, WV, high school or successor high school serving Clay County geographic area. If no one found from first and second regions mentioned, be a graduate of Kanawha or Fayette Counties. Scholarship can be used for tuition and institutional fees, required books, room and/or board. May continue receiving scholarship until graduation if all criteria continue to be met.

Kenneth Glen Evans Engineering Scholarship–Established by his daughter Rachel Evans to benefit a student in Mechanical Engineering. The recipient must be a WV resident; must maintain a 2.5 GPA; financial need; preferred 1st generation college student. The recipient can continue on scholarship as long as a 2.5 GPA is maintained.

F.O.E. #1040, Past Members Memorial—Can be used for tuition, fees, books, room, and board. Award is for an in-coming freshman with a high school GPA of at least 2.0 who has financial need. Scholarship can continue for 4 years, if recipient maintains a 2.0 GPA and financial need still exists. Must be enrolled in a degree granting major.

Fairchild Scholarship Fund–Will be granted to a student majoring in Electrical Engineering or Technology or Mechanical Engineering or Technology.

The Richard C. Flint Scholarships–A number of Flint Scholarships will be offered to students majoring in any of the baccalaureate fields in the Department of Social Sciences at WVU Tech. These include Health Services Administration, (B.S.), Industrial Relations & Human Resources, (B.S.) and Public Service Administration, (B.S.). There is no fixed amount on individual scholarships. This will be determined by need, and the amount of other assistance the student receives, but normally Flint Scholars will receive sufficient funds to cover tuition and fees. There is no fixed time frame for eligibility. Students may re-apply annually prior to February. Applications may be obtained from COBE 327 and must be submitted to the Greater Kanawha Valley Foundation (346-3620).

Anise Floyd Memorial Nursing Scholarship—The recipient must be a nursing student from a coal mining background, maintain a 2.0 GPA, and be a WV resident.

Nora Goad Endowed Scholarship—The recipient must be a full-time Tech student in a degree-granting program with financial need.

James and Elsie Grant Memorial Scholarship–Established by Mountaineer Gas Company/Energy Corporation of America in honor of the parents of Richard L. Grant, former President of Mountaineer Gas Company. Recipients must be an entering freshman enrolled in civil engineering or nursing; maintain a 3.0 GPA; be a U.S. citizen; be a WV or OH resident; must demonstrate leadership abilities through extracurricular involvement in academic and/ or civic related organizations. The scholarship may be retained for up to eight semesters, as long as recipients maintain a 3.0 GPA. Financial need will be considered as will community service. **Bobby Gunnoe Scholarship**–Based on financial need, graduate of George Washington High School, attend WVU Tech.

Hazelton Endowed Scholarship–Established Spring 1993 to honor Dr. Russell Hazelton, professor of Chemical Engineering 1967 to 1982. To be eligible a student must be entering the Chemical Engineering senior year the following fall (to be determined by the Chemical Engineering faculty); the award will be based primarily on academic performance, with financial need and other criteria to be used should there be no decisive winner.

Health Services Administration Degree Scholarships—With funds from a trust fund established with the Greater Kanawha Valley Foundation in the memory of Richard Flint, the Department of Social Sciences offers scholarships for students majoring in Health Services Administration. Applications are due prior to February 1 each year. Application forms are available in the Department of Social Sciences, 327 COBE.

Jackie Hoffman Award–Established by Dental Hygiene Department in memory of a former Tech student. Recipient will be graduating dental hygiene student with dedication and enthusiasm to the profession of dental hygiene; and genuine concern for patients' well-being.

Tommy Holbrook Scholarship–Funds donated in 1997 by Tommy L. Holbrook to support WVU Tech students. The recipient must maintain a 2.5 GPA; must participate in music organization. The scholarship will be given out as soon as endowment will be reached.

Holmes Safety Association Scholarship—The Holmes Safety Association Scholarship was established by the Upper Kanawha Valley Chapter in 1997 to provide Financial support (\$200) to a student from a mining family from Fayette, Kanawha, Clay or Nicholas County. Must be a full-time student in at least his/her sophomore year with a 2.7 GPA.

J.A.B. & Verna Veazey Holt Scholarship–Recipient shall be a full-time nursing major, have successfully completed at least 30 hours credit toward a nursing degree, be a WV resident from Kanawha, Fayette, Nicholas, Raleigh, or Clay County, and have a GPA of at least a 2.5 overall and maintained.

Industrial Relations and Human Resources Scholarship–With funds from a trust fund established with the Greater Kanawha Valley Foundation in the memory of Richard Flint, the Department of Social Sciences offers scholarships for students majoring in Industrial Relations and Human Resources. Applications are due prior to February 1 each year. Application forms are available in the Department of Social Sciences, 327 COBE.

K. C. Johnson Memorial Nursing Scholarship–Created with funds received from the estate of Kathleen Cawley Johnson for a nursing scholarship.

James Edward

"Eddie" Kenyon Memorial Scholarship–Must be an engineering major, enrolled fulltime, WV resident, minimal 2.5 GPA, which can be based on high school grades, or if already enrolled, must have overall 2.5 GPA. Scholarship can continue for as long as criteria are met, but for no longer than 4 years.

Kimley-Horn and Associates Scholarship–Funds donated by the Kimley-Horn and Associates, Inc. The recipient must be enrolled in a bachelor's degree or master's degree, preferably Master's degree in the Leonard C. Nelson College of Engineering; outstanding academic/leadership accomplishments (good GPA, actively involved in organizations, etc.); must be interested in going into consulting and pursuing registration; judged by peers/professor as a leader; must have good oral/written communication skills. The scholarship is not based on financial need.

Leonard R. and Farrell Kirk Computer Scholarship-Established by Ron Kirk, WVIT Alumnus, to honor his parents and to support the computer science program. Based on financial need; must be a full-time computer science major; WV resident; 2.0 average in high school (if entering freshman) or a 2.0 average at Tech; must maintain 2.0 GPA; \$250 per semester renewable up to eight semesters.

Knights of Columbus Scholarship–Scholarship for a child of an active Knights of Columbus member. Selected by Knights of Columbus.

Kraybill Family Endowed Scholarship–Created with funds contributed by Margaret A. Kraybill in 1993. Qualifying students shall be: a WV resident; entering freshmen with at least a 3.5 GPA from high school; enrolled full-time in the College of Business, Humanities and Sciences; and, all other things being equal, most qualified student based on academic scholarship. The scholarship can be continued for eight semesters as long as a 3.0 GPA is maintained.

Lady Bear's Basketball Scholars–Established in 1998 by Dr. Sharon Lord to benefit student participant in the Lady Bear's Basketball program at WVU Tech.

Laird Memorial Nurses' Alumnae Scholarship–Must be a nursing major, enrolled fulltime, have a 2.5 GPA if selected while still in high school, all things being equal, be a graduate from Fayette County, Raleigh County, or Upper Kanawha Valley high school, and be a WV resident. If all criteria continue to be met, the scholarship can be received until graduation. Student must have plans to remain in field of nursing at local hospial or seek employment in the State of WV for at least 2 years or pay back scholarship in 3 years. Student applicant must submit narrative telling why applicant is seeking education in nursing field and why financial assistance is needed.

Kelly S. Lynch Memorial Scholarship Fund Established during the Fall of 1996 in memory of Kelly S. Lynch a WVU Institute of Technology student. The recipient shall be entering Freshman and a graduate from a Raleigh County, West Virginia high school. The student must be enrolled as a full-time student and have financial need. The award will be given to the student applicant with the highest grade point average. Deadline for applications is May 1st. Applications may be obtained from the Financial Aid Office, Old Main, Room 321.

Master of Engineering Scholars–Funds donated by Columbia Gas Transmission Corporation to support scholarships for students in the Master of Engineering Program. Contact Dean of Engineering.

Alicia McCormick Endowed Memorial Scholarship–Established in 1998 by her family to benefit a student majoring in Health Service Administration, Public Service Administration, or a Social Science field. Qualifying students shall be: entering freshman with at least a 2.5 GPA from high school; enrolled full-time student at WVU Tech; and, all other things being equal, receive the highest preference, if graduated from Greenbrier County, WV high school and/or are single parent. Was awarded for the first time in fall of the year 2000.

The Betty McHale SHRM Scholarship–For an Industrial Relations/Human Resources or Business Management major with a minimum 2.5 GPA; must be an active member in the WVUIT chapter of SHRM.

H.M. and Virginia McSurley Endowed Scholarship–Established with funds donated by H.M. and Virginia McSurley for students enrolled in majors or minors of mechanical engineering, electrical engineering, mathematics, computer science, computer engineering or management and computer information systems; must maintain a 3.0 or better GPA; full-time enrolled at WVU Tech. Recipients who maintain their major (minor) in the stated fields, full-time status, and the required 3.0 GPA may continue on the scholarship for eight semesters.

Mellow Endowed Scholarship–Established Spring 1993 to honor Dr. Ernest Mellow, professor of Chemical Engineering 1967 to 1981. To be eligible a student must be entering the

Chemical Engineering junior year the following fall (to be determined by the Chemical Engineering faculty); the award will be based primarily on academic performance, with financial need and other criteria to be used should there be no decisive winner.

Gasperine Milo Mathematics Scholarship–Established in 1992 in honor of Gasperine Milo, Tech alumnus and former mathematics instructor 1946-1977. The recipient shall be an entering freshman maintaining a math major or minor for four years; born in WV or child of parents born in WV; received four years of high school education in Fayette County high school; maintained 3.0 or better GPA each year throughout high school; qualify for financial assistance. The scholarship may be retained for up to ten semesters as long as 3.0 GPA maintained as a full-time math major/minor at WVU Tech.

Richard Ridgeway Moore Memorial Scholarship–Eligible freshman must be enrolled full-time in an Engineering and/or Mathematics majors/minors. Recipient must have a 3.0 GPA from high school and scholarship can be maintained up to 4 years. No financial aid is required.

Music Scholarships—With funds donated by numerous private individuals, WVU Tech has several scholarships worth various amounts for students of superior instrumental or vocal ability.

"Jack" Neely Endowed Scholarship–Funds donated by his widow, Naomi Neely in memory of–"Jack" Neely, a mathematics graduate of New River State College. The recipient must be a mathematics majors or major in a program of study approved by the mathematics department; enrolled as full-time student at WVU Tech while actually receiving the scholarship; maintain a 2.5 GPA.

Barbara Nelson Memorial Scholarship—The recipient will be a freshman student in humanities, academically capable, and eligible for a two-semester award.

Nelson Endowed Scholarship–Established in honor of former Tech President Leonard C. Nelson. Scholarships for engineering majors based on College of Engineering entrance requirements and guidelines.

A. W. and Irene May Orndorff Scholarship–Scholarships for students who have financial need; are residents of Kanawha, Fayette, Clay, or Nicholas Counties; enter college with at least a 2.0 GPA from high school or an accredited college; maintain at least a 2.0 GPA while receiving scholarship. Recipients shall receive full tuition and fees.

Orndorff Freshman Scholarship–Established with funds donated by A.W. and Irene May Orndorff for entering freshman with preference to WV residents, with a 3.0 or better GPA, and a composite ACT score of at least 18. The award is for a maximum of two semesters and payment of the second semester is dependent on the recipient maintaining at least a 3.0 GPA as a full time student.

Wesley D. Patrick, PE Memorial Scholarship–Set up to recognize a mechanical engineering junior at WVU Tech, this individual must exhibit similar traits and characteristics of Wes Patrick, now deceased, must have a 3.0 GPA, be a WV native, and submit an essay.

James Perry Memorial Scholarship–Established with funds donated by Tech faculty and staff in memory of Mr. Perry, a Tech employee. Scholarship is to be used as a recruiting tool and awarded to a full-time minority student in a degree granting program.

Peters Creek Coal Association Scholarship–Established during the 1993-1994 academic year by the Peters Creek Coal Association. The recipient shall be a WV resident; entering freshman with a 2.5 GPA from high school; maintain a 2.5 GPA; full-time student at WVU Tech with majors in engineering, engineering technology, computer science, or business/related, and, and all other things being equal, preference will be given to students from families with

a coal mining background.

Phi Mu Gamma Scholarship–Established March 1992 with funds donated by Phi Mu Gamma, a national professional fine arts fraternity, to support a scholarship to be administered by the Creative Arts Department. Recipient must have a 3.0 or better GPA; be a full-time student; have financial need based on federal and state guidelines; and be a Creative Arts major (including art, drama, and music).

Larry Phillips Memorial Football Scholarship–In memory of former football player Larry Phillips, this scholarship will be awarded to an in-state, full-time student playing football while attending Tech. Be a graduate of a WV high school with a 3.00 GPA and must maintain that 3.00 GPA in order to continue being awarded the scholarship.

Pitsenberger Family Endowed Scholarship–For tuition, fees, books, and/or campus room and board. Two-and four-year majors in Office Technology Management, Business Management, or Business Technology/Banking. Must be a full-time student with C average. Everything being equal, financial need preferred. All else being equal, preference given to a Kanawha, Fayette, or Nicholas County resident. Renewable each year to the same recipient so long as criteria continue to be met.

Marjorie A. Poland Endowed Scholarship–Recipient must be a native-born of WV; enrolled full-time at WVU Tech; maintain a 2.5 GPA; graduated from a high school in WV; financial need.

Printing Tech/Mgmt Scholarship–Recipient must be an entering freshman printing major; based equally upon financial need and scholarship.

Public Service Administration Scholarships—With funds from a trust fund established with the Greater Kanawha Valley Foundation in the memory of Richard Flint, the Department of Social Sciences offers scholarships for students majoring in Public Service Administration. Applications are due prior to February 1 each year. Application forms are available in the Department of Social Sciences, 327 COBE.

Mitchell and Mosa Rashid Endowed Scholarship–Recipient shall be graduate from Charleston or Montgomery area high schools with a 3.0 GPA and shall major in Pre-Medicine/ Biology. All other criteria being equal, shall be awarded to recipient having greatest financial need. For an incoming freshman, one year only.

Robert and Buena Reynolds Memorial Scholarship–Must be a US citizen, a graduate or graduating from a high school in Fayette County, WV; have a GPA of at least 3.00; major in one of the degree programs offered by the College of Business, Humanities, and Sciences and be enrolled full-time. Scholarship may be continued for up to five years with a minimum GPA of 3.00

Rho Epsilon Beta Scholarship–Contributed by the fraternity for a student scholarship based on financial need; have sophomore, junior, or senior standing; have a 2.75 GPA; a WV resident.

Otis K. Rice Scholarship–Established in 1993 to honor Dr. Otis K. Rice, professor of History at WVU Tech. The recipient shall be a graduate of Riverside High School or from a high school in the traditional Cabin Creek District; have a 3.0 high school GPA and at least a composite ACT score of 18; be a full-time Tech student enrolled in a four year degree granting program; and all other criteria being equal, financial need will be considered.

The Euphene Richardson Scholarship–In memory of 1942 and 1943 business student at New River State (now WVU Tech). Recipient will be a deserving graduate of Greenbrier East High School, who has a minimum 2.0 GPA, and majoring in a degree-granting program contained in the College of Business, Humanities, & Sciences.

Jack and Constance Robertson Scholarship–Endowed scholarship awarded to in-state, full-time student beginning the junior or senior year in the field of Humanities with a GPA of at least 2.5 and with financial need.

Ruritan National Foundation Scholarship–Administered under the "Double Your Dollar Grant Program," with amount of grant being matched by Tech Foundation, Inc. Application must be submitted to Ruritan Foundation, with selection by local Ruritan Club being based on character, scholarship, academic promise and desire, financial need.

ROTC Scholarships–Multi-year scholarships are available to those students that are qualified to participate in the ROTC program. The program will enable the student to earn a commission as a Second Lieutenant in either the Active or Reserve components of the United States Army. Scholarship winners also receive a tax-free allowance up to \$1,000 each school year that the scholarship is in effect. ROTC scholarships pay for all academic expenses and are not based on financial need. Eligibility requirements and application periods are dependent upon the time period of the scholarship. Scholarship applications may be made through the Professor of Military Science, Room 6, Old Main, telephone: (304) 442-3265 or 768-6060.

Walter Schoonover Scholarship–Established in 1989 to honor Professor Walter B. Schoonover for his 34 years of service to the students and Tech. The recipient shall have at least a 3.25 GPA overall and in their accounting major; be an active member of the ALOT Club; participate in extra curricular or community activities; have senior standing in the semester in which the scholarship is to be effective; be a major in the BS accounting program.

Sterl F. Shinaberry Scholarship–Established Spring 1995. The recipient must be a nativeborn West Virginian, be entering as a full-time student at WVU Tech in a business major, including accounting, finance, economics, insurance or some other business program; must have a high school or college GPA of at least 2.5; from Pocahontas, McDowell, Raleigh, Kanawha, or Clay Counties; preference will be given to a graduate of Pocahontas County High School if there are any applications from that school provided they meet the other criteria; only in the event there are no qualified candidates from any of the designated counties can the scholarship be awarded to a student from some other county in WV; preference will be given to children of persons who have been employed for at least five years by Mr. Shinaberry during his legal career; and based on parents taxable income.

Simmons Scholarship–Established by family members honoring their parents, Alan M. and Evelyn G. Simmons. Recipient must have financial need; maintain at least a 2.5 or better GPA; be a WV resident; and all other criteria being nearly equal, preference will be given to the son or daughter of a coal miner.

Skaggs Memorial Scholarship–Established by the Kanawha River Plant of the Appalachian Power System to honor Henry C. Skaggs. The recipient must be a WV resident and a mechanical or electrical engineering student. The scholarship may be retained for up to eight semesters as long as recipient maintains a 3.0 GPA.–

Smyers Memorial Endowed Scholarship–Established with donations from the Smyers family and friends to support music scholarships. Recipient selection based on an audition for faculty members; personal interview; application which includes high school GPA and class standing; letter of reference from band director.

Eddie Solomon Endowed Scholarship–To be given to any basketball player as first preference, but other sports permitted. Must maintain a 2.5 GPA. Preference to West Virginia residents, although not required.

Sturgill-Reed Athletic Scholarship–Established by Sandy Huddleston and her siblings to honor their parents. The recipients shall be a football or basketball player; male or female;

from Fayette, Raleigh, or Wyoming County high schools; entering freshman; maintain a 2.0 GPA; full-time student at WVU Tech.

Freda Tabit Scholarship Fund–Money given in memory of Freda Tabit by her family and is to be used for ten football scholarships, to be distributed on the basis of two per year.

Homer and Margie Taylor Endowed Scholarship–Recipient must be a full-time student in the Community and Technical College majoring in an engineering or printing technology degree program. Recipient must maintain a 2.5 GPA with preference given to WV residents and financial need.

Tech Classified Employees' Scholarship–Will be awarded to a benefits eligible, classified employee's spouse or a child of the employee or spouse. Must be enrolled full-time at WVU Tech, with preference given to first-time entering freshmen. Must have a 2.0 GPA.

Virginia Toney Presidential Honorarium Scholarship–Recipients must be entering freshman who have at least 3.0 GPA and a composite ACT score of at least 18. The award will be two equal payments, with payment for second semester dependent on the student maintaining a 2.8 average as a full-time WVU Tech student. These recruiting awards will be known as Presidential Honorariums and are to be used toward tuition, fees, room, board, and/or books.

Triad Engineering Scholarship–A Civil Engineering major from WV or surrounding states, or any state with a Triad Engineering office, be a sophomore, junior or senior ranking already enrolled full-time at WVU Tech at the time of application, and be ranked by Tech grade point average, using ASCE activities and citizenship as a tie breaker. The scholarship will be given to those without other scholarships (i.e. those awarded by financial aid at WVU Tech such as Promise, ATI, etc.)

Valley Emergency Medical Services, Inc. Endowed Scholarship–Used to support students in programs that have a logical and direct patient benefit to health care and the provision of medical services. Must have a 3.0 GPA from high school or from other college work and must be full-time. All things being equal, preference given to students working in jobs giving direct patient care, residents of Upper Kanawha Valley, and/or children of EMT personnel. Student eligible to retain this scholarship until graduation, if GPA, major, and full-time status maintained. Full-time status may be waived if student is working in direct patient care while also attending WVU Tech.

VERIZON Scholarship–Funds donated yearly to support two Bell Atlantic scholarship awards for business, technical, or education related majors. Recipients must have completed two equivalent years of undergraduate study; must be in upper one-fourth of class based on GPA; demonstrated leadership abilities through extracurricular involvement in college related organizations; a US citizen and a WV resident for at least 24 months prior to enrollment at Tech; financial need considered; and all other qualifications being nearly equal, given to a child or ward of an active Bell Atlantic–WV employee.

Vencill Endowed Scholarship–Established by Frances Vencill in memory of her husband, James William Vencill, and to honor the Vencill family. The recipient must have sophomore standing and at least 2.5 GPA. The award will be in two equal payments with payment for second semester dependent upon recipient maintaining at least a 2.5 GPA as a full-time WVU Tech student.

Ruth Watson Scholarship–For full-time mathematics and science teacher education majors with 3.0 or better GPA and composite ACT score of at least 18. The award will be divided into two payments, with the payment for second semester being dependent on the student maintaining a 2.8 GPA.

Ammy Michelle Webb Civil Engineering Scholarship-In memory of a Junior Civil

Engineering major at the time of her death, November, 2002. The award shall be given to a non-athlete, in-state, full-time male or female studernt who isin his/her sophomore year as a Civil Engineering major. Must submit a 500-word essay describing qualifications and career goals. Must have a 3.00 GPA and maintain it in order to be awarded the scholarship for no more than three years. Must also have financial need.

Westmoreland Coal Company-Boone County Managerial/Supervisory Safety Training Fund Endowed Scholarship–The recipient must be enrolled in engineering major; full-time student at WVU Tech; maintain a 2.5 GPA; be a WV resident; be a resident of Boone or adjacent counties as defined as Logan, Lincoln, Mingo, Raleigh, Kanawha, and Wyoming County; and, all other criteria being equal, extra weight shall be given to an applicant from a coal mining family.

Cortney Whiteside Memorial Scholarship–Gauley Bridge High School Senior majoring in Electrical Engineering or Engineering degree program. Minimum High School GPA of 3.5. Recipient recommended by Gauley Bridge High School Counselor.

Teddi Wilkinson Nursing Honors Scholarship–Established by Mrs. Wilkinson's family and faculty colleagues in honor of Teddi Wilkinson, an outstanding Instructor of Nursing at WVU Tech from January 1996 until her sudden death on February 1, 1998. The recipient shall have junior standing in the BSN program at WVU Tech, maintain a 3.5 or better GPA, must submit an essay on his or her philosophy of nursing, and must be actively enrolled in college and community service. The award may continue for four consecutive semesters as long as a 3.5 or better GPA is maintained.

Woman's Club of Montgomery Dr. Alberta Ray Anderson Scholarship–Provided as a gift to the Woman's Club by Dr. Anderson, this one-time scholarship will be awarded annually to an incoming freshman matriculating at WVU Tech, who will be majoring in Office Technology, Business Technology, or Business Management. Can be used for tuition/ educational expenses but not for living or personal expenses. Must be a high school graduate from Riverside, Gauley Bridge, or Valley High School, with overall GPA of 2.7 or better. Special consideration for student who shows academic improvement over four years of high school. High school transcript, one-page essay, and two letters of recommendation must be submitted with application.

Randall P. Wood Memorial Scholarship–Established in memory of former Tech student. Recipient must be WV resident with 3.0 GPA. The award may continue for 8 consecutive semesters as long as 3.0 GPA is maintained.

Gordon Woods Memorial Scholarship–Established in memory of former Tech faculty member. Based on financial need, demonstrated academic excellence, and must be history/ government, social studies, public service, or industrial relations major.

Monty Woods Memorial Scholarship–Monty Woods was a 1980 graduate of WVIT and served as a student Sports Information Director. Primarily through the generosity of his mother, an endowment has been established in his name. The amount of the Scholarship is dependent upon dividends from this fund and is awarded on a year basis in football or men's basketball.

WV Society of District of Columbia Endowed Scholarship–A recruiting scholarship for a freshman, student must be a WV resident and scholarship is to be used for purchase of books.

WVU Tech - SHRM Scholarship–Established in 1997 by Anna McCormick, faculty member. The recipient must be an active member of WVU Tech-SHRM who is in good standing; must maintain a 2.5 GPA. The award recipient may reapply for consideration of the scholarship in consecutive years.

WVU Tech Textbook Scholarship–Established 1997 by the Bookstore Advisory Board. Up to \$200 of textbooks for one semester. Minimum requirements: 2.0 GPA and full-time student status for the semester in which the scholarship is to be awarded.

Federal Grants

Federal Pell Grant Program–Duration of student eligibility is the period of time required to complete the first undergraduate course of study, providing the student is making satisfactory progress. The Federal Pell Grant is the base of the financial aid package. The awards are made on the basis of need and could range up to \$4,050. To receive a Federal Pell Grant, the applicant must submit the Free Application for Federal Student Aid.

Federal Supplement Educational Opportunity Grant (SEOG)–Gift aid to undergraduate students based on need. Awards vary depending on the degree of need and the availability of funds. Students must maintain satisfactory progress.

State Grants and Scholarships

West Virginia Engineering, Science and Technology Scholarship Program-

The scholarships, not to exceed \$3000 per academic year, are awarded on the basis of academic qualifications and interest in the fields of engineering, science or technology and to commit to the pursuit of a related career in West Virginia. Scholarships are available for the Baccalaureate and Associate degree programs.

Higher Education Adult Part-Time Grant- A grant to encourage and enable needy independent and dependent West Virginia students who desire to continue their education on a part-time basis at the postsecondary level. Awards are for the tuition and fee cost for three to eleven credit hours.

Higher Education Adult Part-Time Grant/Workforce Development Component- A grant designed to provide assistance for needy dependent or independent students to enhance their employment skills through enrollment in courses or training programs primarily focused on occupations in or predicted to be in demand in West Virginia. A reduced Needs Analysis application must be completed by the student to determine eligibility.

Promise Scholarship- Scholarships were awarded for the first time to students graduating from high school in 2002. Students will continue to receive the scholarship as long as they maintain a 2.75 GPA their freshman year and 3.0 cumulative GPA every year afterwards from the time the scholarship was first received. Students must also complete a total of 30 hours during the initial awarding period of 12 months. Further information can be found at the Promise Scholarship website: **www.promisescholarships.org**

West Virginia Higher Education Grants (WVHEG)–Grants awarded by the WV Higher Education Policy Commission. Applicants must apply annually before the March 1st deadline. Awards range from a minimum of \$200 up to 70% of tuition and fee charges. Awards cannot exceed the cost of tuition and fees or the student's demonstrated need.

Loans

Federal Perkins Loan–A low interest (5%) loan for students enrolled in at least halftime status. To be eligible, the applicant must have demonstrated financial need, determined by a need analysis document, and maintain satisfactory progress. The amount of the loan authorized is determined by the availability of funds.

Federal Stafford Loan (Subsidized and Unsubsidized) – A low-interest loan made available through a bank, credit union, or savings and loan association. The applicant must

have financial need to qualify for the subsidized loan. The unsubsidized loan may be used to replace the expected family contribution. (Free Application For Federal Student Aid required in addition to the master promissory note.)

Federal Parent Loans for Undergraduate Students (PLUS)–Parent(s) can borrow up to the cost of attendance for each student enrolled for at least half time. Although the parent is the borrower, the monies are to be used for meeting the student's educational expenses. The parent is responsible for paying all the principal plus the interest on the loan.

The Fred G. and Nannie D. Wood Loan Fund–A low-interest (4%) privately endowed loan program with a six-month grace period for West Virginians from coal-mining backgrounds. Applicants must be in a degree program. The amount of the loan is determined by the amount of financial need and the availability of funds.

The Philip and Sadie Sporn Loan Fund–A low interest (3%) loan program with a sixmonth grace period for full-time students enrolled in engineering and/or science fields. The amount of the loan is determined by the availability of funds and financial need.

The Emergency Short-Term Loan-Available to all WVU Tech students who qualify, regardless of whether they are receiving other financial aid. This loan must be used only to help pay the costs of educational expenses. To qualify, the applicant must be a full-time student with a GPA of 2.0, have a co-signer, and have a visible means of repaying the loan. Neither the borrower nor the co-signer can have an outstanding short-term loan. The maximum amount which may be borrowed is \$100, except during registration periods; a student may borrow \$250 toward the cost of tuition and fees and room and board (this amount is to be disbursed in a two part check to WVU Tech and the student). Applicants who are approved for loans will be given a maximum of 60 days in which to repay the loan. The service charge for loans which are paid within 60 days is \$1. Overdue loans are charged interest at the rate of four percent (4%) per year.

Student Employment

Federal College Work-Study Program–In an attempt to help students meet the cost of a college education, the 1965 Education Amendments made provisions for College Work-Study programs. Work-Study expands employment opportunities for needy students and provides needed services for the employer at a minimum cost.

A student must file an application each year with the Financial Aid Office by April 1 to determine eligibility. Funds are disbursed on a first come basis; therefore, applications received after this date will be awarded later, if funds are available.

Recipients of the College Work-Study awards 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 summer employment 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.

To the maximum extent practicable, WVU Tech and the CTC at WVU Tech provide employment that reinforces the educational programs or vocational goals of the college workstudy 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.

Institutional Employment Program for Students–The State Work-Study program is a student employment program similar to Federal Work-Study except it is not based on need and wages are paid 100% by the employer.
Job Location and Development Program–The JLDP, established in 1978, is designed to encourage the development of off-campus part-time or full-time employment for all students, regardless of financial need.

Graduate Financial Aid

At the graduate level, financial need may be a consideration for granting an award, but also important is the student's proven ability and potential for achievement in the chosen field of study. Awards are made for one academic year. WVU Tech offers two types of graduate financial assistance: need based and non-need based.

Federal Stafford Loan–Refer to previous section on financial aid. A graduate student may borrow up to \$18,500 a year. The total Stafford debt a graduate student may have outstanding is \$138,500, including any loans made at the undergraduate level.

Graduate Assistantship–Requests should be made to the Dean of Engineering. The value of the assistantship is determined by the needs of the department. The awards are of two kinds: teaching and research.

WIA Program

(West Virginia Workforce Investment Act Program)

Tech participates in the Higher Education WIA program which provides significant financial and counseling support for youth and adults having the desire to pursue an associate degree. Candidates must meet eligibility requirements under WIA and satisfy admission requirements to the Community & Technical College.

Selected participants are provided full tuition and textbook allowances and, if applicable, travel and child care stipends. Comprehensive tutorial and counseling services are also provided.

Upward Bound Program

WVU Tech Upward Bound Program is a federal TRIO program funded by the USDE.

The Upward Bound Program targets high school students in grades nine through twelve (12) who have academic potential, but who may not be making plans to develop their intellectual ability through postsecondary education. The program provides motivation, incentives, and opportunities for students to improve and develop skills necessary for acquiring and identifying personal and academic abilities.

Students qualified to participate in the Upward Bound Program must be from families whose parents/guardians meet income guidelines established by the U.S. Department of Education. All expenses are paid by the Upward Bound Program grant proposal funded by the U.S. Department of Education.

At the end of each academic year, seventy-five Upward Bound students participate in a sixweek summer residential program held on the WVU Tech campus. Students live in a wellsupervised residence hall for the duration of the program. Also, they participate in academic courses in. composition, literature, foreign languages, math, and science skill-building courses, enrichment and exploratory electives. An out of-state trip is enjoyed by participants at the end of the summer program.

During the academic year, the follow-up program is designed to provide academic, career, educational, and personal counseling for student participants. For more information, please contact the WVU Tech Upward Bound Office at (304) 442-3196.

Academic Programs

ACADEMIC PROGRAMS

The Core Curriculum

WVU Tech and the CTC at WVU Tech have established a core curriculum to provide a broad education for baccalaureate and associate degree students, in addition to the competence that is developed within major and minor fields of study.

Core Curriculum Learning Outcomes

Upon completion of the Core Curriculum, the student:

- 1. Will be able to
 - a. reason critically,
 - b. give logical exposition, and
 - c. use clear and correct grammatical expression in both written and oral communication.
- 2. Will be able to solve problems by
 - a. using pertinent mathematical operations and/or
 - b. performing basic computer procedures commonly used in today's world.
- 3. Will
 - a. understand basic concepts and theories in the physical and/or natural sciences,
 - b. be able to apply the Scientific Method,
 - c. be able to solve scientific problems, and
 - d. be able to perform correct laboratory procedures and analyses.
- 4. Will be able to analyze and evaluate the forces (including technology) underlying social, political, and economic foundations of cultures and civilizations.
- 5. Will have

a. an appreciation of academic disciplines outside of the student's major field of study and

- b. a proficiency in and a commitment to life-long learning.
- 6. Will recognize that important, even crucial, contributions to the making of the modern world have been made by people of diverse races and nationalities.
- 7. Will understand the interdependence among people of the world in social, political, and economic affairs.
- 8. Will understand the importance of being a responsible citizen in a democratic society.

Core Curriculum Requirements

All students, whether pursuing a four-year bachelor's degree or a two-year associate degree, will complete a minimum sequence of courses known as the Core Curriculum. The Core Curriculum is designed to provide a foundation for future study and to expand and focus the educational experience into areas not ordinarily covered in a major field of study.

The Core Curriculum includes courses in six major areas of study, plus experience in cultural diversity and citizenship. One three-credit hour course must focus substantially on the study of a foreign or minority culture or cultures, or on women and/or issues of gender. This course can be used both toward the Cultural Diversity and the Humanities, Social Science, or General Elective requirements. Courses with an asterisk (*) meet the Cultural Diversity requirement.

Both oral and written communications are required. Courses with two asterisks (**) meet the oral communication requirement.

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Individual programs of study may further restrict options under each category. Students are advised to check individual program requirements.

1. ORAL AND WRITTEN COMMUNICATIONS

Associate Programs (6 hrs): A. ENGL 101; B. ENGL 202

Students who transfer into CTC majors may have the option to use ENGL 102 in place of ENGL 202, dependent on department policy.

- Baccalaureate Programs (9 hrs): A. ENGL 101; B. ENGL 102; and C. ENGL 202**, 305**, or SPCH 250**
- 1. Students who score 25 or above on the ACT or 450 or above on the SAT may choose B, C, and any Literature class.
- Students who have completed an Associate Degree that includes ENGL 101 & ENGL 202 may substitute ENGL 102 with ENGL 305 or SPCH 250.

2. MATHEMATICS/COMPUTER APPLICATIONS

Associate Programs (3 hrs); Baccalaureate Programs (6 hrs)

(All baccalaureate programs must include a minimum of 3 credit hours of 100-level or above mathematics. Does not include developmental mathematics.)

NOTE: The combination of OTEC 280, Software Apps: Excel Spreadsheet; OTEC 280, Software Apps: Access Database; and OTEC 280, Software Apps: PowerPoint Presentation Graphics meet this requirement for certain AS programs. Students in these programs planning to also pursue a BA or BS degree are advised to take a college level MATH course appropriate to the BA or BS degree they intend to pursue in place of the three OTEC 280 courses.

3. LABORATORY SCIENCES

Associate Programs (4 hrs); Baccalaureate Programs (8 hr sequence)

- A. Biology BIOL 111, 112; 231, 232; or 233, 240
- B. Chemistry CHEM 111, 112; or 115, 116
- C. Physics PHYS 201, 202; or 213, 214
- D. Physical Science PHSC 105, 106

4. HUMANITIES

Associate Programs: Six (6) hours of Humanities and/or Soc Sciences from Sections 4, 5, and/or 7. At least one course from Section 7 - Cultural Diversity - must be completed. Prerequisites must be observed. Baccalaureate Programs (6 hr sequence): Two courses must be completed in the same discipline.

- A. Art/Music ARTS 113 and MUSC 142, 441, 442 or 443*
- B. History HIST 101* and 102*, or HIST 152 and 153, or one of these courses and any HIST 300+ course
- C. Philosophy any PHIL 200+ courses
- D. English/Literature any ENGL 100+ courses, except 101, 102, 202, 305, 326, 327, and drama lab
- E. Language (excluding English and one's native language) FREN 101*, 102*, 203*, 204*; or SPAN 101*, 102*, 203*, 204* must be 6 hour sequence.

5. SOCIAL SCIENCES

Associate Programs: Six (6 hrs) of Humanities and/or Social Sciences from Sections 4, 5, and/or 7. Baccalaureate Programs (6 hr sequence): Two courses must be completed in the same discipline.

Prerequisites must be observed.

- A. Sociology SOCI 101* and SOCI 305, 310, 312, 321, 322*, 327*, 343*, or 345*
- B. Political Science POLS 102 and any POLS 300+ course
- C. Economics ECON 231 and 232
- D. Psychology PSYC 221 and PSYC 241, 322, 323, or 390
- E. Geography GEOG 102* and GEOG 343

6. GENERAL ELECTIVES

Associate Programs (0 hrs); Baccalaureate Programs (6 hrs). Prerequisites must be observed.

- A. Any 300+ level course from the above categories for Social Sciences and Humanities, except English
- B. ENGL Any 100+ level course except the following: 101, 102, 104, 111, 201, 202, 221, 304, 305, 326, 327, and Drama Lab.
- C. ARTS- Any ARTS courses, except ARTS 485, 490
- D. HLTH 102
- E. MUSC 142, 250, 441, 442, 443*
- F. PHED 101or MUSC 202
- G. GEOG 102*, 343

7. APPLIED CORE CURRICULUM ELECTIVES (FOR ASSOCIATE STUDENTS ONLY)

Associate of Science Programs (Program-specific hours; variable); Prerequisites must be observed. Each program has selected specific application courses that include competencies of general education inherent to the program of study.

- A. Business Technology: OTEC 100; MATH 124.
- B. Civil Engineering Technology: MATH 113, 114, 117; GNET 108; PHYS 201, 202.
- C. Computerized Drafting and Design Technology: MATH 113, 114, 117; GNET 108; PHYS 201, 202
- D. Computer Information Technology: MATH 113/124; GNET 108; ELET 241; ELET 121; Programming Language; Lab Science.
- E. Computer Science: CSCI 121, 122, 222, 231, 261, 263, 264; MATH 113, 114; PHYS 201, 202.
- F. Dental Hygiene: BIOL 233, 240; DENT 126, 151, 156.
- G. Electrical Engineering Technology: MATH 113, 114, 117; GNET 108; PHYS 201, 202.
- H. Mechanical Engineering Technology: MATH 113, 114, 117; GNET 108; PHYS 201; CHEM 115.
- I. Office Technology: OTEC 144, 172, 183, 187, 270, 176, 280.
- J. Printing Technology: PRNT 114, 115, 116, 126, 127, 134, 135, 136, 141, 142, 143, 217, 235, 241, 251.
- K. Respiratory Therapy: RESP 115, 207, 210, 211, 217.

8. CULTURAL DIVERSITY*

Associate Programs: three (3 hrs) Baccalaureate Programs (3 hrs.).

This course can be used both toward the Cultural Diversity and the Humanities, Social Science, or General Elective requirements. Humanities and Social Science courses with an asterisk (*) meet the Cultural Diversity requirement.

A. ECON 449*

B. ENGL 225*, 272*, 352*
C. FREN 101*, 102*, 203*, 204*
D. GEOG 102*
E. HIST 101*, 102*, 355*, 377*, 378*, 470*, 471*, 472*
F. MUSC 443*
G. POLS 316*
H. SOCI 101*, 322*, 327*, 343*, 345*
I. SPAN 101*, 102*, 203*, 204*

9. CITIZENSHIP

Each degree-graduating area has a published plan for incorporation of citizenship into the curriculum as directed by the West Virginia legislative in Senate Bill 547. In general, campus-based efforts that relate to citizenship are 1) curricular activities that are incorporated into credit courses, 2) internships that are connected to academic programs, and 3) public service activities, either credit or noncredit, that are supported and encouraged by the institution.

	Credit Hour	S
Core Curriculum Categories	AS	BA/BS
Oral and Written Communications	6	9
Mathematics/Computer Applications	3	6
Laboratory Science	4	8
Humanities	0-6	6
Social Sciences	0-6	6
Cultural Diversity	*	*
General Electives	0	6
Applied Core Curriculum Electives	Variable	0
Citizenship	_	_
	31*	41

* Minimum for Associate of Science (AS). Minimum for Associate of Applied Science (A.A.S.) is 19 hours.

ACADEMIC OFFERINGS COLLEGE OF BUSINESS, HUMANITIES, AND SCIENCES (Baccalaureate Degree Programs) (304) 442-3105

MAJOR CODES

Accounting, B.S.	401
Athletic Coaching Education, WVU B.S.	
Biology, B.S.	114
Business Management, B.S.	411
Career Technical Education, B.S.	155
Chemistry, B.S.	121
Health Services Administration, B.S.	422
History and Government, B.A.	
Industrial Relations and Human Resources, B.S.	430
Interdisciplinary Studies B.A. B.S.	112
Engineering & Entrepreneurship Emphasis, B.S.	110
Graphic Design Emphasis, B.S.	111
Management Information Systems, B.S.	
Mathematics, B.S.	
Nursing, BSN	
Printing Management, B.S.	417
Psychology 2 + 2 WVU	436
Public Service Administration, B.S.	426
Public Service Administration/Community Economic Development, B.S	440
Public Service Administration/Construction Administration, B.S.	444
Public Service Administration/Criminal Justice Administration, B.S.	442
Public Service Administration/Law and Legal Service Administration, B.S	441
Public Service Administration/Non Profit Administration, B.S.	443
Regents B.A.	
Sport Management, B.S.	144
Teacher Education, 3 + 2 WVU	
Technology Management, B.S.	
Information Technology Emphasis, B.S.	439

LEONARD C. NELSON COLLEGE OF ENGINEERING (Baccalaureate Degree Programs) (304) 442-3161

Aerospace Engineering (2+2 WVU)	218
Chemical Engineering, B.S.Ch.E.	211
Civil Engineering, B.S.C.E.	212
Computer Science, B.S.C.S.	215
Electrical Engineering, B.S.E.E.	213
Electrical Engineering (Computer Engineering Option)	219
Mechanical Engineering, B.S.M.E.	214
Electronic Engineering Technology, B.S.E.E.T.	289
Engineering Technology, B.S.E.T.	298

(Master of Science Degree Program)

Applied Technology, A.A.S	337
Applied Process Technology A.A.S.	339
Board of Governor's Degree Completion Program, A.A.S.	320
Business Technology, A.S	340
Accounting Emphasis	341
Business Supervision Emphasis	343
Computer Information Systems Emphasis	344
Restaurant Management Emphasis	348
Civil Engineering Technology, A.S.	382
Computer and Information Technology, A.S.	376
Computer Science, A.S.	315
Computerized Drafting and Design Engineering Technology, A.S.	383
Dental Hygiene, A.S.	362
Digital Imaging Technology, Certificate	338
Electrical Computer Network Specialist	302
Electrical Engineering Technology, A.S.	388
Computer Engineering Technology Emphasis	327
Electrical Mining Specialist, Certificate	308
Electro-Mechanical Specialist, Certificate	309
Entrepreneurship, Certificate	357
General Studies, A.S.	386
Public Service Transfer, Emphasis	360
Health Transfer Certificate	335
Help Desk, Certificate	306
Internetworking and Computer Security Specialist, Certificate	303
Manufacturing Specialist, Certificate	305
Mechanical Mining Specialist, Certificate	307
Mechanical Engineering Technology, A.S.	391
Medical Transcription Certificate	369
Network Security Administrator Specialist, Certificate	304
Occupational Development, A.A.S.	350
Child Development Specialist	321
Corrections Emphasis	352
Culinary Apprentice Emphasis	353
Office Technology Management, A.S.	
Computer Specialist Emphasis,	
Executive Emphasis, Medical Assistant Emphasis, Medical Office Emphasis,	
Medical Emphasis	349

Office Technology Certificate - Claims Processing	
Pre-Press Certificate	
Press Certificate	
Printing Technology, A.S.	
Respiratory Therapy, A.S.	
Technical Studies, A.A.S.	
Automotive Service Technology	
Building Construction Technology	
Diesel Technology Emphasis	
Information Technology (Statewide Program)	
Manufacturing Specialist	
Paraprofessional Education	
*	

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Academic Advancement

Credit Hours

Academic advancement by the student is measured in terms of semester hours. To earn one semester hour, usually the student must attend a lecture of 50 minutes (one clock hour) each week in a semester. For laboratory credit of one semester hour, the student attends two or three clock hours per week.

Course descriptions in the catalog show the number of semester hours for the course and the number of hours of lecture and/or laboratory per week.

Credit by Examination

The student who may have sufficient proficiency in material covered by a specific course may apply for credit by examination. Forms are available in the Registrar's Office. The chair of the department involved shall determine by a preliminary examination the proficiency of the student, and may recommend to the committee on Classification and Grades that the student be given an opportunity to attempt examination for credit. If approved by the Committee, a comprehensive departmental examination will be administered by an examining board of one or more faculty, appointed by the Committee from the department in which credit is being sought. The examination will be constructed by the Examining Committee to test competency as required for students enrolled regularly. Credit will be granted if a minimum grade of C is attained. The test and results shall be presented to the 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.

Articulated, EDGE, or Dual Credit Opportunities

The CTC at WVU Tech has agreements in place with a number of high school and vocational schools and the Department of Corrections in the region. These agreements recognize course equivalencies in specific technical courses in the areas of office technology management, engineering technologies, diesel technology, corrections, culinary apprentice and computer and information technology. Interested students are encouraged to talk with the academic advisor in the specific program of interest.

Advanced Placement

WVU Tech and the CTC at WVU Tech encourage high school students to participate in the Advanced Placement Program, administered by the College Entrance Examination Board. Advanced classes are offered in many high school subjects such as biology, chemistry, English,

history, mathematics, and physics. A national examination is administered for each course by the Educational Testing Service.

The colleges will grant credit upon recommendation of the department concerned for subjects in which grades of 5, 4, and 3 are earned.

College Level Examination Program

The Admissions Office is an open test center for administering CLEP examinations. Up to 30 semester hours of freshman credit may be granted on the General Examinations if scores of 500 or higher are attained. In addition, credit is awarded for subject examinations in which the student achieves a score equal to or above the recommended score for a C grade. Grades and quality points will not be awarded for CLEP examinations.

Information on the examinations may be secured from the Office of Admissions and Records. 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 listed in the "Guide to the Evaluation of Educational Experiences in the Armed Services."

Students who make application for credit are required to submit to the Registrar official records such as 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).

Credit for college-level USAFI courses will be granted in accordance with recommendations of Commission on Accreditation of Service Experiences. In addition, veterans who served in regular military service for more than one year will be granted one semester hour of physical education and two semester hours of health upon presentation of a DD-214. Contact the WVU Tech and CTC at WVU Tech's Veterans' Affairs Office for additional information and assistance. **Project AHEAD (Army Help for Education and Development)**

Project AHEAD (Army Help for Education and Development)

WVU Tech and the CTC at WVU Tech cooperate with the United States Army in a Project AHEAD program to assist service people in keeping an accurate record of the academic work they complete while on active duty.

After qualifying for Army service, participants in the program apply for admission to college. The college will maintain a scholastic file and provide guidance for long term educational planning. In turn, the Army provides on-post guidance counselors to insure that courses leading to a degree are taken by the soldier-student. Records of college credits earned on active duty should be sent to Tech, which maintains an updated account of the student's work.

In addition, the Army offers financial educational support to the Project AHEAD student both during and after the tour of duty.

Upon release from active duty, the Project AHEAD student should report to campus and register for classes. The Office of Admissions and Records has complete information on the program.

Classification of Students by Class Rank

Class rank is based on the total number of semester hours credit on file in the Office of Admissions and Records at the beginning of each term. Minimum requirements are:

Semester Hours Earned
90-Over

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Students enrolled in two-year programs in the Community and Technical College are classified as sophomores even though they may have earned over 59 hours.

Classification of Students for Fee Purposes

Enrolling students are classified as resident or nonresident for tuition and fee purposes at the time of admission. Guidelines for determination of residency are printed in the Register. **Credit-Hour Load**

The maximum credit-hour load for which a student may register in a regular semester is 20 hours. In a five-week summer term the maximum is six hours. Exceptions may be permitted after consultation with the student's advisor. However, registration for loads in excess of these maximums must be accompanied by a properly executed waiver form signed by the student's advisor, department chair, and dean of the college.

Class Attendance

Students are expected to attend class regularly. Instructors set attendance regulations for their classes. They will specify early in the semester what the regulations are and the policy regarding makeup tests and class assignments. Students are responsible for all work missed as a result of absence. Institutional excuses for college-sponsored activities are granted by the dean/provost of the school and honored by each instructor.

Grading System, Quality Point Average

Grades awarded are:

A-Excellent	4 quality points per semester hour
B-Good	
C-Average	
D-Below Average	
F-Failure	
FI-Failure Irregular Withdrawal	
WF-Withdrawal after deadline	

I-Incomplete: given when a student is unable to complete a course because of illness or other unavoidable circumstances. Six weeks in to the next regular semester are given to complete the course requirements.

IF-Incomplete Grade: not removed by next regular term. Completed as an F.

XI-Extended Incomplete (making progress): not remo

CR-Credit but no grade: (not calculated in grade point average).

X-Audit: no quality points or credit.

P-Passing: no quality points given. Given only for co-op work experience or noncredit courses. F grades in noncredit courses are not computed.

W-Withdrawal within time limit: no credit or quality points.

Students in the College of Engineering are permitted to withdraw from a required class one time only.

A student enrolled under a Veterans Administration program must report to the Registrar before withdrawing from a course. Withdrawals from all five-week mini courses must be done before the end of the third week.

Quality Point Average

A requirement for graduation is that a student earn a minimum of twice as many quality points as hours attempted, or a 2.00 average. Anything below that is considered a quality point deficiency.

The average for a semester is computed by dividing the semester quality points earned by the total semester hours attempted.

D and **F** Repeat Rule

A student earning a D or F grade no later than the semester in which a total of 60 hours is attempted may repeat the course prior to earning a baccalaureate degree and have the original grade deleted from the cumulative grade computation. (Rule may be applied once per course).

The D and F Repeat Rule Form may be picked up from the Office of Admissions and Records during the semester in which the class is being repeated for the first time.

Repeating Classes

Students may repeat only once a class for credit or quality points after receiving a grade of "C". No credit or quality points will be awarded for any course which a student repeats after an initial grade of an "A" or "B" has been earned.

Grade Periods

Mid-semester and final grades are reported to the Office of the Registrar and Records each semester. The mid-term grades are progress reports only, and students may obtain a copy from their advisors.

The college sends final grade reports to the student. If the student is under 18 and single, grade reports are also sent to the parent or guardian. A student having an error in a grade received or a grade omitted should contact the instructor and/or the Registrar immediately. An instructor who makes an error in reporting a grade may request a grade change by completing a form provided by the Registrar. All corrections in grades must be approved by the department chair, dean/provost of the school, and the Committee on Classification and Grades.

Academic Dishonesty

Honesty among the members of any social group is required for the smooth functioning of the group. In college, new experiences, social 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 should discuss the matter with the student involved as soon as practical, but should assess a penalty 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. When a penalty is levied the student may accept the penalty and sign a written admission of guilt, accept the penalty without admission of guilt, or may, within one week, appeal the faculty member's decision to the department/division chair of the department involved. If appeal is requested, the chair will meet with the student and faculty member involved as soon as possible to review the evidence related to the case. The student still has the option to remain in the course and continue the work until the appeal process is completed in the case of appeal of dismissal from a course. It should, however, be clearly understood that, if the decision for dismissal is upheld, the student will receive an "F" grade for the course regardless of overall performance in the course work. If the student chooses not to remain in the course, the committee shall decide whether to award a "W" or "F" grade based on the outcome of the appeal.

Should the chair uphold the faculty member's decision, the student may appeal to the appropriate academic dean or accept the decision. If the chair does not uphold the faculty member's action, the instructor may accept that decision or appeal the question to the academic dean. The appeal must be in writing, describing the basis for appeal, and be submitted within one week after the chair's decision.

Either the student or faculty member may appeal the decision of the dean by a written request for a hearing, addressed to the Chair of Academic Appeals Committee, within one week of the deans decision. When such an appeal request is made, the committee chair will schedule a hearing within two weeks and notify, in writing, all concerned parties of the time and location of the hearing and also the hearing procedure to be followed.

Additional penalties for academic dishonesty include suspension or permanent dismissal from the institution. Only the Academic Appeals Committee can determine these sanctions after a formal hearing before the Committee. In accordance with WVU BOG Policy #10, a recommendation for the imposition of sanctions by the Academic Appeals Committee in a case of academic dishonesty is final. A hearing toward imposition of the sanctions of suspension or dismissal can be initiated at the request of the instructor, the department/division chair, or the dean.

In the event that a student receives an "F" grade in a course as a result of academic dishonesty, a report of this action will be filed with the appropriate administrative office. Should the student receive a second such "F" grade, the student shall be subject to suspension or dismissal from the institution, the appropriate action to be determined by the Academic Appeals Committee. When a student graduates, any such report concerning that student will be removed from the file and destroyed.

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 faculty member. 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 nor 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's decision is to be enforced by the President.

Summer Grade Appeal Policy. Any student whose May graduation was delayed by a grade of "D" of "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 instructor, department chair, or dean within three (3) weeks of the mailing date of final grades. For summer grade appeals, the President, or his/her designee is empowered to appoint summer replacements for faculty representatives on the committee who are not available. The Dean of Student Development will appoint student replacements as needed. Other than exceptions noted above, all other portions of the regular Grade Appeals Policy are in effect.

Orientation Classes

At WVU Tech, one hour credit will be assigned to the Freshman Seminar. The grading system will be the standard A, B, C, D, F. Credit for this course will be used in computing grade point average for purposes of probation and suspension. Credit for this course **will not** be used for graduation purposes or honors from any WVU Tech program. Credit for this course will comprise one hour of sixty hours for D & F repeat rule. Transfer students with less than thirty (30) credit hours must take Freshman Seminar.

Students enrolled in the CTC at WVU Tech are required to fulfill a freshman seminar course that is designated within each academic program. Transfer students with less than 30 credit hours must enroll in the designated freshman seminar course.

Transcripts

Students desiring copies of their college records should make requests to the Office of Admissions and Records 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 of five dollars must accompany each additional request. All financial obligations to the college must be satisfied before a transcript will be issued.

Change of Schedule

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 first week of classes. A student must have satisfactorily completed the English sequence by the end of three semesters. A student who has not passed or ENGL-102 or ENGL-202, must take the proper English sequence consecutively and cannot withdraw from the course.

Students enrolled in English courses ENGL-092, ENGL-093, or ENGL-100'**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 midterms to withdraw from a course with a W grade. This date is given in the academic calendar. After this date, a WF grade is given. In an emergency or when extenuating circumstances justify an exception the dean/ provost may recommend in writing that the student receive a grade of W.

During the summer, the deadline for withdrawal with a W is approximately three weeks in a five-week session and approximately seven weeks in a ten-week session. This date is 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 a change in major application, available in the Office of Admissions and Records.

Changing from a Four-Year Program to a Two-Year Program

Students may transfer from a four-year program at WVU Tech or any accredited college to a two-year program at the CTC at WVU Tech. Students transferring with an overall cumulative 2.0 GPA or higher at the time of transfer will retain all quality points. The quality point average at graduation (see Requirements for Graduation) will include all course work taken.

Students having less than a cumulative 2.0 GPA at the time of transfer may begin anew in the two-year program. In this case, the hours of applicable courses with C or higher grades in the four-year program will be retained. The quality point average at graduation will include **only** those courses taken while the student is enrolled in the two-year program. A student who has been on academic probation in the four-year program will enter the two-year program on probation and will need to maintain a 2.0 average each semester to stay in school. If, upon successful completion of the two-year program, the student re-enrolls in any four-year program, all previous grades from the initial four-year program will be reinstated for determination of academic standing.

Changing from a Two-Year to a Four-Year Program

Students in appropriate two-year programs at the CTC at WVU Tech or any accredited college may transfer into selected four-year programs at Tech with little, or no, loss of credits.

Plus-two Bachelor of Science degree programs with direct transfer options include Electronic Engineering Technology, Engineering Technology, Engineering Technology-Civil, Engineering Technology-Environmental, Engineering Technology-Mechanical, Industrial Technology, Printing Management, Technology Management, and Health Services Administration. Students transferring from other institutions may require an evaluation of transfer credit.

For other four-year curricula, a credit evaluation will be completed to determine the number of credit hours that will apply.

Academic Forgiveness-WVU TECH

WVU Tech allows an academic forgiveness to some students who are not successful in their attempt to higher education.

To be eligible, a student cannot have been enrolled at a West Virginia state system of higher education institution for at least four calendar years and cannot have been enrolled in any other institution of higher learning during those four years. In order to determine your eligibility, you must complete the Academic Forgiveness Form which is available at the Office of Admissions and Records and the Office of the Registrar and Records. The following conditions and rules apply:

The request for academic forgiveness must be submitted during the readmission semester and, if all conditions are met, academic forgiveness will be granted upon completion of the readmission semester.

- Admission to WVU Tech under the academic forgiveness policy is conditional upon satisfying the above stated non-enrollment period. In addition, a recommendation that the student be admitted under the academic forgiveness policy must be submitted by the dean of the college or school that the student plans to enter, and the recommendation must be approved by the Office of the Provost and Vice President for Academic and Student Affairs.
- Upon admission to WVU Tech under this policy, the student will be credited with the hours earned for courses completed with a grade of D or higher.
- Grades earned under this policy will not be counted for purposes of calculating the student's grade point average, but grades earned will remain on the student's permanent record.
- The student must meet and complete all coursework required to meet the college's or school's requirements for graduation, but under no circumstances after the student has been admitted under the academic forgiveness policy shall the student complete fewer than 32 credit hours at WVU Tech prior to earning a degree.
- A student admitted to WVU Tech under this policy will follow all regulations regarding probation, suspension, and expulsion.
- Students admitted under the Academic Forgiveness Policy are expected to complete all course work at WVU Tech. Exceptions to this rule can be appealed to the Department Chair in writing.

Only students applying for readmission after the effective date of this policy will be eligible for academic forgiveness under this policy.

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. The Regents Bachelor of Arts Program is governed by a different forgiveness policy.

Procedures:

- Student completes and signs top half of "Petition for Admission under Academic Forgiveness Policy."
- Admissions verifies transcript record and calculates the number of credit hours with which student will be readmitted or admitted. The petition and transcript(s) are forwarded to the Dean of the College or School student wishes to enter.
- Petition is approved by the Dean of the College or School student wishes to enter.
- Petition is forwarded to the Associate Provost for Academic Programs for approval.
- Recommendation for admission under Academic Forgiveness is returned to the Office of the Registrar and Records for appropriate processing.
- After student has been admitted under the Academic Forgiveness Policy, the student must complete 32 or more credit hours prior to earning a degree.

Academic Forgiveness-CTC

Students enrolled in two-year programs at the CTC at WVU Tech may be eligible for

academic forgiveness (HEPC Title 133, Series 22) under the following conditions:

- The student has not been enrolled in college on a full-time or part-time basis at any higher education institution for a period of four (4) consecutive years.
- Only D or F grades received prior to the four-year non-enrollment period can be disregarded for GPA calculation for graduation in certificate or associate programs.
- The disregarded D or F grades shall not be deleted from the student transcript.
- At least 24 additional credit hours must be completed at the CTC at WVU Tech after the non-enrollment period.
- The student is readmitted on academic probation and must maintain a 2.0 GPA each semester. If the student falls below a 2.0 GPA in any semester, suspension will be invoked.
- All institutional degree requirements must be met.
- Only enrolled students are eligible.
- Academic forgiveness is institution specific and may not be honored at WVU Tech or other institutions.

Withdrawal from College

Students who find it necessary to withdraw must do so through the Office of the Registrar and Records.

Failure to withdraw officially will result in FI grades. Refund of tuition and fees is based on the date the completed withdrawal form is presented to the Registrar.

Students Called to Serve in the Military

Students called to serve in 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. The student must provide a copy of the deployment papers to the Registrar and, if withdrawing, the student must process a withdrawal form.

WVU Tech will regulate the policy as follows:

- 1. Students who withdraw from the institution for military service up to and incuding the 12th week of the semester will receive a refund of their refundable tuition/fees and will be administratively withdrawn from their classes. Students will also receive a prorated refund for campus housing and meals. No course grades or credit will be awarded.
- 2. Students who leave Tech for military service after the 12th week of the semester should work with the designated contact person in their home college (usually the student's chairperson or dean). A student will be able to find out who the appropriate contact person is from their dean's office, from the Registrar, or in the Office of the Provost/ Academic Vice-President for Academic Affairs. The contact person will assist the student in reviewing the student's eligibility for credit for 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 and ensure that the appropriate grades are filed for the student. If the course is not in the student's home college (i.e. transient students at WVU Tech), 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 may receive the grade earned at that time. It is anticipated that this would be the outcome in the majority of cases.

b. If a critical competency has yet to be covered in a competency-based course, the

instructor may 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 will be filed in the Records Office. Within a year of the student's return from active duty, the student must re-enroll at WVU Tech. Once re-enrolled, the student will have one academic year to make up the incomplete grade. At the end of the one-year period, the instructor must submit a final grade. If no change is made by the instructor, the grade "I" will be changed to an "F".

c. The student may choose to withdraw from the course and the contact person will work to provide an administrative withdrawal.

Probation and Suspension

The policies governing academic probation, dismissal, and reinstatement are listed below:

- 1. A student will be placed on academic probation at the end of any semester in which there is a cumulative quality point deficiency of 11 or more.
- 2. No student on probation may carry more than 14 semester hours, including noncredit courses.
- 3. A student on academic probation may participate in only one extracurricular activity in a semester (varsity sports, cheerleader, debating, dramatics).
- 4. No student on probation may serve in the SGA or hold class office.
- 5. A student remains on probation until all deficit quality points are made up.
- 6. A student on academic probation will be suspended for one semester if the average in any semester or summer term falls below 2.0 and if the deficiency is 11 or more quality points.
- 7. A student who has been suspended once may be reinstated by remaining out of school for one semester and applying for readmission. Being out of school during the summer does not satisfy this provision. The student may petition the Committee on Classification and Grades to waive the one semester waiting period. This petition must be submitted to the Committee for consideration at least one week prior to the first day of registration.
- 8. A student who has been given a second academic suspension is not eligible to return except through special committee action.
- 9. Credits earned by students at other institutions while on suspension from WVU Tech or the CTC at WVU Tech *will not* be accepted for transfer credits if student is readmitted.
- 10. All students on probation, or who have been reinstated after a first suspension has been waived, must report to the Academic Enrichment Center no later than one week after classes begin the next semester.

Requirements for Graduation

Normally, a student may expect to graduate under the requirements published in the catalog year in which he/she was officially accepted into the specific degree program. However, the college reserves the right to change requirements for graduation. If such changes are made, they may, at the discretion of the college, 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 six years to complete degree requirements in an original baccalaureate program or three years in an associate program. However if the student interrupts their program for one academic year they will be subject to the requirements of the existing catalog when they return.

Degree requirements vary from program to program. The minimum semester hours for an Associate degree is 64 and for a B.A. or a B.S. 128 semester hours. The student is responsible for completing all course requirements including any required core requirements listed in the

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pattern sheet and must 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 and Records. Candidates for graduation taking courses under the transient student status must see that a transcript is received in the Office of Admissions and Records no later than ten (10) calendar days after the Commencement date.

I. 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. Overall 2.0 average in all courses attempted.
- 4. Overall 2.0 average in 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 chemistry, engineering, math, and physics)

B. Engineering Technology/Industrial Technology

Professional courses (all engineering technology, industrial technology, technical restrictive electives, and required math and science courses collectively.)

C. Business

1. Professional courses (all business and economics). Printing management majors also will include all printing management (PMGT) courses.

2. All business 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

- 1. Maior
- 2. Minor (if elected)

6. Minimum 2.0 average in <u>all</u> courses (Tech and transfer), in major and minors, as indicated in Part 5, A-E, above.

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 128 semester hours, including professional school, is required.

II. Graduation requirements for **associate degrees** from the CTC at WVU Tech include the following:

- 1. Fifteen of the last 21 hours be taken in residence at WVU Tech.
- 2. An overall 2.0 GPA
- 3. An overall 2.0 GPA from the CTC at WVU Tech
- 4. An overall 2.0 GPA in the student's major field as outlined below:
 - A. Engineering Technology

All GNET, CIET, DRET, ELET, MEET–Engineering Technology courses, technical restricted electives, and required Math and Science, collectively.

B. Business Technology

All ACCT, BLAW, BUAD, CMIS, FINC, MGMT, MKTG-Business courses, ECON-Economics courses, and BSSU-Business Supervision courses.

- C. Office Technology Management
 - All OTEC-Office Technology Management courses.
- D. Printing
 - All PRNT-Printing courses
- 5. A minimum grade of "C" in each course of the student's major field as outlined below:
 - A. Dental Hygiene
 - 1. All DENT-Dental Hygiene courses.
 - 2. CHEM-109, BIOL-219, BIOL-220
 - B. Respiratory Therapy
 - 1. All RESP-Respiratory Therapy courses
 - 2. BIOL 201, 202
 - C. Occupational Development
 - Corrections Emphasis
 - Culinary Apprentice Emphasis
 - Child Development Specialist Emphasis
 - To earn a Occupational Development-Corrections degree, students must have successfully completed the WV Department of Corrections training and 2600 hours of on-the-job training as an employee of a correctional facility or jail. To earn a Occupational Development-Culinary Apprentice degree, students must have successfully completed culinary Apprentice training at Carver Career and Technical Education Center including the classroom training and 6,000 hours of on-the-the-job training. The Child Development Specialist Emphasis requires completion of the apprenticeship program.
 - Documentation by the appropriate agencies that all instructional objectives including time-on task and competency levels-have been met and that the registered apprenticeships program has been completed is required for graduation.

6. Assessment instruments required for general education (e.g. WorkKeys) and specific instruments designated in each major. WorkKeys scores will be included on graduate transcripts.

Application for Graduation

A formal application for graduation must be filed in the Office of Admissions and Records by the date listed in the academic calendar.

Receiving a Second Degree

A student planning to graduate must have an assigned academic advisor in each department from which the student plans to earn a degree prior to registering for the last full semester preceding graduation.

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

Assessment Program

To assess student academic achievement, WVU Tech and the CTC at WVU Tech have established an institutional assessment program. The components of the assessment programs include the following:

• Assessment of the general education core curriculum: CAAP, WorkKeys

(AS students), and/or other measurement tools.

- Programmatic assessment: Instruments designated by each academic department, administered in accordance with the departmental assessment program
- Student satisfaction: Survey completed to gather data on quality of student life
- Graduate and employer follow-up: Surveys mailed to graduates and employers to determine relevance of WVU Tech education in the workplace.

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, helps students academically by adding new dimensions of understanding to their academic studies, helps students establish contacts in their field, helps students gain 12 to 20 months of practical work experience, and helps students to earn dollars to defray college education expenses.

CO-OP Eligibility Regulations

- 1. Be in the process of completing the first year of a declared BA/BS academic curriculum as outlined in the college catalog
- 2. Earn and maintain a 2.2 grade point average
- 3. Be enrolled as a full-time student
- 4. 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 availability of such programs.

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

This program was created to better serve both employers and students when a career related employment opportunity develops that does 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 Sciences which requires the Practicum Internship and Practicum Seminar for B.S. Degree programs in Industrial Relations and Human Resources, 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 15 hours credit. In the CTC at WVU Tech, the Office Technology Management programs require a 150-hour practicum for graduating students.

Extended Education

Under the regulations of the Higher Education Policy Commission and with its approval, WVU Tech and the CTC at WVU Tech may offer Extended Education courses in Fayette and Kanawha and the remaining 20 counties in West Virginia University's Southern Region. In addition, the college serves other counties where certain levels of expertise are not met by institutions of higher learning located in these particular areas.

The colleges provide a variety of credit courses and programs for adult and nontraditional students. Off-campus, evening, weekend and special session offerings at both the associate and baccalaureate levels are arranged through the Extended Education department. Furthermore, the programming is supplemented through the use of electronic videoconferencing, Internet, e-mail, correspondence, satellite and television featuring a wide variety of educational topics. Courses are offered at centers in Charleston and Oak Hill and other locations that best meet the needs of students, business and industry.

Students enrolled in Extended Education courses may be admitted under several different categories:

- 1) **Special Students,** who are (1) high school juniors or seniors, preferably with a 2.5 scholastic average and with approval of their principal; (2) high school graduates not pursuing degrees; or (3) adults without a diploma but who have passed the GED test. Special students take fewer than 12 hours of course credit.
- 2) **Auditors** take no examinations and receive no grades or credits for courses audited and cannot later receive credit by examination for courses audited.
- 3) High School Graduates who are taking courses that lead to a college degree.

Additional information about admission is available from the Director of Admissions and from the Director of Extended and Continuing Education by calling 442-3200. The Extended Education Office in Montgomery is located in the Center for Instructional Technology (CIT), Vining Library.

Continuing Education

Education is a lifelong process. WVU Tech and the CTC at WVU Tech recognize that concept by offering a wide variety of courses, activities, programs, and workshops to meet the needs of a diversified clientele. Included are workforce development training and retraining, general interest and community service offerings, workshops and short courses for professionals

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in business and industry, and special classes, seminars and workshops for women, business personnel, local government officials, and health professionals.

Offerings vary in length from one hour to several weeks and are distributed throughout the year. Classes are taught by qualified instructors, and professional workshops are conducted by recognized specialists. Participants who successfully complete approved continuing education offerings will receive a corresponding unit of credit, the Continuing Education Unit (CEU). One CEU is awarded for each 10 contact hours of successful participation in an organized continuing education experience under responsible sponsorship and instruction. The CEU is used for the measurement, recording, accumulation, transfer, and recognition of participation, but not for academic credit. A permanent record of CEUs is maintained in the Registrar's Office.

The purpose of the Community Service program is to provide continuous learning opportunities for all adults and to encourage and assist in the self-improvement of the individual learner. Specialized programs are offered for individuals working in businesses and industry. Changing conditions require adults to be continuously retrained to keep pace with technological advancements.

The Center for Instructional Technology in Vining Library on the Montgomery campus houses the offices of Community Service. Those desiring information on Community Service may call 442-3200 or 465-0546 (Oak Hill).

Students participating in the above noncredit activities do not have to meet the admissions requirements of the institution.

Southern Appalachian Labor School (SALS)

SALS is a partner with WVU Tech in a number of community based youth, housing, and education initiatives. Examples include Youthbuild, 21st Century "Acent Education" Community Learning Center, AmeriCorps VISTA America Reads Challenge, Community Partnership Program, Energy Express, a K-12 learn and serve. The SALS mission is to provide education, respect and linkages to promote understanding, empowerment and change. This is accomplished in part with involving people, including WVU-Tech students, in community service. For program information, call 442-3157 or come to COBE room 327.

Academic Common Market Out-of-State Programs at Reduced Tuition

West Virginia provides opportunities for its residents who wish to pursue academic programs not available within the state through the Academic Common Market and through contract programs. Both programs provide for West Virginians to enter out-of-state institutions at reduced tuition rates. Contract programs have been established for graduate study in optometry, and podiatry; the Academic Common Market provides access to both baccalaureate and graduate programs not otherwise available in West Virginia. The programs are restricted to West Virginia residents who have been accepted for admission to one of the specific programs at designated out-of-state institutions. The Academic Common Market also provides opportunities for residents of other states, including Kentucky, Maryland, and Virginia 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. Further information for West Virginians may be obtained through the West Virginia Higher Education Policy Commission, 1018 Kanawha Boulevard East, Charleston, WV 25301.

Special Programs Judith Herndon Program Frasure-Singleton Student Intern Program

WVU Tech participates annually in the Frasure-Singleton Student Intern Program and the Herndon Program with the West Virginia state legislature. The programs are open to any upper level student who has taken American Federal Government (POLS-102) or State and Local Government (POLS-312). Frasure-Singleton students serve on the staff of a legislator for one week during the annual session of the legislature. Herndon students serve an entire semester. Credit is arranged. For information, contact Dr. James Oxendale in the College of Business, Humanities & Science, 442-3120, Room 319 COBE Building.

WVU Tech Community Partnership Program

WVU Tech students, staff and faculty work to provide low-income families with safe housing in the New River Region through the Community Partnership Project.

WVU Tech will work with Housing projects sponsored by the Southern Appalachian Labor School to identify low-income families whose homes need rehabilitation and provide assistance. The assistance will consist of working with Youthbuild Members, community volunteers, and other college students. WVU Tech students are invited to participate for various periods of time ranging from several days to a full week.

The housing project is funded by state, federal, and private grants. It provides an opportunity for enhancing economic development with real-world education for students and expands WVU-Tech's service learning into the curriculum, promoting economic development, assisting with welfare reform initiatives, and developing long-lasting partnerships with communities. WVU Tech students interested in participating in the project may contact Ruth Lanham at 442-3157 or come to Room 327 COBE for further information.

Ameri Corps WIA Program and Housing Specialists

WVU Tech provides offices for VISTAs and housing specialists in Room 323, 214 and 320 COBE.

Vista workers have been instrumental in recruiting community members, college students, and high school students as reading volunteers for Let's Read WV, Read Aloud, and Energy Express.

The housing specialists provide information and support for community service projects of which Energy Express and housing projects are a priority.

Energy Express is a six-week summer program to enhance the reading levels of children K-12. Energy Express provides breakfast and lunch for children in Fayette County.

⁹⁷ College of Business, Humanities and Sciences

COLLEGE OF BUSINESS, HUMANITIES AND SCIENCES

GENERAL INFORMATION

The College of Business, Humanities and Sciences constitutes a significant part of West Virginia University Institute of Technology. It includes 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 he lives; to foster an understanding and appreciation of the human, cultural, economic, political, environmental, ecological, scientific, 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.

More than any other area of the institution, the college provides for the needs and interests of students in the entire college. All four-year programs require a minimum of forty-one semester hours and two-year programs require nineteen semester hours in core curriculum courses designed to meet the broad functions of the college and to assure students the breadth of knowledge deemed essential to an educated person. They include courses from humanities, social sciences, natural sciences, and mathematics.

The College of Business, Humanities and 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 extension courses designed to meet the changing needs and interests of the region and the state. Within the college is the nontraditional Regents B.A. program which allows credit for relevant work experiences and is tailored to meet the needs of working adult students. Programs designated as (+2) require an appropriate associate degree for admission.

Degree Programs:

Accounting, B.S. (Also joint B.S. / M.B.A.) Athletic Coaching Education, B.S. Bachelor of Applied Science, Criminal JusticeAdministration Emphasis, B.A.S. Biology, B.S. Business Management, B.S. Career-Technical Education, B.S. Chemistry, B.S. Health Services Administration, B.S. Health Services Adminsitration, B.S. (+2) Health Services Administration, B.S. (+2) (Track for A.S. in Office Technology Management) History and Government, B.A. Industrial Relations & Human Resources, B.S. Interdisciplinary Studies, B.A./B.S. Management Information Systems, B.S. Mathematics, B.S. Nursing, B.S.N. Printing Management, B.S. (+2)

Public Service Administration, B.S. (Regular)
Public Service Administration/Community Economic Development Track, B.S.
Public Service Administration/Construction Administration Track, B.S.
Public Service Administration/Criminal Justice Administration Track, B.A.S. (+2)
Public Service Administration/Law and Legal Services Administration/Track, B.S.
Public Service Administration/Non-Profit Administration Track, B.S.
Regents. B.A.
Sport Management, B.S.
Technology Management, B.S. (+2)

Minors:

Accounting Biology Business Administration Chemistry Economics Economics for Engineers & Engineering Technology Finance Graphic Design History

Transfer Programs:

Psychology 2 + 2 WVU

Human Resources Administration International Business Management Science Marketing Mathematics Management Information Systems Political Science Sociology Sports Management

Teacher Education 2 + 2 WVU

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BACHELOR OF APPLIED SCIENCE (BAS)

The Bachelors of Applied Science (BAS) degree is designed to provide an opportunity for students who possess an Associate of Applied Science (AAS) degree to obtain a bachelor's degree.

Graduates of community and technical colleges need opportunities to continue their education in areas that best meet their education goals. Meeting the educational goal of A.A.S. students greatly meets the needs of the regional workforce in West Virginia.

This proposed degree addresses the needs of individuals whose educational goals are not being met through traditional degree programs.

This degree, approved by the Higher Education Policy Commission, may be offered by baccalaureate degree granting public colleges and universities in West Virginia. Institutional degree programs must conform to the statewide guidelines and must be filed with the Higher Education Policy Commission office.

Admissions:

- Must possess an Associate of Applied Science (AAS) degree from a regionally accredited institution
- Must meet all general institutional admission requirements

Policies:

- The degree program and student must meet all institutional academic policies
- Residency requirement will be 24 hours from the degree granting institution

Curriculum:

- Degree 120-128 hours
- AAS Degree Minimum of 60 hours
- General Education 42-48 hours (includes AAS General Education hours. Courses must be distributed among all the following categories)
- Communication(s)
- Natural Science
- Mathematics
- Computer/Information Technology
- Social Sciences/Humanities/Fine Arts
- Upper division requirement 40 hours
- Area of emphasis requirement A minimum of 24 hours beyond the AAS degree. Areas of emphasis may be any area that meets regional workforce needs and its reflective of institutional strength. Some suggested areas of emphasis are the following:
- Criminal Justice Administration (with AAS in Corrections)
- Management/Supervision
- Technology
- Occupation Safety

ACCOUNTING

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 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 are prepared to pursue graduate work as well as to seek professional certifications such as Certified Management Accountant (CMA), Certified Internal Auditor (CIA), and Certified in Financial Management (CFM). On completion of 90 hours, students have the option to enter the Joint BS/MBA program and earn a B.S. degree from WVU Tech and an MBA degree from Marshall University Graduate College. This track includes 21 additional undergraduate/graduate credit hours and enables students to sit for Certified Public Accountant's (CPA) exam. Contact chair for details.

Note: Restricted electives must be taken from ACCT-345, ACCT 420, ACCT 431, ACCT-444, ACCT-447, ACCT-448.

Accounting Bachelor of Science

TECH ACCT ENGL MATH OTEC SCI	100 201 101 124 100	First Semester Freshman Seminar Principles of Accounting I English Composition I Finite Math I Office Keyboarding or Elective* Laboratory Science	$\begin{array}{c}1\\3\\3\\3\end{array}$	CMIS 101 ACCT 202 ENGL 102 SCI	Second Semester Fund. of Comp. Applications Principles of Accounting II English Composition II Laboratory Science Elective	$3 \\ 3 \\ 3 \\ 4 \\ 3 \\ 16$
ACCT SS COR MGMT BLAW PHED HU	342 E 386 301 101	Third Semester Intermediate Accounting I (ECON 231) Principles of Economics I Business Statistics Business Law I Lifetime Activities Humanities Elective	3 3 3 1 3	ACCT 343 SS CORE HLTH 102 BLAW 302 HU	Fourth Semester Intermediate Accounting II (ECON 232) Principles of Economics II Lifetime Health Business Law II Humanities Elective General Elective-Core 8	3 3 2 3 3 3 3
			16			17
FINC ACCT MGMT HU/SS ACCT	325 432 381 442	Fifth Semester Financial Management I Cost Accounting Fund. Of Management General Elective Core 6 Advanced Accounting I	3 3 3 3	FINC 326 ACCT 348 ACCT 445 MKTG 330	Sixth Semester Financial Management II Financial Statement Analysis Acct. Information Systems Restricted Elective Marketing	3 3 3 3 3
			15			15
	S	eventh Semester			Eighth Semester	
ACCT MGMT ENGL	446 480 305	Income Tax Accounting Management Science I Technical Writing Restricted Elective	$ \begin{array}{c} 3 \\ 3 \\ 6 \\ $	ACCT 450 ECON 331	Acct. Technology Money, Banking and Fiscal Policy Restricted Elective Electives	3 3 3 9 -18

* Note: Students complete community service requirements and take the ETS Business test prior to graduation.

Accounting

Bachelor of Science - Information Technology Track

The Information Technology Track blends accounting and information technology education to meet the emerging demand for "hybrid" professionals. It includes a blend of theory and practice and incorporates applied projects. Graduates should be well equipped to fill a wide range of accounting and finance positions particularly those, which are in information technology intensive functions. Additionally, the curriculum provides students with academic qualifications to take the examinations to become Certified Information Systems Auditor (CISA), Certified Internal Auditor (CIA), Certified Management Accountant (CMA), and Certified Financial Manager (CFM). Students can qualify to take the Certified Public Accountant's CPA) exam by taking additional 21 undergraduate/graduate credit hours.

Note: Restricted electives must be taken from ACCT-345, ACCT-348, ACCT 420, ACCT-444, ACCT-447, & ACCT-448.

		First Semester			Second Semester	
TECH	100	Freshman Seminar	1	CMIS 162	Fund. of Comp. Information Sys.	3
ACCT	201	Principles of Accounting I	3	ACCT 202	Principles of Accounting II	3
ENGL	101	English Composition I	3	ENGL 102	English Composition II	3
MATH	124	Finite Math I	3	CMIS 164	Visual Basic for Business Appl.	3
CMIS	101	Fund. of Comp. Applications	3	SCI	Laboratory Science	4
SCI		Laboratory Science	4			
			17			16
	,	Third Semester			Fourth Semester	
ACCT	342	Intermediate Accounting I	3	ACCT 343	Intermediate Accounting II	3
SS COR	E	Principles of Economics I	5	SS CORE	Principles of Economics II	5
55 001		(ECON-231)	3	SS COLL	(ECON-232)	3
MGMT	386	Business Statistics	3	CMIS 163	Internet Applications	3
BLAW	301	Business Law I	3	BLAW 302	Business Law II	3
HU		Humanities Elective	3	HU	Humanities Elective	3
ACCT	432	Cost Accounting	3	PHED 101	Lifetime Activities	1
			18			16
		Fifth Semester			Sixth Semester	
CMIS	360	Systems Analysis Methods	3	CMIS 361	Structured Systems Design	3
FINC	325	Financial Management I	3	FINC 326	Financial Management II	3
MGMT	381	Fundamentals of Mgmt.	3	ACCT 445	Accounting Info. Systems	3
ACCT	442	Advanced Accounting I	3	MKTG 330	Marketing	3
HU/SS		General Elective-Core 6	3		Elective	3
			15			15
	S	eventh Semester			Fighth Semester	
ACCT	446	Income Tax Accounting	3	ACCT 450	Acct. Technology	3
ACCT	431	E-Commerce. Information		ACCT 430	InformationTechnology Auditing	3
		Security & Control	3	HLTH 102	Lifetime Health	2
ENGL	305	Technical Writing	3		General Elective - Core 7	3
MGMT	480	Management Science I	3		Restricted Elective	3
		Restricted Elective	3		Elective	2
			15			16

** Note: Students must complete community service requirements and take the ETS Business Test prior to graduation.

Accounting

Bachelor of Science - Fraud Management Track

Businesses today are looking for accountants for assistance in investigating fraud and/or strengthening their internal controls and business practices to prevent fraud. The Fraud Management Track provides the knowledge and skills necessary to prevent, detect and deter perpetration of fraud. This track prepares students for positions in fraud analysis, fraud investigation, fraud examination, and compliance in business, govt. and not-for profit organizations. Additionally, the curriculum provides students with academic qualifications to take the examinations to become a Certified Fraud Examiner (CFE), Certified Internal Auditor (CIA), Certified Management Accountant (CMA), and Certified Financial Manager (CFM). Students can qualify to take the Certified Public Accountant's (CPA) exam by taking additional 21 undergraduate/graduate credit hours.

NOTE: Restricted electives must be taken from ACCT-345, ACCT 444, ACCT-447, & ACCT 448.

TECH ACCT ENGL MATH PHED SCI	100 201 101 124 101	First Semester Freshman Seminar Principles of Accounting I English Composition I Finite Math I Lifetime Activities Laboratory Science	$ \begin{array}{c} 1\\3\\3\\3\\1\\4\\\hline 15\end{array} $	CMIS 101 ACCT 202 ENGL 102 SCI	Second Semester Fund. of Computer Applications Principles of Accounting II English Composition II Laboratory Science Elective	$ \begin{array}{r} 3 \\ 3 \\ 4 \\ 3 \\ \hline 16 \end{array} $
ACCT SS COR MGMT BLAW HU ACCT	, 342 E 386 301 432	Third Semester Intermediate Accounting I Principles of Economics I (ECON-231) Business Statistics Business Law I Humanities Elective Cost Accounting	3 3 3 3 3 3 -18	ACCT 343 SS CORE HLTH 102 BLAW 302	Fourth Semester Intermediate Accounting II Principles of Economics II (ECON-232) Lifetime Health Business Law II Humanities Elective General Elective-Core 6	3 3 2 3 3 3 $-$ 17
ACCT FINC MGMT ACCT	420 325 381 442	Fifth Semester Fraud Examination Financial Management I Fundamentals of Mgmt. Advanced Accounting I General Elective-Core 8	$\begin{array}{c}3\\3\\3\\3\\3\end{array}$	ACCT 421 FINC 326 ACCT 445 ACCT 348 MKTG 330	Sixth Semester Fraud Mgmt: Legal/Ethical Issues Financial Management II Accounting Info. Systems Financial Statement Analysis Marketing Elective	3 3 3 3 2 $-$ 17
ACCT ACCT ENGL MGMT	S 446 431 305 480	eventh Semester Income Tax Accounting E-Commerce, Information Security & Control Technical Writing Management Science I Restricted Elective	3 3 3 3 $\overline{15}$	ACCT 450 ACCT 430 ACCT 422	Eighth Semester Acct. Technology Information Technology Auditing Adv. Fraud Investigation & Analysis Restricted Elective Electives	$\begin{array}{c}3\\3\\3\\3\\3\\-\\17\end{array}$

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** Note: Students must complete community service requirements and take the ETS Business Test prior to graduation.

Joint B.S. (Accounting) and MBA Degree Program

The Joint B.S./MBA degree program allows the student to finish two degrees at the same time a bachelor's degree in Accounting from West Virginia University Institute of Technology and a Master's degree in Business Administration from Marshall University Graduate College/ Lewis College of Business/Graduate School of Management(GSM). This combination satisfies the 150 hours requirement to sit for the CPA examination under new rules.

Under the combined degree program, the student is admitted to West Virginia University Institute of Technology as an undergraduate student. At the end of the junior year, the student would apply to Marshall University Graduate College for entrance into the combined program. Entrance to the program requires the completion of 90 credit hours with a grade point average of 3.0 or better and the completion of the following courses (with a grade of B or better in each course): Principles of Economics (2 courses), Principles of Accounting (2 courses), Calculus, Marketing, Fundamentals of Management, Business Statistics, Financial Management, Management Science, and Fundamentals of Computers. In addition, a student must score 500 or above on the Graduate Management Admission Test and be classified as a senior at the time of admission.

Goals for Joint B.S. (Accounting) + MBA-Program

In addition to the general education learning outcomes listed elsewhere in the catalog, the"**Joint B.S.** (Accounting) + MBA Program Goals include the following:

- 1. To provide quality education in accounting and finance, and the knowledge and necessary technical skills to students.
- To maintain a curriculum relevant to the changing needs of the professional environment and incorporate current accounting technology.
- 3. To prepare well-rounded students for i) entry into an accounting career in business, industry, or government, and ii) entry into graduate school.
- 4. To encourage students to recognize the need for lifelong learning, continuing education, and professional ethics for subsequent career success.
- 5. To encourage students to seek available professional certifications in accounting.

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

Understand and apply the generally accepted accounting principles.

Know the accounting cycle and the characteristics of manual and computerized accounting systems.

Understand how accounting information systems are designed, and implemented.

Prepare, interpret and **analyze** financial statements for a proprietorship, partnership, and corporation.

Use accounting software for financial reporting.

Know and apply the tax fundamentals to the preparation of individual tax returns.

Understand and apply the cost concepts to planning, budgeting, and managerial decision making.

Understand the importance of critical thinking and written communication skills.

Deal with problem solving in unstructured situations.

Understand the code of professional ethics for accountants.

Joint B.S. (Accounting) + MBA Program Plan of Study

Offered by West Virginia University Institute of Technology

Core Curriculum (To include)

44 Credit Hours

ENGL	101	English Composition I	3 hours
ENGL	102	English Composition II	3 hours
MATH	124	Finite Math I	3 hours
CMIS	101	Fundamentals of Computer Applications	3 hours
PHED	101	Physical Education	1 hours
HLTH	102	Lifetime Health	2 hours
ENGL	305	Scientific Technical English	3 hours
		Humanities	6 hours
		Social Sciences	6 hours
		Electives - Core 6 & 8	6 hours
		Science	8 hours

Business Core (To include)

40 Credit Hours

30 Credit Hours

ACCT	201/202	Principles of Accounting	6 hours
MGMT	386	Business Statistics	3 hours
BLAW	301/302	Business Law	6 hours
ECON	231/232	Principles of Economics	6 hours
FINC	325/326	Financial Management	6 hours
MKTG	330	Marketing	3 hours
MGMT	480	Management Science	3 hours
ECON	331	Money, Banking & Fiscal Policy	3 hours
MGMT	381	Fundamental of Management	3 hours
TECH	100	Freshmen Orientation	1 hour

Accounting Major (To include)

ACCT	342/343	Intermediate Accounting	6 hours
ACCT	432	Cost Accounting	3 hours
ACCT	442	Advanced Accounting	3 hours
ACCT	446	Income Tax I	3 hours
ACCT	445	Accounting Information System	3 hours
ACCT	450	Accounting Technology	3 hours
		*Restrictive Electives	9 hours
		General Electives (1)	6 Credit Hours
MATH	155	Calculus I	3 hours
SPCH	250	Speech	3 hours

Sub-Total Undergraduate Hours

120 Credit Hours
108 Offered by the Marshall University Graduate College

Core Courses 30 Credit Hours

Qualitative Controls in Business	3 hours
Profit Planning & Control	3 hours
Managerial Economics	3 hours
Finance Management 3 hours	
Theories of Management	3 hours
Advanced Marketing Management	3 hours
Operations & Productions Management	3 hours
US & the Global Economy	3 hours
Government & Business Relationships	3 hours
Business Policy & Strategy	3 hours
Electives	6 Credit Hours
Subtotal Graduate Hours:	36 Credit Hours

Total 3/2 Program Hours for BS/MBA Degrees

156 Credit Hours

*Recommended restricted elective: ACCT 445, ACCT 444, and ACCT 345

ATHLETIC COACHING EDUCATION

The School of Physical Education 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.

In the first 33 credit hours of course work, students will take courses in the Pre-Athletic Coaching Education Program. Applicants must have a 2.0 GPA and have completed probationary courses required for admission to the program. A total of 128 hours (minimum) are required for graduation.

Department of Physical Education Program Learning Outcomes

In addition to the general education learning outcomes listed elsewhere in the catalog, this program has the following specific outcomes:

- 1. Graduates may work in area businesses and coach locally
- 2. Graduates may apply for graduate school and graduate assistantships in coaching
- 3. Graduates will recognize the importance and significance of the role of coaching
- 4. Graduates will recognize the importance of continuing emotional, social, intellectual, and physical development throughout their lives

Bachelor of Science

	First Semester			Second Semester	
ENGL	101 English Composition I	3	ENGL 102	English Composition II	3
PHED	164 Weight Training	1	PHED 165	Conditioning	1
BIOL	111 General Biology*	4	BIOL 112	General Biology*	4
PHED	104 Basketball Skills	1	PHED 130	Football Skills	1
PHED	157 Base/Soft Skills	1	CMIS 101	Fundamentals/Computers	3
PHED	106 Intro. to Sports	3	SOCI 101	Principles of Sociology*	3
PSYC	221 General Psychology	3	HLTH 102	Lifetime Health	2
TECH	100 Freshman Seminar	1	PHED 159	Soccer Skills	1
	17		18		
	Third Semester			Fourth Semester	
MATH	121 Basic Math*	3	PHED 170	Volleyball Skills	1
HIST	101 World Civilization*	3	HIST 102	World Civilization*	3
PHED	125 Track Skills	1	PHED 100	Total Athlete	3
PHED	172 CPR/First Aid	3	POLS 316	Comparative Government*	3
PHED	105 Nutrition for Coaches	3	PHED 121	Sport & Ini, Control	3
PHED	256 Prin. & Problems	3	ARTS 113	Art Appreciation*	3
				II · · · · ·	
		16			16
	Fifth Semester			Sixth Semester	
SPCH	250 Speech Comm	3	PSYC 241	Life-Span Psychology	3
PHED	187 Golf Skills	1	PHED 161	Tennis Skills	1
PHED	271 Sociology of Sport	3	PHED 330	Coaching Administration	3
PHED	421 Exer/Physiology	3	PHED 272	Psychology of Coaching	3
PHED	368 Sport Move. Analysis	3	PHED 422	Kinesiology	3
	Tech of Coaching	2		Tech of Coaching	2
	Elective	3		Techniques of Coaching	2
		$\overline{18}$			17
	Seventh Semester			Eighth Semester	
PHED	491 Internship	3	PHED 494	Senior Seminar	3
PHED	426 Sport Law	3	PHED 491	Internship	9
PHED	380 History & Phil. Of Sport	3	PHED 101	General Program	1
	Elective	3	PHED 101	General Program	1
		10			
		12			14

* Suggested GEC courses. Other courses will substitute. See Advisor for options.

BIOLOGY

Biology is an interdisciplinary program with a strong base in the sciences. Students in biology may tailor the program to their own needs and interests by electing courses from a number of disciplines. By careful choice of courses students may fulfill the standard requirements for entrance into graduate school in biology or biologically related fields or to professional schools for degrees in medicine, pharmacy, cytotechnology and other health-related fields. Students may also enter careers in a variety of areas including environmental biology, industry, and federal or state governments. These careers often require a B.S. in Biology for entry-level positions.

The designation of 10 restricted elective hours in the program provides the student with the opportunity to select courses from the disciplines of biology, chemistry, physics, math, computer science, business, psychology, health sciences, and/or engineering. (Students that select electives in any science or technical areas may need additional math courses to meet prerequisites.) The restricted electives must be approved by the assigned biology advisor. No student may enter an upper division BIOL course without having earned a "C" or better in the freshman biology courses. During the last semester of the program, a comprehensive assessment exam must be passed at the 50% level.

Program Learning Outcomes

In addition to the general education learning outcomes listed elsewhere in the catalog, this program has the following specific outcomes:

Upon graduation students of the biology program will be able to demonstrate

1. The ability to use the scientific approach to solving problems.

2. Skill and confidence in the use of laboratory equipment and knowledge of safety practices in the laboratory.

3. The ability to perform searches of the biological literature, exhibit intelligent reading and interpretation of the literature, and use scientific literature property in the writing of a scientific paper.

4. Knowledge of the fundamental biological concepts and processes necessary for the pursuit of a career as a biological scientist.

5. Facility with the basic vocabulary and knowledge of cellular, molecular, and organismal biology which will enable them to pursue further studies in biology and give them a background for life-long learning in biology.

Biology **Bachelor of Science**

BIOL ENGL TECH MATH HIST	111 101 100 126 101	First Semester General Biology English Composition I Freshman Seminar College Algebra SS Core World Civilization	4 3 1 3 3 3	BIOL 112 ENGL 102 MATH 128 CMIS 101 HIST 102	Second Semester General Biology English Composition II Trigonometry Fund. of Comp. App. World Civilization	4 3 3 3 3
			17			16
BIOL CHEM PHYS STATS	115 201 211	Third Semester Human Bio 231 or 233 College Chemistry College Physics Stats for H1th Science	$\begin{array}{c} 4\\ 4\\ 4\\ 3\\ \hline 15 \end{array}$	BIOL 240 CHEM 116 PHYS 202	Fourth Semester Microbiology College Chemistry College Physics Communications Core	$\begin{array}{r} 4\\ 4\\ 4\\ 3\\ \hline 15 \end{array}$
BIOL CHEM CHEM BIOL	233 235	Fifth Semester Botany Elective Organic Chemistry Organic Chem. Lab. Biology Elective Restricted Electives Unrestricted Electives	4 3 1 4 3 2 	BIOL 303 CHEM 234 CHEM 236 BIOL 465	Sixth Semester Genetics Organic Chemistry Organic Chem. Lab. Evolutionary Biology General Elective Core SS Core	4 3 1 3 3 3
BIOL BIOL BIOL	S 416 494	eventh Semester Cell Biology Zoology Elective General Elective Core Restricted Electives Seminar in Biology		BIOL 466 BIOL	Eighth Semester Ecology Biology Elective Restricted Electives Unrestricted Electives	

Biology Minor 24 semester hours minimum including BIOL-111, 112, plus 16 hours of BIOL courses which must include at least 8 credits of 300+ level courses.

BUSINESS MANAGEMENT

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, MGMT, MKTG, ACCT, ECON, FINC, and CMIS. The program requirements for electives and restricted electives allow the student to obtain a minor in management science, marketing, accounting, finance, economics, human resources administration, computer information systems, or international business. 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 Learning Outcomes

In addition to the general education learning outcomes listed elsewhere in the catalog, graduates of the Business Management program will:

- 1. Know how to apply the four functions of management to improve organizational performance.
- 2. Be able to perform a SWOT analysis.
- 3. Be familiar with federal EEO legislation and understand the importance of compliance in all aspects of employment.
- 4. Understand how various factors impact organizational performance.
- 5. Develop the necessary analytical, computer, and communication skills to analyze data and to present findings.
- 6. Be able to identify an organization's stakeholders and evaluate the impact ethical decision making will have upon the organization's performance.
- 7. Be able to develop a Marketing Plan.

Business Management Bachelor of Science

TECH 10 ENGL 10 MATH 12 OTEC 10 HU SCI	00 01 24 00	First Semester Freshman Seminar English Composition I Finite Math I Office Keyboarding or Elective* Humanities Laboratory Science (1st)	$ \begin{array}{c} 1\\3\\3\\\\2\\3\\4\\\hline16\end{array} $	CMIS 101 ENGL 102 MGMT125 HU SCI HU	Second Semester Fund. of Comp. Applications English Composition II Career Devel. and Opportn. Humanities Laboratory Science (2nd) Humanities	3 3 3 3 4 3 16
ACCT ECON SOCI PSYC PHED HLTH OTEC	201 231 101 221 101 102 280	Third Semester Principles of Accounting I Principles of Economics I Principles of Sociology General Psychology Lifetime Activities Lifetime Health PowerPoint	$\begin{array}{c}3\\3\\3\\1\\2\\1\\\hline16\end{array}$	ACCT 202 ECON 232 SOCI MGMT386 OTEC 280 0 OTEC 280 0	Fourth Semester Principles of Accounting II Principles of Economics II Core Elective General Elective Core Business Statistics or 282 or 282	$ \begin{array}{r} 3 \\ 3 \\ 3 \\ 3 \\ 1 \\ 1 \\ 17 \end{array} $
MKTG FINC BLAW ECON MGMT	330 325 301 301 381	Fifth Semester Marketing Financial Management I Business Law (or 302) Intermediate Theory of Price and Markets Fundamentals of Mgmt Restricted Electives	$\begin{array}{c}3\\3\\3\\3\\3\\3\\\overline{}\\18\end{array}$	MKTG ENGL 305 MGMT382 ACCT 331	Sixth Semester Marketing Elective Sci/Tech Writing Operations Mgt. Managerial Accounting Restricted Electives	$3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 15$
MGMT MGMT	S 487 482	eventh Semester Organizational Behavior Human Resource Mgmt. Electives Restricted Electives	$\begin{array}{c}3\\3\\6\\\hline15\end{array}$	MGMT485 MGMT488	Eighth Semester Business Simulation Strategic Management Electives	$3 \\ 3 \\ 9 \\ \hline 15$

* Students with less than one year of typewriting shall take OTEC 100

NOTE: Prior to graduation, students must: (1) take the ETS Business test and (2) complete the core Citizenship requirement.

CAREER-TECHNICAL EDUCATION

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 the state during the fall and spring semesters. Students who meet the state requirements, take advantage of advanced professional development opportunities, and meet core curriculum requirements will be awarded the Bachelor's Degree in Career-Technical Education. Enrollment is limited to those currently employed as teachers in a vocational program area.

For additional information: 442-3125

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

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

- 1. Incorporate learning goals into instructional plans.
- 2. Incorporate intended learning outcomes & learning objectives into instructional plans.
- 3. Incorporate student characteristics into instructional plans for purposes of instructional design.
- 4. Incorporate teacher characteristics into instructional plans.
- 5. Apply a personal framework for teaching in development an instructional plan.
- 6.Plan instructional strategies that are consistent with intended learning outcomes and objectives.
- 7. Select, develop, and modify instructional materials to meet intended learning outcomes and objectives.
- 8. Determine appropriate classroom procedures and organizational strategies to support the instructional environment.
- 9. Incorporate information from various sources in planning for instruction.
- 10. Select assessment or evaluation strategies to measure learning outcomes, objectives, and instructional effectiveness.
- 11. Maintain a positive learning environment to support mastery of learning outcomes and objectives.
- 12. Communicate with students to provide a context for learning that is consistent with instructional plans.
- 13. Organize students, materials, and the classroom environment in ways that are consistent with instructional plans.
- 14. Manage the instructional environment to enhance student learning and development consistent with instructional plans.
- 15. Implement a variety of instructional strategies and materials consistent with instructional plans.
- 16. Utilize questioning strategies consistent with instructional plans.
- 17. Provide verbal and/or nonverbal feedback to students.
- 18. Evaluate the effectiveness of the instructional process.
- 19. Evaluate student progress toward mastery of learning outcomes and objectives.

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- 20. Organize, interpret, and summarize evaluation data for instructional planning and delivery and management.
- 21. Report student evaluation results to students, parents, and appropriate school administrative personnel.
- 22. Use available evaluation results.
- 23. Establish and implement a continuing education plan to meet personal and professional goals.
- 24. Demonstrate management skills to carry out nonteaching responsibilities.
- 25. Follow school policies, rules, and regulations.
- 26. Demonstrate skills necessary to work with school committees and community groups.

CAREER-TECHNICAL EDUCATION

Bachelor of Science

		First Semester			Second Semester	
CTED	100	Career Technical Teacher Edu. On	i. 1	ENGL 102	English Composition II	3
ENGL	101	English Composition I	3	MATH	Mathematics or Computer Appl.	3
MATH		Mathematics	3	HU	Humanities Core	3
HU		Humanities Core	3	CTED 201	Introduction to ED	3
CTED	485	Teaching Methods in CTE	3	SS	Social Science Core	3
SS		Social Science Core	3			
			16			15
		Third Semester			Fourth Semester	
CTED	308	Appl of Basic Skills in CTED	3	CTED 304	Safety in CTED	3
		Lab Science Sequence	4		Lab Science Sequence	4
SPCH	250	Effective Speech	3	EDUC 201	Psychology of Development	3
CTED		Elective	2	CTED 303	Org. & Mgt. in CTED	3
CTED		Occupational Update	3	CTED 301	Occupational Analysis	3
			15			16
		Fifth Semester	_		Sixth Semester	
EDUC	300	School & Society (F-3)	3	CTED 305	Methods of Examination in CTED	3
EDUC	305	Psychology of learning	3	CTED 402	History & Philosophy of CTED	3
CTED	302	Course Construction & Planning	3	CTED 307	ComputerApplications in CTED	3
CIED	306	Coordination of Coop. in CTED	3	CIED 421	Teaching Special Students in CTED	3
		General Elective Core	3		General Elective Core	3
			15			15
	S	eventh Semester			Eighth Semester	
CTED	409	Coord of Career Tech		CTED 425	Occupational Undate	3
01LD	,	Student Act.	3	0120	Occupational Competency Exam	15
		Occupational Competency Exam	15		competency Exam	
		I I J				
			18			18

* SPCH-250 and ENGL-202 or ENGL-305 may be used for Humanities Sequence EXP 1 & 2

CHEMISTRY

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 128 hours minimum is required for the Bachelor of Science in Chemistry. The following courses are required by the Chemistry Department: CHEM-115, 116, and 215 or CHEM-117 and 118; CHEM-233, 234, 235, 236, 310, 313, 322, 323, 346, 347, 348, 349, 462; 4 hours of CHEM-464 and/or 465; MATH-155, 156, 251, 261; PHYS-213, 214; 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 103 to 104 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:

- 1. Students to apply fundamental chemical concepts and relationships in the solution of diverse scientific problems.
- 2. Students with knowledge and application of chemical analytical instrumentation, experimental design, and scientific data collection and interpretation.
- 3. Students with diverse laboratory skills and techniques.
- 4. Students with knowledge and application of good laboratory safety practices and environmental responsibility.
- 5. Students with the ability to effectively communicate technical information through writing and speaking.
- 6. Students 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.

ENGL PHED TECH CHEM MATH HU	First Semester101English Composition I101Physical Education100Freshman Seminar115Fundamentals of Chemistry I155Calculus IHumanities Core	3 1 4 4 3 -16	ENGL 102 HLTH 102 CHEM 116 MATH 156 PHYS 213	Second Semester English Composition II Lifetime Health Fundamentals of Chemistry II Calculus II Phys. for Science & Engr. I	3 2 4 4 4 4 7 7
CHEM CHEM CHEM MATH PHYS	Third Semester 233 Organic Chemistry I 235 Organic Chemistry Lab. 215 Analytical Chemistry I 251 Multivariable Calculus 214 Phys. for Science & Engr. II	3 1 4 4 4 4 4 16	CHEM 322 CHEM 323 CHEM 234 CHEM 236 MATH 261 HU	Fourth Semester Chemistry of Inorganic Compd. Inorganic Synthesis Laboratory Organic Chemistry II Organic Chemistry Lab. II Elem. Differential Equations Humanities Core	3 1 3 1 4 3 $$ 15
CHEM CHEM ENGL SS	Fifth Semester346Physical Chemistry I347Physical Chemistry Lab. I305Scientific Technical Writing Social Science Core Restricted Electives	$3 \\ 1 \\ 3 \\ 3 \\ 6 \\ -16$	CHEM 310 CHEM 313 CHEM 348 CHEM 349 SS	Sixth Semester Analytical Chemistry II Analytical Chemistry Lab. II Physical Chemistry II Physical Chemistry Lab. II Social Science Core Restricted Elective	$3 \\ 1 \\ 3 \\ 1 \\ 3 \\ 6 \\ - 17$
CHEM CHEM HU/SS	Seventh Semester 462 Seminar in Chemistry Chemistry Electives General Core Elective Restricted Electives Assessment Examination	$ \begin{array}{c} 1\\ 6\\ 3\\ 6\\ \hline 16\\ \end{array} $	CHEM 465 CHEM	Eighth Semester Research Practicum Elective Chemistry Elective Restricted Electives	4 3 6

For Chemistry Minors: A total of 24 hours minimum is required including CHEM-115, 116, 215, 233, 234, 235, 236; CHEM-346 and 347 or CHEM-348 and 349. The CHEM-117/118 sequence and an additional 200-level or higher course can replace the CHEM-115/116 sequence and CHEM-215.

HEALTH SERVICES ADMINISTRATION (With Minors and Emphasis Areas)

The College of Business, Humanities & Sciences 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 social sciences and management for research, social service, and administrative positions.

Career opportunities may be sought on many levels and in many different types of organizations. The possibilities include a wide variety of settings: hospitals, various types of 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 two program tracks provide alternative career training for students who are beginning their studies of health services administration in their Freshman year (Track A), as well as those who already possess career skills or degrees (Tracks B and C). With Track A, a student may complete a regular four-year program. Track B is available to students with an Associate degree (including Allied Health fields), Bachelor's degree in other fields, or 3-year Diploma RN certificates through complete ore and/or other program requirements. Associate degree students other than those with Allied Health degrees must complete core curriculum requirements in laboratory sciences. Track C is a "plus two" program for those with a complete associate degree in Office Technology Management.

Following the traditional interdisciplinary perspective in health services administration that encompasses social sciences with a public health emphasis and a concrete orientation in business principles, students in Track A may use the restricted electives to declare several minors or emphasis areas. With careful planning, a student may minor in history and government, economics, business administration, political science, sociology, or human resources administration. With the addition of only a few more hours, a student may use the restricted electives to gain an Associate degree in general business, data processing, or accounting.

One of the distinctive features of the program in Health Services Administration is the wide assortment of classes in business, political science, economics, and other applied areas. Special courses include Introduction to Health Care Organizations, Health Services Planning, Health Services Law and Legislation, Medical Sociology, and the Practicum in Health Services Administration. Some classes are offered at night in off-campus locations and particular attention is given to employed students so that they may work on their degrees.

Each student will participate in a semester-long supervised practicum capstone internship in which the student gains academic credit for administrative work experience in a cooperating health care facility.

In addition to the general education learning outcomes listed elsewhere in the catalog, this program has the following specific outcomes.

1. To educate future healthcare administrators in contemporary management and administrative matters and leadership skills.

2. To expose the student to a broad-based survey of healthcare organizations and healthcare professionals.

3. To expose the student to the legal implications of health services administration and

risk management.

4. To expose the student to healthcare administration techniques and to apply previously learned concepts and principles to the management and leadership situation.

5. To expose the student to the complexities of contemporary healthcare finance and administration with particular attentive given to the decision-making process, reimbursement trends, costs concepts, financial analyses, and capital formation and project analysis.

6. To expose the student to contemporary medical ethical issues and concepts and how to apply those principles and concepts to ethical situations that often appear in healthcare facilities.

7. To expose the student to the history and the development of healthcare planning in a variety of healthcare facilities and situations.

8. To train students for meaningful and productive careers in various healthcare settings including hospitals, clinics, providers offices, government, managed care organizations, long-term care, rehabilitation services, insurance, and others.

NOTE: All bachelor degree candidates must satisfy core curriculum requirements.

TRACK A Health Services Administration

Bachelor of Science

1 3 1 3 4	ENGL 102 HLTH 102 HU CORE SCI CORE CMIS 101	Second Semester English Composition II Lifetime Health Humanities Elective (2nd) Restricted Elective Laboratory Science (2nd) Fundamentals of Computer Applications	3 2 3 3 4 3
18			18
3 3 3 3 3	HUMS 340 HUMS 210 POLS 312 SS CORE ECON 240	Fourth Semester Research and Statistics Intro. to Social Welfare State and Local Government Principles of Economics II (ECON-232) Introduction to Labor Unions	3 3 3 3 3
15			15
$ \begin{array}{c} 3\\3\\3\\3\\-\\15\end{array} \end{array} $	HUMS 421 HUMS 410 HUMS 400	Sixth Semester Health Care Macro Finance Health Care Administration Health Law & Legislation Restricted Elective	$3 \\ 3 \\ 3 \\ 6 \\ - \\ 15$
$\begin{array}{c}3\\3\\3\\2\\3\\-17\end{array}$	SOCI 330 HUMS 320 HUMS 490	Eighth Semester Industrial Sociology Public Administration Practicum Capstone Internship *	$3 \\ 3 \\ 12$
	$ \begin{array}{c} 1 \\ 3 \\ 1 \\ 3 \\ 4 \\ 18 \\ 3 \\ 3 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 15 \\ 3 \\ 3 \\ 17 \\ 17 \\ 17 \\ 17 \\ 17 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10$	1 ENGL 102 3 HLTH 102 1 HU CORE 1 SCI CORE 3 CMIS 101 4 I8 3 HUMS 340 3 HUMS 210 9 POLS 312 3 SCORE 3 ECON 240	Second Semester 1 ENGL 102 English Composition II 3 HLTH 102 Lifetime Health 3 HU CORE Humanities Elective (2nd) 1 Restricted Elective Restricted Elective 3 SCI CORE Laboratory Science (2nd) 3 CMIS 101 Fundamentals of 4 Computer Applications

NOTE: Restricted electives must be approved by the student's advisor and may be used to declare a minor or emphasis area. *At the discretion of the advisor, the Health Services Administration practicum may be reduced with the addition of restricted electives.

**Must not be a Math course below the 100 level.

TRACK B Health Services Administration

Bachelor of Science Degree

First Two Years

Any Associate Degree Any Allied Health Degree Any 3 Year Diploma RN Certificate

CORE PRE-REQUISITE

SS CORE	Principles of Economics I (ECON-231)	3
MATH CORE	E Mathematics*	3
PHED 101	Lifetime Activities	1
HU CORE	Humanities (1st)	3
SS CORE	Principles of Economics II (ECON 232)	3
HLTH 102	Lifetime Health	2
HU CORE	Humanities (2nd)	3
SC CORE	Laboratory Science	8

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*Must not be a Math course below the 100 level.

SECOND TWO YEARS

Fifth Semester			Sixth Semester	
340 Research and Statistics	3	POLS 312	State and Local Government	3
430 Medical Ethics	3	ECON 240	Introduction to Labor Unions	3
300 Intro. to Health Care Org.	3	HUMS 210	Intro. of Social Welfare	3
321 Social Problems or	3	HUMS 320	Public Administration	3
343 Cultural Diversity		HUMS 410	Health Care Administration	3
101 Fund. of Comp. Applica.	3	HUMS 421	Healthcare (Macro) Finance	3
221 Principles of Sociology	3			
	18			18
Seventh Semester			Fighth Semester	
330 Marketing	3	HUMS 400	Health Ser Law & Legislation	3
420 Health Care Micro Finance	3	SOCI 330	Industrial Sociology	3
301 Medical Sociology	3	HUMS 400	Dracticum**	12
SODE Dell's Einstein (ECON 225)	2	1101013 490	Tacucum	12
ORE Public Finance (ECON-335)	3			
100 Community Service	2			
470 Health Care Planning	3			
	Fifth Semester 340 Research and Statistics 430 Medical Ethics 300 Intro. to Health Care Org. 321 Social Problems or 343 Cultural Diversity 101 Fund. of Comp. Applica. 221 Principles of Sociology Seventh Semester 330 Marketing 420 Health Care Micro Finance 301 Medical Sociology CORE Public Finance (ECON-335) 100 Community Service 470 Health Care Planning	Fifth Semester 340 Research and Statistics 3 340 Medical Ethics 3 300 Intro. to Health Care Org. 3 321 Social Problems or 3 343 Cultural Diversity 101 101 Fund. of Comp. Applica. 3 221 Principles of Sociology 3 18 Seventh Semester 330 Marketing 3 420 Health Care Micro Finance 3 301 Medical Sociology 3 CORE Public Finance (ECON-335) 3 100 Community Service 2 470 Health Care Planning 3	Fifth Semester340Research and Statistics3POLS312430Medical Ethics3ECON240300Intro. to Health Care Org.3HUMS210321Social Problems or3HUMS320343Cultural DiversityHUMS410101Fund. of Comp. Applica.3HUMS421221Principles of Sociology3	Fifth SemesterSixth Semester340Research and Statistics3POLS 312State and Local Government430Medical Ethics3ECON 240Introduction to Labor Unions300Intro. to Health Care Org.3HUMS 210Intro. of Social Welfare321Social Problems or3HUMS 320Public Administration343Cultural DiversityHUMS 410Health Care Administration101Fund. of Comp. Applica.3HUMS 421Healthcare (Macro) Finance221Principles of Sociology3-18Eighth Semester30Marketing3HUMS 400420Health Care Micro Finance3SOCI 330301Medical Sociology3HUMS 490Practicum**20REPublic Finance (ECON-335)3100Community Service2470Health Care Planning3-

**At the discretion of the advisor, the Health Services Administration practicum may be reduced with the addition of restricted electives.

NOTE: All bachelor degree candidates must satisfy core curriculum requirements.

Office Technology Management Health Services Administration (Track C)

(2nd two years for the Bachelor of Science)

Fifth Semester

Sixth Semester

ENGL	102	English Composition II	3	ECON 240	Intro to Labor Unions	3
HUMS	420	Health Care Micro Finance	3	HUMS 421	Health Care Macro Finance	3
HUMS	300	Intro to Health Organizations	3	HUMS 360	Research and Statistics	3
MATH	136	Finite Math	3	HUMS 210	Intro to Social Welfare	3
PSYC	221	General Psychology	3	HUMS 400	Health Law and Legislation	3
SOCI	343	Cultural Diversity or	3	POLS 212	State and Local Government	3
SOCI	321	Social Problems				
			18			18
Sever	nth S	Semester			Eighth Semester	
ECON	335	Public Finance	3	HUMS 320	Public Administration	3
HUMS	430	Medical Ethics	3	HUMS 410	Health Care Administration	3
MKGT	304	Marketing	3	HUMS 490	Practicum/Capstone/Internship	7
MGMT	487	Organizational Behavior	3		* *	
SOCI	301	Medical Sociology	3			
			15			13

HISTORY AND GOVERNMENT

The History and Government program has three essential purposes. First, it is designed to provide the student with insights into the history of the nation and the world, with special emphasis upon political, social, cultural, economic, and ecological changes. Secondly, it provides a strong background for graduate study in history and related fields, careers in government, social 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 curriculums 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. History and Government minor: 27 semester hours: Hist-101, 102, 152, 153, 3 hours of History 300+ courses; POLS-102, 316.

Assessment Exam: Seniors must take and pass an assessment examination to fulfill graduation requirements, and it is the student's responsibility to contact their advisor in the first two weeks of their final semester to register for the exam.

Community Service: seniors must complete 15 clock hours of approved community service.

Program Learning Outcomes

In addition to the general education learning outcomes listed elsewhere in the catalog, graduates of this program will understand:

- 1. Human origins, with an examination of the prehistoric and historic periods.
- 2. The impact of Greek and Roman history on world and American history.
- 3. The evolution of European states.
- 4. The evolution of civilization in Asia, the Far East, Africa, and Latin America.
- 5. The Intellectual and scientific advances of the human being.
- 6. The political developments in world and American history.
- 7. The impact of ideologies in the human experience.
- 8. The role of government in the human experience.
- 9. The importance of the liberal arts in the human experience.
- 10. The importance of technology in the human experience.

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

History and Government Bachelor of Arts

		First Semester			Second Semester	
ARTS		Art Elective	3	ENGL 102	Composition and Reading	3
ENGL	101	Composition and Reading	3	HIST 153	United States History II	3
HIST	152	United States History I	3	MATH	**Math	3
HLTH	102	Lifetime Health	2	MUSC 142	Survey of Music	3
		Laboratory Science	4		Laboratory Science	4
TECH	100	Freshman Seminar	1			
		*History Program Entrance Ex	am			
			16			16
	,	TL:			Earryth Carry and arr	
шет	101	World Civilization	2	LUCT 102	World Civilization	2
ECON	101	World Civilization	3	HIST 102	World Civilization	3
ECUN	251	Economics I	3	ECON 232	Amorphes of Economics II	3
SPUH	200	Canaral Developer	3	POLS 102	American Fed. Government	3
PSIC	221	**Moth on Commuton Lit	2	ACCT 202	Dringinlag of Assounting II	3
MAIN	201	Dringinlag of Associating I	2	ACC1 202	Philoppies of Accounting II,	2
ACCI	201	Principles of Accounting I,	3	SOCI 101	Or Restricted Elective	3
		or Restricted Elective		SOCI 101	Principles of Sociology	د
			18			18
		Fifth Semester			Sixth Semester	
GEOG	102	World Regions	3	GEOG	Geography Elective	3
HIST	377	19th Century Europe	3	HIST 378	20th Century Europe	3
HIST	354	American Frontier	3	HIST 352	History of the South	3
ENGL		Literature Elective	3	ENGL	Literature Elective	3
POLS	312	State and Local Govt. or		PSYC 322	Social Psychology	3
POLS	316	Comparative Govt.	3		,	
		Elective	3			
			15			15
	S	eventh Semester			Eighth Semester	
HIST	350	W. Va. & Appalachia	3	HIST 490	Seminar in History	3
HIST	490	Seminar in History	3	HIST 359	Recent American	3
HIST	456	America & the World	3	HIST 470	Russia	3
ECON		Economics Elective	3	HU/SS	300-400 General Elective*	3
		Elective				
POLS		Political Science Elective	3	HU/SS **	300-400 General Elective	3
		Assessment Examination		*Commu	inity Service	
		***Assessment Exam				
			15			15
* Admissi	ons or	nly/no passing score required				
*** Must	ore Cu	ITTICUIUM				
VIIIS	UC TAK	ULTAN NETTENET				

**** 15 hours required

INDUSTRIAL RELATIONS AND HUMAN RESOURCES (Includes Minors in Economics, Political Science, and Sociology)

The College of Business, Humanities & Sciences offers an interdisciplinary major in Industrial Relations and Human Resources. This program provides career training and work experience in labor relations for students desiring research and administrative positions in personnel offices, all levels of government, labor unions and labor union federations, mediation and arbitration services, and nonprofit agencies. In addition, the major is ideal as preparation for graduate work in most of the social sciences or managerial fields. The student will obtain a strong background in the social sciences with a special emphasis in labor and labor-related areas. Each student will participate in a unique semester-long supervised practicum capstone internship in which the student gains academic credit for work experience with unions, government, or industry. Students in the major will also attain a solid background in law, and the program is ideal for those hoping to pursue a law degree.

The College of Business, Humanities & Sciences offers minors in economics, political science, and sociology. With careful planning a student may minor in two areas without taking additional hours. A student completing the first two years of the program will meet the requirements for the Associate of Arts degree in General Studies.

This program satisfies the curriculum pattern for law school.

Program Learning Outcomes

In addition to the general education learning outcomes listed elsewhere in the catalog, this program has the following specific outcomes:

- 1. Academic preparation for work/or human resource in business, labor unions, labor federations government, and non-profit agencies.
- 2. Work experience in the field through the major program.
- 3. A solid background in law useful in pursuing a law degree or other work in the area of labor law.
- 4. Preparation appropriate for work in arbitration, mediation, and labor-management cooperation.
- 5. Academic background useful in pursuing graduate work in areas such as industrial relations, human resource or business administration.
- 6. An understanding of the role of labor unions and the labor movement in shaping the evolution of the American working environment.
- 7. A knowledge of patterns of industrial relations in other nations working in the emergent global economy.

Note: Restricted Electives must be taken from MGMT 382, ACCT 340, and MGMT 487, PSYC 323, or upper division courses in economics (Code ECON), political science (Code POLS), sociology (Code SOCI), and human services (Code HUMS).

Industrial Relations and Human Resources

Bachelor of Science

		First Semester			Second Semester	
TECH	100	Freshman Seminar	1	ECON 240	Introduction to Labor Unions	3
HU COI	RE	Humanities (1st)	3	ENGL 102	English Composition II	3
ENGL	101	English Composition I	3	HU CORE	Humanities (2nd)	3
SCI		Laboratory Science (1st)	4	SCI	Laboratory Science (2nd)	4
PHED	101	Lifetime Activities	1		Restricted Elective	3
POLS	102	American Federal Govt.	3			
			15			16
	,					
ECON	021	I hird Semester	2	ECON 222	Fourth Semester	2
ECON	231	Principles of Economics I	3	ECON 232	Principles of Economics II	3
22 COR	.E	SOCI-101 (1St)	3	SPCH 230	Lifetime Health	2
PSIC SS COD	221 E	200 or 400 lovel (2rd)	2	HLIH 102 MATU	CODE 2*	2
22 COR	.E 101	S00 of 400 level (Sfd)	3	MAIH	CORE 2" Social Science Elective	2
CIVIIS	101	Computer Applications	2	35 CORE	Postriated Elective	2
		Computer Applications			Resultieu Liecuve	
			15			17
		Fifth Semester			Sixth Semester	
MGMT	381	Fundamentals of Management	3	ECON 346	Interpreting Labor Agreements	3
ECON	320	Economic History U.S. Labor	3	ECON 348	Arbitration Prac. and Procedures	3
ECON	345	Labor Law	3	HUMS 340	Research and Statistics	3
ECON	301	Intermediate Theory	3	ECON 360	Employee Relations Law	3
ENGL	305	Scientific Technical Writing	3	ECON 430	Collective Bargaining	3
		Restricted Elective	3	SOCI 330	Industrial Sociology	3
			18			$\frac{18}{18}$
			10			10
	S	eventh Semester			Eighth Semester	
ECON	370	Wage Theory & Practice	3	ECON 470	Seminar on Contemporary	2
MONT	400	Restricted Elective	3		Labor Problems	3
MGMT	482	Human Resource Management	3	HUMS 490	Practicum Capstone Internship	12
ECON	331	Money, Banking and	2			
DOLC	240	Fiscal Policy	3			
PULS	340 100	Constitutional Law	3			
HOM2	100	Community Service	2			
			17			15
			. /			15

* MATH course must NOT be under 100 level.

INTERDISCIPLINARY STUDIES

The Interdisciplinary Studies program is an individualized program designed by the student with the advice of a faculty committee. It allows the student to design a program of study that combines disciplines or areas not available in any existing degree program. The student must present a written proposal outlining the purpose and program courses. The program requires the approval of the faculty committee and the Dean of the College of Business, Humanities and Sciences.

The Interdisciplinary Studies Program leads to a Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degree. The requirements are:

- 1. General studies: 41 hours listed in the present core is required.
- 2. For a B.A., a minimum of 12 hours of languages is required. For a B.S., 3 hours of mathematics and 3 hours of computer literacy are required.
- 3. A concentration of 60 (beyond core) hours from two or more disciplines (no more than three disciplines may be selected), half of which must be 300-400 level courses. Each concentration must include at least 18 credit hours. The number of hours taken in the first discipline must equal or exceed the number of hours taken in either of the other chosen disciplines. The first discipline must be within the College of Business, Humanities and Sciences.
- 4. A senior project of 3-4 hours credit, interdisciplinary in nature. If two disciplines are chosen, 2 hours credit will be assigned to the first discipline and 1 hour credit to each of the other disciplines.

The student shall select at least two but no more than three disciplines listing them in priority order and shall nominate a faculty member from each of the chosen disciplines, subject to the approval of the dean. The faculty committee will be made up of one faculty member from each of the chosen disciplines, subject to the approval of the dean. In addition, the dean or his designee (preferably not from one of the chosen disciplines) will complete the committee. The faculty member from the first discipline shall serve as committee chair and shall be responsible for monitoring the senior project.

The student and faculty committee shall develop a program and submit it to the dean for approval. After approval by the dean, the program shall be filed with the registrar and shall become the official program of study for the student. It is subject to the same minimum requirements as all other degrees including a 2.0 overall GPA, 2.0 GPA program requirements, and minimum of 128 hours.

To be a candidate for acceptance into the program, the student must have completed minimum of 15 hours of college credit at WVU Tech and a maximum of 64 hours of total college credit. An exception to the 64 hour maximum may be made for those who have earned an associate degree requiring more than 64 hours. While numerous options are available, Engineering & Entrepreneurship (E2) and Graphic Design are two prominent areas of emphasis in the Interdisciplinary Studies program. Applications may be obtained from the Office of the Dean, College of Business, Humanities, and Sciences.

Interdisciplinary Studies: Engineering & Entrepreneurship (E2)

A broadly conceived major, the Engineering & Entrepreneurship (E2) curriculum consists of an interdisciplinary education based on WVU Tech's strengths in engineering and management. The program offers a balanced preparation involving course work in the major disciplines of engineering, mathematics and sciences, management, marketing, humanities, and social sciences. The engineering courses are not special courses meant only for students in the program, but are classes normally taken by the mechanical, electrical, and other engineering majors in the College of Engineering. Upon completion of the curriculum requirements, the student is awarded a Bachelor of Science degree in Interdisciplinary Studies with Engineering and Entrepreneurship Emphasis. The ultimate goal of the (E'2) program is to prepare the graduate for a career in industry that combines technical competence and management awareness with the ability to work closely with people. Employment opportunities are in technical marketing operations management, quality control, materials management, and manufacturing/industrial engineering. Graduates may also pursue opportunities to own businesses and seek careers in sales, marketing, procurement, and manufacturing/production.

Interdisciplinary Studies Engineering & Entrepreneurship (E 2)

		First Semester			Second Semester	
TECH	100	Freshman Seminar	1	MATH 156	Calculus II	4
MATH	155	Calculus	4	ENGL 102	English Composition I	3
GPHS	120	Graphics I	2	CSCI 111	Comp. Sci. Engr.	3
ENGL	101	English Composition I	3		or CSCI 121	
HU/SS		General Core Elective	3	GENE 121	Statics	3
SS		Social Science Core	3	SS	Social Science Core	3
			16			16
	,	Third Semester			Fourth Semester	
PHYS	213	Phys. Sci. & Engr.	3	PHYS 214	Phys. Sci. & Engr.	4
GENE	242	Dynamics	3	GENE 243	Mechanics of Mat'ls	3
ACCT	201	Princ. Accounting I	3	GENE 331	Fluid Mechanics	3
MGMT	381	Fund. Management	3	ACCT 202	Princ. Accounting II	3
HU		Humanities Core	3	HIST 388	History of Tech.	3
			16			16
		Fifth Semester			Sixth Semester	
ENGL	305	Scientific Technical Writing	3	MGMT310	Small Business Mgmt.	3
ELCE	220	Circuits I	3	MGMT482	Human Resource Mgmt	3
MGMT	386	Business Statistics	3	MGMT483	Quality Mgmt.	3
MKTG	330	Marketing	3	ELCE 223	Circuits II	4
ELCE	222	Circuits Lab	1		Engineering Elective*	3
		Engineering Elective*	3			
			16			16
	S	eventh Semester			Eighth Semester	
ECON	401	Managerial Econ.	3	GENE 401	Senior Seminar	1
MGMT	480	Mgmt. Science I	3	MGMT481	Mgmt. Science II	3
MGMT	487	Organ. Behav.	3	MGMT488	Strategic Management	3
ACCT	331	Manag. Accounting	3		Engineering Elective*	3
BLAW	301	Business Law	3	HU/SS	General Core Elective	3
FING	225	(or BLAW 302)	2		Projects Elective	3
FINC	525	Finan. Management	5			_
			18			16
T. I I.				1		

* To be chosen from discipline specific engineering course clusters.

Interdisciplinary Studies: Graphic Design

Interdisciplinary Studies: Graphic Design Emphasis is similar to a Plus Two program leading to a Bachelor of Science degree. It prepares graduates for professional careers in such fields as graphic design, printing, advertising, public relations, and marketing. Graphic Design embraces a variety of disciplines including the humanities, social sciences, and natural sciences. While students wishing to enter the program may choose from a variety of courses in related disciplines, one highly successful option is to combine the Graphic Design curriculum with the Printing Technology program. During the first two years of study, the student follows the pattern sheet for Printing Technology and earns an Associate of Science degree. In the remaining two years, the student makes use of the Graphic Design pattern sheet to complete a Bachelor of Science degree. Students may also decide to utilize the flexibility of Interdisciplinary Studies to develop their own individual components of printing and graphic design course work. Upon completion of Interdisciplinary Studies: Graphic Design Emphasis, the graduate will be familiar with fundamentals necessary for the preparation of business and technical communications; multiple-page layout design by utilizing photography and typography; and the application of colors, textures, and forms in achieving aesthetic and controlled composition.

Interdisciplinary Studies Graphic Design

(Plus Two Program combined with Printing Technology or Equivalent)

Fifth Semester

ARTS	113	Art Appreciation
ARTS	116	Intro. Graphic Design I
SCI		Lab Science
ENGL	305	Technical English
PHED	101	Lifetime Activities
ARTS	200	Painting I

Seventh Semester

ARTS	302	Graphic Design II
ARTS	317	Ceramics II
HU		Humanities Core*
MGMT	381	Fund. of Management
MKTG	330	Marketing
HU/SS		General Core Elective

Sixth Semester

		SIAIII SCHICSICI	
3	ARTS 301	Graphic Design I	3
3	HLTH 102	Lifetime Health	2
4	ARTS 216	Ceramics I	3
3	PMGT 310	Multimedia Press	3
1	PHYS 221	Intro. to Photography	3
3	ARTS 300	Painting II	3
17			17

Eighth Semester

ARTS 485	Senior Project	4
ARTS 303	Graphic Design III	3
HU	Humanities Core*	3
MKGT 305	Advertising	3
HU/SS	General Education Elective	3

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*Sequence required.

MANAGEMENT INFORMATION SYSTEMS (with Emphasis in Information Technology)

The computer has become an essential aid to the decision making process in business, industry, and government. To supply the need for qualified computer executives, Tech offers the Management Information Systems curriculum. Students not only receive intensive training within the information technology field, but also get a strong background in business management.

The curriculum includes courses in accounting, business management, computer equipment and programming, computer information systems analysis and management, and mathematics and statistics.

Program Learning Outcomes

In addition to the general education learning outcomes listed elsewhere in the catalog, the successful graduate of the B.S. Management Information Systems program will be able to:

- 1. DEMONSTRATE intermediate-level skills with current operating systems for personal computer systems, such as software installation and removal, file and folders management, and user interfacing with applications;
- 2. ATTAIN intermediate level skills with productivity software such as word processing, spreadsheets, database management, and presentation graphics;
- DESCRIBE current hardware components for microprocessors, memory, input/output devices, secondary storage, and networking devices; EVALUATE the performance features of a variety of these components;
- 4. DEMONSTRATE TECHNICAL KNOWLEDGE of a variety of application software and Internet functions, as they pertain to current personal and business uses of computers;
- DESIGN, CODE, and SUCCESSFULLY TEST application programs written in procedure-oriented computer languages such as Visual Basic and C#; DEMONSTRATE a variety of structural programming constructs as they apply to commercial applications in these programs;
- APPLY prototyping tools and modeling techniques required to perform modern structured systems analysis and design in the context of the development of business computer systems;
- 7. DESIGN, CODE, and SUCCESSFULLY TEST database management system applications, using a 4GL such as Oracle's SQL.
- 8. DESIGN, IMPLEMENT and PUBLISH a variety of web pages to a developed web site.
- RELATE concepts and skills from course work in accounting, economics, finance, management, and marketing to the characteristics of successful management information systems.

Management Information Systems

Bachelor of Science

TECH ENGL MATH CMIS OTEC SCI	100 101 124 101 100	First Semester Freshman Seminar English Composition I Finite Math I Fund. of Computers Office Keyboarding or Elective* Laboratory Science (1st)	$\begin{array}{c}1\\3\\3\\3\end{array}$	CMIS 162 ENGL 102 MATH 236 SCI	Second Semester Prin. of Computer Info. Systems English Composition II Finite Math II General Elective (Core 6) Laboratory Science (2nd)	$3 \\ 3 \\ 3 \\ 3 \\ 4 \\ - \\ 16$
ACCT CMIS HU ECON MGMT SS	201 164 231 386	Third Semester Principles of Accounting I Visual Basic for Bus. Appls. Humanities (1st) Principles Economics I Business Statistics Social Science (1st)	$ \begin{array}{r} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 18 \end{array} $	ACCT 202 CMIS 163 CMIS 265 ECON 232 SS	Fourth Semester Principles of Accounting II Internet Applications Visual C#.NET Prog. (or CMIS-267 or CSCI-121) Principles of Economics II Social Science (2nd)	3 3 3 3 $\overline{15}$
CMIS FINC MGMT MKTG BLAW	360 325 381 330 301	Fifth Semester Systems Analysis Methods Financial Management I Fund. of Management Marketing Business Law (or BLAW 302) Restricted Electives	$3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ - 18$	ACCT 331 CMIS 361 CMIS 363 ENGL 305 HU	Sixth Semester Managerial Accounting Structured Systems Design Adv. Web Page Design Sci/Technical Writing Humanities (2nd)	$3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ - \\ 15$
CMIS MGMT MGMT	S 461 480 487	eventh Semester Database System Development for Business Management Science I Organizational Behavior Cultural Diversity/General Core Restricted Elective	3 3 3 3 3 	CMIS 463 CMIS 464 MGMT481 MGMT488	Eighth Semester Management Information Systems Networks: LANS & WANS Management Science II Strategic Management Restricted Elective	$3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 15$

* Students with less than one year typewriting shall take OTEC 100.

Restricted Electives to be chosen from:

1. Advanced Programming Applications: CMIS-364, CMIS-368

2. Network Administration: Cisco sequence ELET courses

3. CSCI electives with consent of Department of Management/MIS

4. Minors: ACCT, ECON, FINC, MGMT and/or MKTG course 300-400 level.

NOTE: Prior to graduation, students must: (1) take the ACP test, and (2) complete the core Citizenship requirement.

MATHEMATICS

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, 156, 251, 261, 283, 341, 441, 448, 451, 452, 465, 493 (citizenship) and six hours in other 300 or 400 level Math courses.

Mathematics Minor: 25 semester hours minimum including MATH 155, 156, 251, 261, 441, and six hours in 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

In addition to the general education outcomes listed elsewhere in the catalog, graduates of the Mathematics curriculum:

- 1. Should be able to attend graduate school or find employment in industry or government.
- 2. Will be familiar with at least three of the four major areas of mathematics-Algebra, Analysis, Topology and Applied Mathematics.
- 3. Will have experience in using computers.
- 4. Will be critical thinkers.
- 5. Will be able to communicate effectively.

Mathematics Bachelor of Science

ENGL TECH MATH CSCI	101 100 155 121	First Semester English Composition I Freshman Seminar Calculus I Computer Science Lab Science	$\begin{array}{c}3\\1\\4\\4\\-\\16\end{array}$	ENGL 102 MATH 156 CSCI 122 HU	Second Semester English Composition II Calculus II Computer Science II Humanities Core Lab Science/Core	3 4 3 3 4
MATH MATH PHYS PHED HU	283 251 213 101	Third Semester Intro. To Concepts of Math Multivariable Calculus Physics for Sci. & Eng. I Life Activities Humanities Core	$\begin{array}{c}3\\4\\1\\3\\\hline15\end{array}$	MATH 261 PHYS 214 SS HLTH 102	Fourth Semester Elementary Diff. Equations Physics for Sci. & Eng. II Social Science Core Lifetime Health Elective	4 4 3 2 3
MATH SS ENGL SPCH	441 305 250	Fifth Semester Elective Applied Linear Algebra Social Science Core Scientific/Tech. Writing or Speech Communications Technical Elective	3 3 3 3 $-$ 15	MATH 448 MATH 341 HU/SS	Sixth Semester Probability & Statistics Intro. to Algebraic Structures General Elective Core Technical Electives Elective	3 3 3 6 3
MATH PHIL MATH HU/SS MATH	S 451 305 493	eventh Semester Intro. to Real Analysis I Intro. to Philosophy Crit. Reasoning General Elective Core Technical Elective Special Topics (Math for Citizenship)	3 3 3 3 1 16	MATH 452 MATH MATH 465	Eighth Semester Intro. to Real Analysis II Elective Mathematics Senior Seminar Technical Elective Electives	3 3 1 3 6 6

Technical Electives to be chosen from an approved list-see department chair.

Mathematics Bachelor of Science-Business Track

ENGL TECH MATH CSCI	101 100 155 121	First Semester English Composition I Freshman Seminar Calculus I Computer Science Lab Science Core		$3 \\ 1 \\ 4 \\ 4 \\ 4 \\ - 16$	ENGL 102 MATH 156 CSCI 122 HU	Second Semester English Composition II Calculus II Computer Science II Humanities Core Lab Science/Core	3 4 3 4
MATH MATH ACCT PHED	283 251 201 101	Third Semester Intro. To Concepts of Math Multivariable Calculus Principles of Accounting I Life Activities		3 4 3 1	MATH 261 MATh 441 ACCT 202 SS	Fourth Semester Elementary Diff. Equations Applied Linear Algebra Principles of Accounting II Social Science Core	4 3 3
HU ENGL SPCH	305 250	Humanities Core Scien. Tech. Writing or Speech Communications	3	$\frac{3}{3}$	HLTH 102	Lifetime Health Elective Elective	$ \begin{array}{r} 2\\3\\3\\\hline 18\end{array} $
MATH ECON SS ENGL SPCH	448 231 305 250	Fifth Semester Elective Probability & Statistics Principles of Economics I Social Science Core Scientific/Tech. Writing or Speech Communications Technical Elective		3 3 3 3 3 3	MGMT381 MATH 341 ECON 232	Sixth Semester Fundamentals of Management Intro. to Algebraic Structures Principles of Economics II General Elective Core Elective	3 3 3 3 3 3
				15			15
FINC PHIL MATH MATH	S 325 301 493	eventh Semester Financial Management I Intro. to Philosophy Elective General Elective Core Technical Elective Special Topics (Math for Citizenship)		3 3 3 3 3 1	FINC 326 MATH MATH 465	Eighth Semester Financial Management II Elective Mathematics Senior Seminar Technical Elective Electives	3 3 1 3 6
		(main for Chizenship)		16			16

Technical Electives to be chosen from an approved list-see department chair.

DEPARTMENT OF NURSING DEGREES OFFERED

WVUIT offers the Bachelor of Science in Nursing (BSN). The BSN program offers three options:

- 1. The RN option for the Associate Degree or Diploma nurse who wishes to earn the BSN degree. The student earns lower division credit for previous educational and work experience and enters the BSN program at the upper division level. The RN to BSN program is offered on line.
- 2. The joint program between WVU School of Nursing/Glenville State College/and WVUIT is a program whereby students complete the first two years of study on the Glenville campus and transfer as juniors to WVUIT to complete the upper division.
- 3. Basic BSN students are admitted to the Department of Nursing at 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. For example, WVUIT and West Virginia State University (WVSU) have an agreement that WVUIT will admit a minimum of 10 WVSU students who qualify to the BSN program. Students who meet admission criteria may also transfer from other accredited schools pending space available in a given class.

Candidates who are selected for the limited number of openings in the nursing program must meet the admission requirements of the College of Business, Humanities, and Sciences as well as the Department of Nursing. Admission is on a competitive basis. Individuals who have a felony 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).

ACCREDITATION

The West Virginia University School of Nursing BSN curriculum is fully accredited by the Commission on Collegiate Nursing Education (CCNE) and is approved by the West Virginia Board of Examiners for Registered Professional Nurses.

BACHELOR OF SCIENCE IN NURSING (BSN)

Outcomes of the BSN Program

In addition to the general education learning outcomes described elsewhere in the catalog, this program has the following specific learning outcomes:

1. Critical Thinking - Employs reasoning and creativity in the process of assessment, interpretation, analysis, synthesis, evaluation, and inference as a basis for professional nursing practice.

- 2. Nursing Interventions Applies theory-based clinical judgment decision-making in the delivery of skilled nursing therapeutics with persons across the life span in health promotion/risk reduction, health maintenance, and health restoration setting.
- 3. Professional Role Demonstrates attitude, values, personal qualities, and behaviors consistent with professional nursing practice.
- 4. Caring Provides empathetic, sensitive, and compassionate care for individuals, families

and aggregates that upholds moral, legal, and ethical humanistic principles.

5. Communication - Integrates effective, interpersonal, therapeutic and informatics communication processes in professional nursing practice.

The Bachelor of Science in Nursing (BSN) program accommodates both high school and college students who aspire to a career in nursing and registered nurses (RN's) who are licensed graduates of associate degree or diploma nursing programs who want to continue their professional development by earning the BSN. Nursing requires a broad knowledge base. The course of study, therefore, includes classroom and laboratory experience in the liberal arts, physical, behavioral, and social sciences as well as nursing science. Planned, supervised clinical experiences take place in diverse health care settings in a multi-county area. Students must provide their own transportation to clinical and other learning experiences.

Sharing the University's commitment to West Virginia Rural Health Education Partnerships (WVRHEP) WVUIT nursing students participate in the WVRHEP program to promote health care for all West Virginians. All health sciences students in state supported schools are required to complete a rural health rotation prior to the completion of degree requirements. WVUIT Nursing students will complete this rotation at a designated WVRHEP site during the senior year.

ADMISSION REQUIREMENTS

*Meeting the minimum requirements to apply does not guarantee admission.

Freshman Admission

Freshmen may be directly admitted to the Nursing program. Requirements will be based on a combination of high school grades-point average (GPA) and composite ACT or total SAT scores. While preference is given to West Virginia residents, qualified students from other states are encouraged to apply. Direct admission space is limited and highly competitive. *High school students eligible for admission to the University may be admitted directly into nursing if they meet the following criteria:

GPA	ACT	or SAT
3.6	25	1140
or higher	or higher	or higher

Sophomore Admission

The majority of students are admitted at the Sophomore level. Applicants are eligible for review by the Admissions, Progression, and Graduation Committee. Students may apply for admission after one semester or more of college course work. Admission consideration in this case is dependent upon a minimum of 2.8 GPA on all college work attempted, completion of all pre-requisite general education requirements from any accredited college or university with a grade of C or better, and space available in the class. Application forms can be obtained from the Department of Nursing at www.wvutech.edu/nursing or in Orndorff Hall room 2401 or email request to jwood002@wvutech.edu.

RN-BSN Students

Registered nurses are admitted directly to the WVUIT upper division option. Acceptance into the program is dependent upon:

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- The individual's academic record; a grade point average of 2.5 or better on all college work attempted
- An unrestricted West Virginia license to practice profession nursing or eligibility to acquire one
- The number of spaces available
- Applicants with a restricted license will be considered on an individual basis.

BACHELOR OF SCIENCE IN NURSING (BSN) PROGRESSION

To be in good academic standing, students must:

- 1) Maintain a cumulative grade point average of 2.8 or better in all work attempted and
- 2) Pass all courses with a grade of C or better.
- a. A student who receives a grade of D, F, WU, or W in a required nursing course may repeat that nursing course ONCE.
- b. A student may repeat ONLY ONE nursing course
- c. Students must complete, with a grade C or better, any nursing course in which a grade of D, F, WU or W has been received.
- d. Students who do not maintain a cumulative GPA of 2.8 or better after one semester will be dismissed from the program.
- e. Nursing courses and pre-and co-requisite courses in which students earn a grade of D,F, WU, W must be repeated prior to the student's progression to the next courses in the nursing sequence.
- f. Students who repeat a nursing course and earn a grade of D, F, WU, or W will be dismissed from the program
- g. Any general education course that is not a pre-or co-requisite of nursing courses and in which a grade of D has been earned must be repeated prior to graduation if it is to be counted toward graduation requirements.
- 3) All students must successfully complete the required standardized testing in order to progress.
- 4) Students must complete all requirements of a given level prior to progression to the next level.

The Bachelor of Science in Nursing degree is conferred upon completion of all required courses.

BACHELOR OF SCIENCE IN NURSING (BSN) PROGRESSION FRESHMAN

First Semester

First Semester				Second Semester		
CHEM	111	*Survey of Chemistry I	4	CHEM 112	*Survey of Chemistry II	4
PSYC	221	*General Psychology	3	CC2	*Math/Computers	3
ENGL	101	*English Composition I	3	BIOL 232	Anatomy & Physiology II	4
MATH	126	*College Algebra	3	PSYC 241	*Life-Span Development	3
BIOL	231	*Anatomy & Physiology I	4	HLSC 104	*Nutrition	3
TECH	100	*Freshman Seminar	1	NURS 110	*Health & Caring Profession	3
			18			20

Math 126 must be taken prior to Chem 111 to meet pre-requisite

*BIOL 111(ACT composite below 23) must be taken prior to BIOL 231 *Required with grade of C or better before enrollment in Sophomore nursing courses.

** Apply to Nursing Department by January 15: application can be downloaded www.wvutech.edu/nursing

			30	PHOMOK	E	
		First Semester			Second Semester	
NURS	221	Concepts: Nursing 1	3	NURS 241	Concepts: Nursing 2	3
NURS	225	Nursing Interventions 1	3	NURS 245	Nursing Interventions 2	3
NURS	361	Health Assessment	3	SOCI 101	Principles of Sociology	3
NURS	376	Pharmacology	3	HU	Humanities Core	3
ENG	102	Eng. Comp II	3	BIOL 240	Microbiology	4
			15			16
				JUNIOR		
Fall S	Semo	ester or Spring Semester	•	Spring	Semester or Fall Semeste	r
NURS	334	Concepts: Adult Health	3	NURS 333	Ethics in Nursing	3
NURS	322	Concepts: Pediatric Health	2	NURS 351	Concepts: Maternal Child	2
NURS	335	Interventions: Medica	1	NURS 356	Concepts: Psychosocial	3
		Surgical	2	NURS 345	Interventions: Psychosocial	2
NURS	325	Interventions: Pediatric	2	NURS 355	Interventions: Maternal Child	2
NURS	376	Pharmacology	3	SPCH 250 c	or ENGL 305	3
HU		Humanities Core	3			
STAT	211	Stats for HLTH Sciences	3			
01/11	211	Stute for filling beforees	5			

***15 - 18

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*** NURS 376 (cross-listed as HLSC 204) will only be available for junior year in 2006-2007. After that, it will be moved to sophomore level.

				SENIOR			
Fall Semester or Spring Semester				Spring Semester or Fall Semester			
NURS	421	Concepts: Critical Care	3	NURS 441 Concepts: Community	3		
NURS	423	Leadership in Nursing	2	NURS 442 Review Clinical Problems	2		
NURS	425	Interventions:		NURS 445 Interventions: Community	5		
		Leadership	6	NURS 455 Interventions: Capstone	1		
NURS	476	Introduction to Nursing		NURS 486 NCLEX Review	1		
		Research	3				
HU		Humanities Core	3				
				-	-		
			17	1	2		

CODIIOMODE

General Education Credits= 60Nursing Credits= 68Total Credit Hours= 128

Course

BACHELOR OF SCIENCE IN NURSING (BSN): RN/BSN PROGRESSION

Registered nurses must be admitted directly into the RN-BSN program. Acceptance and placement in the program are dependent upon the individual's academic record and upon the number of spaces available in the program. *An unrestricted license to practice nursing in West Virginia and a grade-point average of 2.5 or better on all college work attempted are required to be eligible for consideration.*

<u>Undifferentiated Division Nursing Credit:</u> All Registered Nurses will transfer 50 hours of undifferentiated nursing credits.

GENERAL EDUCATION REQUIREMENTS

ENGL101	Composition & Reading	3			
ENGL102	Composition Rhetoric & Reading	3			
CC1	Oral Written Communications	3			
STAT 211	Statistics for Health Professions	3			
CC2	Math/Computers	6			
Humanities and Fine Arts (May also satisfy Core 6)					
Behavioral S	ciences				
PSYC 221	General Psychology	3			
PSYC 241	Life Span Psychology	3			
SOCI 101	Principles of Sociology	3			
Natural Scien	nces:	12			

UPPER DIVISION NURSING CREDITS

All RN-BSN Students are required to establish credit in the following nursing courses by enrollment, challenge by examination, or portfolio. The entire upper division program is taught via WEBCT.

NURS	361	Health Assessment	3 Cr.
NURS	340	Professional Role Transition	3 Cr.
NURS	333	Seminar VII, Professional Role Development	3 Cr.
NURS	434	Evidence Based Practice	4 Cr
NURS	433	Seminar VIII Professional role Synthesis	3 Cr.
*NURS	441	Community Response to Health	3 Cr.
*NURS	445	Nursing Interventions	5 Cr.
*NURS	455	Nursing Interventions: Capstone	1 Cr.
NURS	476	Introduction to Nursing Research	3 Cr.

* Challenge, portfolio or enrollment may establish credit for these courses; Advisor should note student's intent for challenge, portfolio, or enrollment.

Total nursing credit hours required	28 Cr
Undifferentiated nursing credit:	50
Upper division nursing credits:	28
General Education Requirements:	65
Total	128

ALL OTHER STANDARDS FOR PROGRESSION AND GRADUATION WHICH ARE LISTED IN THE COLLEGE CATALOG AND/OR THE DEPARTMENT HANDBOOK APPLY TO THE BSN STUDENT. This includes 30 of the last 36 hours completed at WVU Tech and upper division credits as outlined under requirements for graduation.

PRINTING MANAGEMENT

The present curriculum of the Department of Management/MIS at West Virginia University Institute of Technology is designed for those students who are interested in furthering their education and entering the management area of the printing industry. The program is structured to allow the student with the Associate degree to complete his/her Baccalaureate degree with two years of study.

Program Learning Outcomes

In addition to the general education learning outcomes listed elsewhere in the catalog, the successful graduate of the Printing Management program will:

- 1. Be able to apply business and accounting practices to the printing industry.
- Be familiar with federal EEO and safety legislation and understand the importance of compliance.
- 3. Understand the complexity of human behavior within an organization..
- 4. Develop the necessary analytical, computer, and communication skills to analyze data and to present findings.
- 5. Understand the role of business in society and the role of business ethics in decision making.

ADMISSION REQUIREMENTS

Students entering the Printing Management program must have completed the Associate degree in Printing Technology at the Community & Technical College at WVU Tech or a similar degree from another institution. Transfer students must submit a transcript of their previous work and have it evaluated by the department. It may be necessary, in some instances, for transfer students to take additional courses to be eligible for the program.
Printing Management Bachelor of Science

		Fifth Semester			Sixth Semester	
ACCT	201	Principles of Accounting I	3	ACCT 202	Principles of Accounting II	3
MGMT	381	Fundamentals of Management	3	MGMT382	Operations Mgt.	3
MGMT	386	Business Statistics	3	SCI	Laboratory Science Elective*	4
HLTH	102	Lifetime Health	2	MKTG 330	Marketing	3
ENGL	102	English Composition II	3	PMGT 402	Printing Estimating II	3
PMGT	401	Printing Estimating I	3	PHED 101	Lifetime Activities	1
		0 0				
			17			17
	S	eventh Semester			Eighth Semester	
BLAW	S 301	eventh Semester Business Law (or BLAW 302)	3		Eighth Semester Restricted Elective **	3
BLAW FINC	S 301 325	eventh Semester Business Law (or BLAW 302) Financial Management I	3 3	HU	Eighth Semester Restricted Elective ** Humanities II (300 or 400 level)*	3 3
BLAW FINC MGMT	S 301 325 487	eventh Semester Business Law (or BLAW 302) Financial Management I Organizational Behavior	3 3 3	HU PMGT 420	Eighth Semester Restricted Elective ** Humanities II (300 or 400 level)* Printing Seminar	3 3 1
BLAW FINC MGMT PMGT	S 301 325 487 310	eventh Semester Business Law (or BLAW 302) Financial Management I Organizational Behavior Multimedia Presentation	3 3 3 3	HU PMGT 420 ACCT 331	Eighth Semester Restricted Elective ** Humanities II (300 or 400 level)* Printing Seminar Managerial Accounting	3 3 1 3
BLAW FINC MGMT PMGT PMGT	S 301 325 487 310 403	eventh Semester Business Law (or BLAW 302) Financial Management I Organizational Behavior Multimedia Presentation Printing Plant Management	3 3 3 3 3	HU PMGT 420 ACCT 331 MGMT 482	Eighth Semester Restricted Elective ** Humanities II (300 or 400 level)* Printing Seminar Managerial Accounting Human Resource Management or	3 3 1 3
BLAW FINC MGMT PMGT PMGT	S 301 325 487 310 403	eventh Semester Business Law (or BLAW 302) Financial Management I Organizational Behavior Multimedia Presentation Printing Plant Management	3 3 3 3 3	HU PMGT 420 ACCT 331 MGMT 482 ECON 360	Eighth Semester Restricted Elective ** Humanities II (300 or 400 level)* Printing Seminar Managerial Accounting Human Resource Management or Employee Relations Law	3 3 1 3 3
BLAW FINC MGMT PMGT PMGT	S 301 325 487 310 403	eventh Semester Business Law (or BLAW 302) Financial Management I Organizational Behavior Multimedia Presentation Printing Plant Management	3 3 3 3 3	HU PMGT 420 ACCT 331 MGMT 482 ECON 360	Eighth Semester Restricted Elective ** Humanities II (300 or 400 level)* Printing Seminar Managerial Accounting Human Resource Management or Employee Relations Law Gen Elec Core-Diversity	3 3 1 3 3 3
BLAW FINC MGMT PMGT PMGT	S 301 325 487 310 403	eventh Semester Business Law (or BLAW 302) Financial Management I Organizational Behavior Multimedia Presentation Printing Plant Management	3 3 3 3 3	HU PMGT 420 ACCT 331 MGMT 482 ECON 360	Eighth Semester Restricted Elective ** Humanities II (300 or 400 level)* Printing Seminar Managerial Accounting Human Resource Management or Employee Relations Law Gen Elec Core-Diversity	3 3 1 3 3 3
BLAW FINC MGMT PMGT PMGT	S 301 325 487 310 403	eventh Semester Business Law (or BLAW 302) Financial Management I Organizational Behavior Multimedia Presentation Printing Plant Management	$3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 15$	HU PMGT 420 ACCT 331 MGMT 482 ECON 360	Eighth Semester Restricted Elective ** Humanities II (300 or 400 level)* Printing Seminar Managerial Accounting Human Resource Management or Employee Relations Law Gen Elec Core-Diversity	$3 \\ 3 \\ 1 \\ 3 \\ 3 \\ - \\ 16$

 * Electives must be taken in sequence.
 **Restricted electives are limited to 300 and 400 level classes with the following course codes: MGMT, MKTG, ACCT, /BLAW, ECON, FINC, and CMIS.

NOTE: Prior to graduation, students must: (1) take the ETS Business test and (2) complete the core Citizenship requirement.

PSYCHOLOGY TRANSFER PROGRAM

Students at WVU Tech may take the first two years of the WVU Psychology curriculum and then apply for entrance to the WVU Department of Psychology. Students complete 63 hours at WVU Tech and must make application for admission to WVU before the beginning of the fourth semester. To be eligible for admission to the Psychology program at WVU, students must have a minimum cumulative GPA of 2.0 and a minimum GPA of 2.0 in all Psychology courses attempted. Students may be provisionally admitted to the WVU Psychology program if they register for PSYCH 19 and STATS 101 in the first semester at WVU.

Psychology Transfer Program

		First Semester				Second Semester	
ENGL	101	English Composition I	3	ENGL	102	English Composition II	3
MATH	126	College Algebra	3	STAT	211	Stat. Analysis for the Hlth. Science	s 3
PSYC	221	General Psychology	3	PSYC	241	Life-Span Development	3
SOCI	101	Principles of Sociology	3	POLS	102	Am Federal Government	3
HIST	101	World Civilization	3	HIST	102	World Civilization	3
TECH	100	Freshman Seminar	1				
			16				15
		Third Semester				Fourth Semester	
BIOL	111	Third Semester General Biology	4	BIOL	112	Fourth Semester General Biology	4
BIOL PSYC	111 322	Third Semester General Biology Social Psychology	4 3	BIOL ENGL	112 305	Fourth Semester General Biology Technical Writing	4 3
BIOL PSYC PHIL	111 322 305	Third Semester General Biology Social Psychology Critical Reasoning	4 3 3	BIOL ENGL PSYC	112 305 323	Fourth Semester General Biology Technical Writing Industrial Org. Psychology	4 3 3
BIOL PSYC PHIL ECON	111 322 305 231	Third Semester General Biology Social Psychology Critical Reasoning Principles of Econ. I	4 3 3 3	BIOL ENGL PSYC SOCI	112 305 323 322	Fourth Semester General Biology Technical Writing Industrial Org. Psychology Cult Anthropology	4 3 3 3
BIOL PSYC PHIL ECON Restr	111 322 305 231 ricted	Third Semester General Biology Social Psychology Critical Reasoning Principles of Econ. I Elective*	4 3 3 3 3	BIOL ENGL PSYC SOCI	112 305 323 322	Fourth Semester General Biology Technical Writing Industrial Org. Psychology Cult Anthropology Restricted Elective*	4 3 3 3 3
BIOL PSYC PHIL ECON Restr	111 322 305 231 icted	Third Semester General Biology Social Psychology Critical Reasoning Principles of Econ. I Elective*	4 3 3 3 3	BIOL ENGL PSYC SOCI	112 305 323 322	Fourth Semester General Biology Technical Writing Industrial Org. Psychology Cult Anthropology Restricted Elective*	4 3 3 3

Students must meet WVU Liberal Studies Program's Cluster B (Social and Behavioral Sciences) requirements and foreign culture, minority, or gender studies (FMG) requirements.

*Restricted electives must be chosen from biology, chemistry, computer science, fine arts, foreign language, economics, English, geography, history, human services, mathematics, philosophy, or political science.

Psychology Minor

The requirements for the Minor are 15 credits in Psychology with a minimum GPA of 2.0 for all Psychology courses attempted. An additional 3 credits in statistics is also required.

Course:

PSYC PSYC	221 241	General Psychology Lifespan Development	3 3
PSYC	322	Social Psychology	3
PSYC	323	Industrial/Organization Psycholo	gy3
PSYC		Restricted elective	3
STAT	211	Statistics	3

Credit Hours:

PUBLIC SERVICE ADMINISTRATION (Includes Minors and Available Tracks)

The College of Business, Humanities and Sciences offers an interdisciplinary major in Public Service Administration. The degree in public service provides career training for students desiring research and administrative positions involving the prevention, processing, and solution of social and economic problems. While the student obtains a basic background in the various social sciences, further competence is enhanced through the choice of restricted electives. Each student will participate in a unique semester-long supervised practicum internship in which the student gains academic credit for work experience in a cooperating government, public/ private agency, firm or economic development office.

Restricted electives must be selected from courses in human services (code HUMS), ACCT-345, ACCT-202, economics, labor studies, political science, psychology, sociology, or with approval of the adviser, can consist of an 18-hour minor in any additional field in the College of Business, Humanities and Sciences. The college offers minors in human resources administration, economics, political science, business administration, and sociology. With careful planning, a student may minor in two of these without taking additional hours. In addition, the student may use general and restricted electives and obtain a strong concentration in law, taking ECON-345 Labor Law and ECON-346 Interpreting Labor Agreements. A student completing the first two years of the program will meet the requirements for the Associate of Arts degree in General Studies.

Public Service Administration majors also have a choice of a track in Community Economic Development, Non-Profit Administration, Construction Administration, Law and Legal Services Administration, and Criminal Justice Administration as noted elsewhere in the catalog.

Program Learning Outcomes

In addition to the general education learning outcomes listed elsewhere in the catalog, this program has the following specific outcomes.

- 1. To prepare students for management positions in government agencies.
- 2. To offer students the opportunity to develop skills needed for the quickly growing notfor-profit sectors.
- 3. To provide students a broad liberal arts background so that they can adapt to the changing job requirements of the public agencies.
- 4. To give students interest in graduate school in public administration or political science sufficient academic preparation for such career options.

Public Service Administration

Bachelor of Science

First SemesterTECH100Freshman SeminarENGL101English Composition IPHED101Lifetime ActivitiesCMIS101Fund. Comp. Appl.HU COREHumanities Elective (1st)SCILaboratory Science (1st)	$ \begin{array}{c} 1\\ 3\\ 1\\ 3\\ 4\\ \hline 15 \end{array} $	SOCI 101 ENGL 102 MATH HLTH 102 HU CORE SCI	Second Semester Principles of Sociology English Composition II CORE 2 Lifetime Health Humanities Elective (2nd) Laboratory Science (2nd)	$\begin{array}{c}3\\3\\1\\3\\4\\-17\end{array}$
SS COREPrin. of Econ. I (ECON-231)PSYC221Gen. PsychologySPCH250Effective SpeechPOLS102American Fed. Govt.MGMT381Fund of Management Restricted Elective	3 3 3 3 3 3 	SS CORE ECON 240 POLS 312 HUMS 210 ENGL 202	Fourth Semester Prin. of Econ. II (ECON-232) Intro. Labor Unions State & Local Govt. Intro Welfare & Poverty Bus & Prof Writing	3 3 3 3 3 3
ECON 335 Public Finance HUMS 340 Research and Statistics POLS 316 Comparative Government Restricted Electives	$\begin{array}{c}3\\3\\6\\-\\15\end{array}$	MGMT310 SOCI 343 HUMS 320	Sixth Semester Small Business Mgmt. Cultural Diversity Public Administration Restricted Electives	$ \begin{array}{r} 3\\3\\9\\\hline 18\end{array} $
MGMT 482 Human Resource Mgmt. POLS 340 Constitutional Law Restricted Electives HUMS 100 Community Service Elective	3 3 6 2 3	HUMS 475 HUMS 490	Eighth Semester Seminar in Public Service Practicum Capstone Internship	3 12
	17			15

*Must not be a Math course below the 100 level.

Restricted electives can be taken from courses in accounting, economics, labor studies, political science, sociology or courses with the code HUMS, or with the consent of the advisor, may include an 18-hour minor in any additional field in the College of Business, Humanities and Sciences.

PUBLIC SERVICE ADMINISTRATION (Community Economic Development Track)

The Public Service Administration program offers an interdisciplinary track in Community Economic Development, which includes minors in Business Administration and Economics. This program provides career training and practicum internship work experience in economic development and the changing regional economy for students desiring research and administrative positions in both private and public settings such as regional firms, banks, regional planning and development councils, state agencies, and utilities. The student will obtain a strong background in the social sciences, economics, business areas, planning, and various applied disciplines.

The track is ideal for students interested in a changing economy and the need for trained people to knowledgeably deal with economic strategies and economic development. Students will be introduced to the global economy since there is a need for people who understand domestic and international economic issues to be with state and regional firms that operate and compete in the international arena.

Each student will participate in a unique semester-long supervised practicum capstone internship in which the student gains academic credit for economic development work experience in a cooperating private or public setting.

Program Learning Outcomes

- 1. To prepare students for management positions in government agencies.
- To offer students the opportunity to develop skills needed for the quickly growing notfor-profit sectors.
- 3. To provide students a broad liberal arts background so that they can adapt to the changing job requirements of the public agencies.
- 4. To give students interest in graduate school in public administration or political science sufficient academic preparation for such career options.

PUBLIC SERVICE ADMINISTRATION (Community Economic Development Track)

TECH ENGL PHED MATH HU COF SCI	100 101 101 RE	First Semester Freshman Seminar English Composition I Lifetime Activities CORE 2 * Humanities Elective (1st) Laboratory Science (1st)	$ \begin{array}{c} 1\\3\\1\\3\\4\\-15\end{array} $	ECON 240 CMIS 101 ENGL 102 HLTH 102 HU CORE SCI	Second Semester Intro. Labor Unions Fund. Comp. Appl. English Composition II Lifetime Health Humanities Elective (2nd) Laboratory Science (2nd)
SS COR MGMT BLAW ACCT POLS SS COR	E 381 301 201 102 E	Fhird Semester Prin. of Econ. I (ECON-231) Fund. of Management Business Law Princ. of Acct. I American Fed. Govt. (ECON 301 Inter. Theory)	$ \begin{array}{r} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 18 \end{array} $	ACCT 202 SS CORE POLS 312 SOCI 101 HIST 350	Fourth Semester Prin. of Acct. II Prin. of Econ. II (ECON-232) State & Local Govt. Prin. of Sociology WV and its Appalachian Setting
HUMS ECON ECON SPCH	340 335 331 250	Fifth Semester Research and Statistic Public Finance Restricted Elective Money and Banking Effective Speech	3 3 3 3 3 3 	ENGL 305 HUMS 320 MGMT310 MKTG 330 ECON 449 SOCI 330	Sixth Semester Scientific Technical Writing Public Administration Small Business Mgmt. Marketing Global Economic Issues Industrial Sociology
FINC HUMS POLS SOCI HUMS	S 325 470 340 305 100	eventh Semester Financial Management Health Services Planning Constitutional Law Restricted Electives Social Power Community Service	$\begin{array}{c}3\\3\\3\\3\\2\\\hline1\end{array}$	ECON 475 HUMS 490	Eighth Semester Seminar in CED Practicum Capstone Internship

* Must not be a Math course below the 100 level.

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PUBLIC SERVICE ADMINISTRATION, B.S. Construction Administration Track

The Public Service Administration program offers a track in Construction Administration which combines technical and administrative skills for those seeking rewarding careers in managing construction projects. It is impossible to go through one day without coming in contact with something related to construction and the industry is one of the nation's largest employers.

Each student will participate in a unique semester-long supervised practicum capstone internship in which the student gains academic credit for administrative work in the rapidly growing construction industry.

Fir	st Semester			Second Semester	
TECH 100 Fre	shman Seminar	1	ECON 240	Intro. to Labor Unions	3
ENGL 101 Eng	glish Composition 1	3	CMIS 101	Fund. Comp. Appl.	3
PHED 10 Life	etime Activities	1	ENGL 102	English Composition II	3
MATH CO	RE 2 (Finite)	3	HLTH 102	Lifetime Health	1
HU CORE Hu	manities Elective (1st)	3	HU CORE	Humanities Elective (2 nd)	3
SCI Lat	poratory Science (1st)	4	SCI	Laboratory Science (2 nd)	4
		15			17
Thi	rd Semester			Fourth Semester	
SOCI 101 Prin	n. of Sociology	3	CIET 131	Materials Construction	3
SS CORE EC	ON-231 Prin of Econ I)	3	SS CORE	(ECON 232 Prin of Econ II)	3
MGMT 381 Fur	nd. of Management	3	POLS 312	State & Local Government	3
ACCT 201 Prin	n. of Accounting	3	SOCI 330	Industrial Sociology	3
POLS 102 Am	nerican Fed. Government	3	CIET 310	Surveying Laws	3
SS CORE (EC	CON 301 Inter. Theory)	3			
		18			15
Fif	th Semester			Sixh Semeseter	
HUMS 340 Res	search and Statistics	3	ENGL 305	Scientific Technical Writing	3
HUMS 470 Hea	alth Services Planning	3	HUMS 320	Public Administration	3
ECON 335 Put	olic Finance	3	MGMT310	Small Business Mgmt.	3
CIET 320 Con	nstruction Methods & Equip.	3	ACCT 202	Prin of Acct. II	3
SPCH 250 Eff	ective Speech	3	CIET 325	Codes, Contracts & Cost Analysis	3
			ECON 331	Money and Banking	3
		15			18
Seve	onth Semester			Eight Semester	
FINC 325 Fin	ancial Management	3	ECON 475	Seminar in Community Economic	
POLS 340 Con	nstitutional Law	3		Development	3
SOCI 305 Soc	cial Stratification	3	HUMS 490	Practicum Capstone Internship	12
HUMS 100 Con	mmunity Service	2			
MKTG 330 Ma	rketing	3			
BLAW 301 Bus	siness Law	3			

150

PUBLIC SERVICE ADMINISTRATION (Criminal Justice Administration Track)

The Public Service Administration program offers an interdisciplinary track in Criminal Justice Administration, which includes minors in Business Administration and Economics. This program provides career training and practicum internship work experience in Criminal Justice Administration and the changing regional economy for students desiring research and administrative positions in both state and federal settings. The student will obtain a strong background in the social sciences, sociology, economics, business areas, criminal justice, planning, and various applied disciplines.

The track is ideal for students interested in a changing economy and the need for trained people to knowledgeably deal with challenges in criminal justice administration..

Each student will participate in a unique semester-long supervised practicum capstone internship in which the student gains academic credit for criminal justice administration work experience in a cooperating state or federal setting.

Program Learning Outcomes

- 1. To prepare students for management positions in criminal justice facilities.
- To offer students the opportunity to develop skills needed for the quickly growing notfor-profit sectors.
- 3. To provide students a broad liberal arts background so that they can adapt to the changing job requirements of the public agencies.
- 4. To give students interest in graduate school in public administration or political science sufficient academic preparation for such career options.

Public Service Administration (Criminal Justice Administration Track)

		First Semester			Second Semester	
TECH	100	Freshman Seminar	1	SOCI 101	Principles of Sociology	3
ENGL	101	English Composition I	3	ENGL 102	English Composition II	3
CMIS	101	Fund. Comp. Appl.	3		Math Core (not below 100 level)	3
HU CO	RE	Humanities Elective (1st)	3	SOCI 233	Juvenile Justice	3
SCI		Laboratory Science (1st)	4	SCI	Laboratory Science (2nd)	4
						10
			14			16
	,	Third Semester			Fourth Semester	
SS COR	E	Prin. of Econ. I	3	SS CORE	Principles of Econ. II	3
PSYC	221	General Psychology	3	ENGL 202	Business & Professional Writing	3
SPCH	250	Effective Speech	3	HUMS 210	Intro. to Social Welfare and Poverty	3
POLS	102	American Fed. Govt.	3	HU	Core Humanities Elective (2nd)	3
SOCI 22	22/32	Social Problems	3	SOCI 250	Community Based Corrections	3
SOCI	240	Corrections Counseling	3		,, ,	
			10			15
		Fifth Compation	18		Sivith Compation	13
THING	240	Film Semester	2	500T 242	Sixti Semester	2
HUMS	340	Research and Statistics	3	SUCI 343	Dublic Administration	3
SOCI	323	Criminology	2	HUMS 520	Public Administration	2
SOCI	345	Sociology of women	3	POLS 312	State and Local Government	3
ECON	333	Public Finance	3	SUCI 305	Social Stratification	3
POLI	310	Comparative Governments	3	MK1G 381	Fundamentals of Management	3
					Restricted Elective***	
			15			18
	S	eventh Semester			Eighth Semester	
MGMT	482	Human Resource Management	3	HUMS 490	Practicum Internship	12
POLS	340	Constitutional Law	3	SOCI 450	Seminar in Criminal Justice*	3
HUMS	100	Community Service	2			
SOCI	450	Special topics in World Reli.	3			
SOCI	455	Criminal Justice*				
		Restricted Elective**	6			
			17			1.5
			1/			13

* Classes labeled Readings and Research (SOC 455) or Special Topics (SOC 450) or Senior Seminar for Criminal Justice (SOC 450) would consist but not necessarily be limited to the following:

- Race Gender and Crime
- Treatment of Offenders
- Management of Criminal Justice Organizations

**Restricted electives classes in psychology, political science, sociology, economics or additional classes in the criminal justice areas as approved by the advisor.

PUBLIC SERVICE ADMINISTRATION Criminal Justice Administration Track (For students with the AAS in Corrections)

To complete the AAS in Corrections, students should include in their Technical Core the following courses during their first two years.

ANY SEMESTER

Fundamentals of Computer Applications

ANY FALL SEMESTER

SOCI 222-321 Social Problems

ANY SPRING SEMESTER

HUMS 220/320 Public Administration

POLS 212/312 State and Local Government

It is also required that those who complete the AAS program in Corrections will be practitioners in the correction field and have documented the required component in Community Service.

FALL COURSES Junior or Senior Year

HU CORE	Humanities Elective (1st)
SS CORE	Principles of Economics I
POLS 102	American Federal Government
SOCI 345	Sociology of Women
ENGL 102	English Composition II

FALL COURSES

Junior or Senior Year

 HUMS
 340

 ECON
 335

 POLS
 316

 MGMT
 482

 POLS
 340

 SOCI
 430

SPRING COURSES Junior Year

3		Lab Science (2nd)	4
3	SS CORE	Principles of Economics II	3
3	HU CORE	Humanities (2nd)	3
3	SOCI 305	Social Stratification	3
3	MGMT 381	Fundamentals of Management	3
15			16

SPRING OR SUMMER COURSES Senior Year

Research and Stats	3	HUMS	490	Practicum		6
Public Finance	3	SOCI	455	Readings/Research	Criminal Justic	e 3
Comparative Government	3			Restricted Elective		3
Human Resource Mgt.	3	ENGL	305	Scientific/Technical	Writing	3
Constitutional Law	3					
World Religions	3					
	_					
	18					15

PUBLIC SERVICE ADMINISTRATION (Law and Legal Services Administration Track)

The Public Service Administration program offers an interdisciplinary track in Law and Legal Services Administration, which includes minors in Political Science, Sociology, and Economics. This program provides career training and practicum internship work experience in law, the legal system, and legal services. The program is intended for students who plan to attend law school or seek positions in offices that provides legal services. Students will obtain a strong background in law, economics, political science, sociology, and administration.

Each student will participate in a unique semester-long supervised practicum capstone internship in which the student gains academic credit for legal experience in a cooperating state, federal, or private setting.

Public Service Administration (Law and Legal Services Administration Track)

		First Semester			Second Semester	
TECH	100	Freshman Seminar	1	SOCI 101	Principles of Sociology	3
ENGL	101	English Composition I	3	ENGL 102	English Composition II	3
CMIS	101	Fund. Comp. Appl.	3		Math Core (not below 100 level)	3
HU COI	RE	Humanities Elective (1st)	3	BUAD 201	Business Law	3
SCI		Laboratory Science (1st)	4	SCI	Laboratory Science (2nd)	4
			 14			
						10
	r	Third Semester			Fourth Semester	
SS COR	E	Principles of Econ. I	3	SS CORE	Principles of Economics II	3
PSYC	221	General Psychology	3	ENGL 202	Business & Professional Writing	3
SPCH	250	Effective Speech	3	HUMS 210	Intro. to Social Welfare and Poverty	3
POLS	102	American Federal Govt.	3	HU	Core Humanities Elective (2nd)	3
SOCI 22	22/321	Social Problems	3	ECON 346	Interpreting Labor Agreements	3
ECON	345	Labor Law	3			
			18			15
		Fifth Semester			Sixth Semester	
HUMS	340	Research and Statistics	3	FCON 348	Arbitration Practices & Procedures	3
SOCI	325	Criminology	3	SOCI 343	Cultural Diversity	3
SOCI	345	Sociology of Women	3	HUMS 320	Public Administration	3
ECON	335	Public Finance	3	SOCI 305	Social Stratification	3
POLI	316	Comparative Governments	3	ECON 360	Employee Relations Law	3
1011	510	comparative covernments	5	MGMT381	Fundamentals of Management	3
				110111201	i undumentaris or intunugement	
			15			18
	S	eventh Semester			Eighth Semester	
MGMT	482	Human Resource Management	3	HUMS 490	Practicum Capstone Internship	12
POLS	340	Constitutional Law	3	HUMS 475	Seminar	3
HUMS	100	Community Service	2	1101110 110	S S S S S S S S S S S S S S S S S S S	U
SOCI	430	World Religions	3			
2001	150	Restricted Elective**	3			
POLS	312	State and Local Government	3			
1010	512	Surve and Local Of terminent				
			17			15

**Restricted electives classes in psychology, political science, sociology, economics or additional classes in the criminal justice areas as approved by the advisor.

PUBLIC SERVICE ADMINISTRATION Non-Profit Administration Track

Non-Profit Administration is an interdisciplinary major focusing on public and private nonprofit organizations. The program recognizes that many agencies require personnel with administrative skills combined with a strong background in both the social sciences and management for research, social service, and administrative positions.

Program Learning Outcomes

- 1. To prepare students for management positions in government agencies.
- 2. To offer students the opportunity to develop skills needed for the quickly growing notfor-profit sectors.
- 3. To provide students a broad liberal arts background so that they can adapt to the changing job requirements of the public agencies.
- 4. To give students interest in graduate school in public administration or political science sufficient academic preparation for such career options.

PUBLIC SERVICE ADMINISTRATION (Non-Profit Administration Track)

TECH ENGL PHED MATH (HU COF SCI	100 101 101 CORE RE	First Semester Freshman Semina English Composition Lifetime Activities 2 (Finite) Humanities Elective (1 st) Laboratory Science (1 st)	$ \begin{array}{c} 1 \\ 3 \\ 1 \\ 3 \\ 4 \\ 15 \end{array} $	POLS 240 CMIS 101 ENGL 102 HLTH 102 HU CORE SCI	Second Semester Non-Profit Organizations Fund. Comp. Appl. English Composition II Lifetime Health Humanities Elective (2 nd) Laboratory Science (2 nd)
SS COR MGMT BLAW ACCT POLS SS COR	E 381 301 201 102 E	Third Semester Princ. of Econ. I (ECON-231) Fund. of Management Business Law Princ. of Accounting I American Fed. Government (ECON 301 Inter. Theory)	3 3 3 3 3 3 3 	ACCT 202 SS CORE ECON 240 SOCI 101 HUMS 210	Fourth Semester Princ. of Accounting II Princ. of Econ II (ECON-232) Intro. to Labor Unions Princ. of Sociology Social Welfare & Poverty
HUMS ECON SOCI ECON SPCH HUMS	340 334 305 331 250 480	Fifth Semester Research and Statistics Public Finance Social Stratification Money and Banking Effective Speech Grant Writing and Documentation	$ \begin{array}{r} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 18 \end{array} $	ACCT 345 ENGL 305 HUMS 320 MGMT310 POLS 312 MGMT482	Sixth Semester Governmental Accounting Scientific Technical Writing Public Administration Small Business Mgmt. State & Local Government Human Resource Mgmt.
FINC POLS SOCI SOCI HUMS MKTG	S 325 340 330 321 100 330	eventh Semester Financial Management Constitutional Law Industrial Sociology Social Problems Community Service Marketing	3 3 3 3 2 3	POLS 480 HUMS 490	Eighth Semester Non-Profit Administration Practicum Capstone Internship

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3

4 ___ 17

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3

___ 18

3 12

15

REGENTS BACHELOR OF ARTS

Regents B. A. Degree

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. It offers an opportunity to gain credits for work and life experience, and it permits students to tailor their academic courses of study to meet their individual needs.

DEGREE REQUIREMENTS

TOTAL CREDITS:	128 hours
UPPER DIVISION COURSES:	40 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 Applications	3
GRADE POINT AVERAGE:	2.0

RULE OF FAILING GRADES: All Fs received four years or more prior to admission to the program are disregarded. Students who have received a second academic suspension however, are not eligible, except by special petition to the Committee on Classification and Grades.

RESIDENCE: 24 hours earned in one or more West Virginia's state-supported colleges or universities, including community colleges. At least 3 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 which 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.

AREAS OF EMPHASIS

WVU Tech encourages the adult student in the Regents B.A. program to complete a focused area of education. An area of emphasis is constituted by completing 15 graded hours of related

upper-division classroom work. Available emphases include the following:

- 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)

Other conditions apply, particularly concerning transfer credit. Students are encouraged to propose course work for an area of emphasis. Acceptance of courses is determined by the Regents Coordinator, upon consultation with appropriate department chairs. The approved area of emphasis is acknowledged on the student's transcript at graduation.

Program Learning Outcomes

- 1. 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, the sciences, the social sciences, and mathematics/computer applications.
- 2. 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:

Regents B.A. Coordinator WVU Institute of Technology Montgomery, WV 25136 (304) 442-3018

SPORT MANAGEMENT Bachelor of Science

Sport Management is offered by WVU Tech through the West Virginia University School of Physical Education. 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 Sciences, the student is ordinarily admitted as a Pre-Sport Management major and completes a minimum of 58 credit hours, including a minimum of 21 hours of foundation courses and 37 hours of general education classes 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: ACCT 201, ENGL 101, ECON 232, JOUR 101, SPCH 250, and the University Math requirement. Upon meeting these requirements, the student must complete an application for admission to the Sport Management Program. Six hours of restricted electives must be completed from these courses: ACCT 202, MKTG 305, BLAW 301, FINC 325, ECON 231, and ENGL 202. Students must have a grade of "C" or higher in foundation requirements and applied area requirements.

In addition to the general education learning outcomes listed elsewhere in the catalog, graduates of Sport Management will:

- 1. Recognize the importance and significance of the role of sport management
- 2. Develop analytical and communication skills appropriate to the professional and corporate environment
- 3. Be prepared to assume management positions in variety of athletic and sport- related businesses and industries
- 4. Be familiar with compliance programs at the collegiate and national athletic sport levels
- 5. Recognize the importance of continuing emotional, social, intellectual, and physical development throughout their lives

SPORT MANAGEMENT Bachelor of Science Pre-Sport Management Program

		First Semester			Second Semester	
ENGL	101	Engl. Composition I	3	ENGL 102	Engl. Composition II	3
TECH	100	Freshman Seminar	1	HLTH 102	Lifetime Health*	2
PHED	167	Intro. to Sport Mang.	3	SOCI 101	Principles of Sociology*	3
BIOL	111	General Biology*	4	BIOL 112	General Biology*	4
MATH	124	Finite Math*	3	JOUR 101	Mass Communication	3
ARTS	113	Art Appreciation*	3	CMIS 101	Intro. to Computers	3
			17			18
	,	Third Semester			Fourth Semester	
ACCT	201	Drin of Assessmeting I	2	ACCT 202	Drin of Accounting II**	3
	201	Prin. of Accounting I	3	ACC I 202	Fini. Of Accounting II.	J
ECON	201	Prin. of Economics I**	3	ECON 232	Prin. of Economics II	3
ECON PHED	201 231 271	Prin. of Accounting I Prin. of Economics I** Sociology of Sport	3 3 3	ACC 1 202 ECON 232 PHED 272	Prin. of Economics II Psychology of Sport	3
ECON PHED SPCH	201 231 271 250	Prin. of Accounting I Prin. of Economics I** Sociology of Sport Speech	3 3 3	ACCT 202 ECON 232 PHED 272 HIST 102	Prin. of Economics II Psychology of Sport World Civilization*	3 3 3 3
ECON PHED SPCH HIST	201 231 271 250 101	Prin. of Accounting 1 Prin. of Economics I** Sociology of Sport Speech World Civilization*	3 3 3 3	ACCT 202 ECON 232 PHED 272 HIST 102 ELEC	Prin. of Accounting II P Prin. of Economics II Psychology of Sport World Civilization* Elective	3 3 3 3 3
ECON PHED SPCH HIST	201 231 271 250 101	Prin. of Accounting 1 Prin. of Economics I** Sociology of Sport Speech World Civilization*	3 3 3 3	ACCT 202 ECON 232 PHED 272 HIST 102 ELEC	Prin. of Accounting II Prin. of Economics II Psychology of Sport World Civilization* Elective	3 3 3 3

Sport Management Program

Fifth Semester

MKTG	330	Principles of Marketing
PHED	370	Sport Finance
MGMT	381	Principles of Management
ELEC		Elective
ELEC		Elective

Six	th	S	em	est	ter	•

3	POLS 316	Comp. Government*	3
3	ELEC	Elective	3
3	PHED 380	Hist/Phil of Sport	3
3	HUMS 320	Public Administration	3
3	ELEC	Elective	3
15			15

Seventh Semester Eighth Semester PHED 485 Sport Management 3 PHED 486 Sport Marketing 3 PHED 425 Facility Planning 3 PHED 487 Issues in SM 3 9 3 PHED 426 Sport Law PHED 489 Internship 3 3 ELEC Elective PHED 488 SM Senior Project ELEC 3 Elective ___ 15 18

*Suggested GEC Courses. Other courses will substitute. See Advisor.

**Suggested Restricted electives. Other courses will substitute. See Advisor.

West Virginia University Institute of Technology offers a Three Plus Two teacher education program which leads to a Bachelor Degree in a subject area and a Master of Education. Students complete three years of the program on the WVU Tech campus and then transfer to WVU for the remaining two years. Entry into the program requires an ACT composite of 23 or 3.00+ or better average in high school. Entry into the program does not guarantee admissions to the teacher education program at WVU. Positions in the program are competitive, and students must apply for admission at the end of the sophomore year at WVU Tech. Students must also take and pass the PPST by the end of the second year.

Chemistry & General Science 5-12 CERTIFICATON ON WVU TECH CAMPUS

EDUC 100 Ed Colloquium 1 ENGL 102 English Composition II	
ENGL 101 English Composition I 3 PHSC 311 Astronomy	3
MATH 155 Calculus I 3 MATH 156 Calculus II	4
PSYC 221 General Psychology 3 CHEM 116 Fund. of Chemistry	4
CHEM 115 Fund of Chemistry 4	
HIST 388 History of Technology 3	
Volunteering Requirement	17
Third Somector Fourth Somector	
CHEM 233 Organic Chem I 3 EDUC 200 Prof Inquiry	3
CHEM 235 Organic Chem Lab I CHEM 234 Organic Chem II	3
PHSC 104 Geology 3 SPCH 250 Effective Speech	3
MATH 251 Multivariable Calculus 4 CHEM 236 Organic Chem Lab II	1
BIOI 111 General Riology 4 PSYC 241 Life-Snan Development	1 3
PHIL 305 Intro to Critical Reas. 3 BIOL 112 General Biology	. 3
18	17
Fifth Semester Sixth Semester	
EDUC 301 Learning in Ed. Setting I 2 EDUC 302 Learning in Ed. Setting	s II 2
EDUC 311 Practicum I 1 EDUC 312 Practicum II	1
BIOL 353 Dendrology 3 CHEM 215 Analytical Chemistry	4
PHYS 213 Phys for Sci & Engr 4 CHEM 241 Physical Chemistry	3
MUSC 142 Survey of Music 3 CHEM 242 Physical Chemistry Lab	1
SPCH 471 Oral Interpretation 3 PHYS 214 Phys for Sci & Engr	4
SOCI 343 Cultural Diversity 3	

*

ON WVU CAMPUS

Seventh Semester

CHEM	312	Environmental Chem
EDUC	405	The Junior High Sch.
EDUC	400	Instru Design & Eval
EDUC	410	Practicum III
PHIL	310	Phil of Science
]	Ninth Semester
EDUC	600	Teacher as Researcher

EDUC 612 Professional Internship

	Eighth Semester	
EDUC 401	Managing & Org Lang Env.	3
EDUC 411	Practicum IV	2
C&I 444	Methods of Teach. Sci	3
	Electives(upper Div. Sci.)	6
		14
	Tenth Semester	
EDUC 601	Context of Education	3
EDUC 602	Teacher as Leader	3
EDUC 687	Instructional Practicum	3
	Restricted Elective	6
		15

LANGUAGE ARTS **5-12 CERTIFICATION ON WVU TECH CAMPUS**

	First Semester			Second Semester	
EDUC	100 Ed. Colloquium	1	ENGL 102	English Composition II	3
ENGL	101 English Composition I	3	MATH 126	College Algebra	3
ENGL	241 American Lit. I	3	ENGL 242	American Lit. II	3
HIST	152 US History	3	HIST 153	US History	3
POLS	102 American Fed. Gov't	3	CMIS 101	Fund of Comp Appl	3
	Language (foreign)	3		Language (foreign)	3
MUSC	142 Survey of Music	3			
	2				
		19			18
*Voluntee	ering Requirement - 2nd semester				
	Third Semester			Fourth Semester	
ENGL	261 English Lit. I	3	ENGL 262	English Lit. II	3
PSYC	221 General Psychology	3	EDUC 200	Prof. Inquiry	3
ENGL	259 Literature of Youth	3	PSYC 241	Life-Span Development	3
	Language (foreign)	3	SCI	Lab Science	4
SCI	Lab Science	4	SOCI 343	Cultural Diversity	3
		16			16
	Fifth Semester			Sixth Semester	
EDUC	301 Learning in Ed Setting I	2	EDUC 302	Learning in Ed Setting II	2
EDUC	311 Practicum I	1	EDUC 212	Practicum II	1
ENGL	221 The English Language	3	ENGL 329	Topics in the English Language	3
ENGL	352 Topics in Appalachian Studies	3	SPCH 471	Oral Interpretation	3
SPCH	250 Speech	3	ENGL 263†	Shakespeare I	3
PHIL	305 Intro to Critical Reasoning	3	ENGL 111	Intro to Creative Writing	3
				Restricted Elective	3
		15			18
					10
	Soventh Semester	ON W	VU CAM	PUS Fighth Somostor	
EDUC	405 The Middle School	3	ENGL 300	Approach to Teach Comp	3
EDUC	400 Instru Design & Eval	3	ENUL 307	Managing & Org Lang Env	3
FDUC	410 Practicum III	2	EDUC 411	Practicum IV	2
C&I	425 Approach to Teach Lit	2	COMM 122	Comm Methods	3
Classics	232 Greek & Roman Myths	3	C&I 324	Teach I ang Arts	3
Clussics	252 Oleck & Roman Wryths	5	C&I 424	Approach to Teach Lang	2
		12		•	
		13			10
	Ninth Semester			Tenth Semester	
EDUC	600 Teacher as Researcher	3	EDUC 601	Context of Education	3
EDUC	612 Professional Internship	12	EDUC 602	Teacher as Leader	3
			EDUC 687	Instructional Practicum	3
				Restricted Elective	3
				Capstone in Engl Educ	3
		15			15

MATHEMATICS 5-12 CERTIFICATION ON WVU TECH CAMPUS

First Semester

		// // // // // // // // // // // //
EDUC	100	Ed. Colloquium
ENGL	101	English Composition I
MATH	155	Calculus I
		Language

Language Lab Science

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*Volunteering Requirement - 2d semester

Third Semester

MATH	251	Multivariable Calculus
MATH	218	History of Math
PSYC	221	General Psychology
PHIL	305	Intro to Crit Reas
		Language

Fifth Semester

301	Learning in Ed Setting
311	Practicum I
343	Cultural Diversity
	Electives
238	Fundamental Geo
471	Oral Interpretation
	301 311 343 238 471

Seventh Semester

	~	
MATH	420	Numerical Analysis
MATH	451	Intro. to Real Analysis I
EDUC	400	Instru Design & Eval.
EDUC	410	Practicum III
		Restricted Elective

Ninth Semester

EDUC	600	Teacher as Researcher
EDUC	612	Professional Internship
		Restricted Elective

Second Semester

ENGL 102	English Composition II	3
CMIS 101	Fund of Comp Appl	3
MATH 156	Calculus II	4
	Language	3
	Lab Science	4

Fourth Semester

PSYC 241	Life-Span Development	3
EDUC 200	Prof. Inquiry	3
MATH 441	Applied Linear Algebra	3
MATH 283	Intro. to Concepts of Math	3
	Language	3
SPCH 250	Effective Speech	3

18

17

Sixth Semester

EDUC 302	Learning in Ed Setting II	2
EDUC 312	Practicum II	1
MATH 341	Intro. to Algebra Structures	3
MATH 261	Elementary Diff. Equations	4
SOCI 322	Cult Anthropology	3
	Electives	6
		19

ON WVU CAMPUS

Eighth Semester

STATS 215	Prob. & Stats	3
EDUC 401	Managing & Org Lang Env	3
EDUC 411	Practicum IV	2
MATH	Methods	3
EDUC 405	The Middle School	2

13

Tenth Semester

3	EDUC 601	Context of Education	3
12	EDUC 602	Teacher as Leader	3
3		Restricted Elective	3
18			9

TECHNOLOGY MANAGEMENT

The Technology Management program is designed to supplement technology programs at the Associate degree level with a core of management courses necessary to attain the Bachelor of Science degree. Students with current employment in technology fields will realize enhanced career opportunities from the management education provided by this program. In addition, students may select elective courses from Business Management minors or technology programs to further develop areas of interest.

To be admitted to the "Plus-2" Technology Management degree program, a student must have completed an Associate of Science or Applied Science degree in an engineering technology, applied science, or health program or equivalent from an accredited institution with a cumulative grade point average of 2.0 or better. Graduates of the A.S. Business Technology program do not qualify for this program due to the overlap of required management courses.

Program Learning Outcomes

In addition to the general education learning outcomes and program objectives listed elsewhere in the catalog, the successful student of the Technology Management program will:

- 1. Be able to apply management principles to his/her technical area.
- 2. Be able to perform financial analysis for the purpose of evaluating performance and developing strategic plans.
- 3. Be familiar with federal EEO and safety legislation and understand the importance of compliance.
- 4. Understand the complexity of human behavior within an organization.
- 5. Develop the necessary analytical, computer, and communication skills to analyze data and to present findings.
- 6. Understand the role of business in society and the role of business ethics in decision making.

Technology Management Plus-2 Bachelor of Science

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ACCT	201	Principles of Accounting I	3	ACCT 202	Principles of Accounting II
BLAW	301	Business Law (or BLAW 302)	3	SCI	Lab Science(2nd)
MGMT	381	Fundamentals of Management	3	ECON 232	Principles of Economics II
ECON	231	Principles of Economics I	3		General Elective (Core 6)
MGMT	386	Business Statistics	3	HU	Core Elective or Free Elective**
			15		

Sixth Semester of Accounting II

3

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*To meet the 40-hour upper division requirement for a 4-year program, the student may need to take 300 or 400 level classes for the electives. Lower level courses transferred in from a 2-year college at 300 or 400 level do not count towards the upper level course requirement.

**Restricted electives are limited to 300 or 400 level classes with the following course codes: ACCT, FINC, MGMT, MKTG or an approved course from the student's technology program area.

NOTE: Prior to graduation, students must: (1) take the ETS Business test and (2) complete the core Citizenship requirement.

Technology Management (Emphasis: Information Technology) Plus-2 Bachelor of Science

This Emphasis is intended for students who have completed either the A.S. in Computer Information Technology or the state-wide A.A.S. in Information Technology Technical Studies.

The Internetworking course sequence assumes the prior completion of the Internetworking I-IV sequence of the Cisco certification path.

		Fifth Semester			Sixth Semester	
ACCT	201	Principles of Accounting I	3	ACCT 202	Principles of Accounting II	3
ECON	231	Principles of Econ I	3	ECON 232	Principles of Econ II	3
MGMT	381	Fund. of Management	3	SCI	Lab Science (2nd)	4
		General Elective (Core 6)	3	ENGL 305	Sci/Tech Writing (or 102)	3
ELET	321	Internetworking V	4	ELET 421	Internetworking VI	4
		-			-	
			16			17
	S	eventh Semester			Eighth Semester	
MGMT	S 386	eventh Semester Bus Stat (or MGMT382)	3	MKTG 330	Eighth Semester Marketing	3
MGMT HU	S 386	eventh Semester Bus Stat (or MGMT382) Core Elective*	3 3	MKTG 330 CMIS 361	Eighth Semester Marketing Structured System Design	3 3
MGMT HU CMIS	S 386 360	eventh Semester Bus Stat (or MGMT382) Core Elective* System Analysis Methods	3 3 3	MKTG 330 CMIS 361	Eighth Semester Marketing Structured System Design Second Computer Language	3 3 3
MGMT HU CMIS ACCT	S 386 360 331	eventh Semester Bus Stat (or MGMT382) Core Elective* System Analysis Methods Managerial Accounting	3 3 3 3	MKTG 330 CMIS 361	Eighth Semester Marketing Structured System Design Second Computer Language General Elective Core*	3 3 3 3
MGMT HU CMIS ACCT ELET	S 386 360 331 322	eventh Semester Bus Stat (or MGMT382) Core Elective* System Analysis Methods Managerial Accounting Internetworking VII	3 3 3 3 4	MKTG 330 CMIS 361 ELET 422	Eighth Semester Marketing Structured System Design Second Computer Language General Elective Core* Internetworking VIII	3 3 3 3 4
MGMT HU CMIS ACCT ELET	S 386 360 331 322	eventh Semester Bus Stat (or MGMT382) Core Elective* System Analysis Methods Managerial Accounting Internetworking VII	3 3 3 4	MKTG 330 CMIS 361 ELET 422	Eighth Semester Marketing Structured System Design Second Computer Language General Elective Core* Internetworking VIII	3 3 3 3 4

*To meet the 40-hour upper division requirement for a 4-year program, the student may need to take 300 or 400 level classes for electives. Lower level courses transferred in from a 2-year college at 300 or 400 level do not count towards the upper level course requirement.

NOTE: Prior to graduation, students must: (1) take the ETS Business test and (2) complete the core Citizenship requirement.

MINORS AND EMPHASES EMPHASIS IN ECONOMICS CODE 421

A student interested in both economics and business administration may major in business management and take up to 24 hours of economics. Labor related courses are in economics.

EMPHASIS IN GOVERNMENT

A student interested in both political science and history may major in history and government and take a wide assortment of political science courses.

MINOR IN ACCOUNTING

18 semester hours to include:							
ACCT	201	Principles of Accounting I	3				
ACCT	202	Principles of Accounting II	3				
ACCT	342	Intermediate Accounting I	3				
PLUS t	hree of th	ne following courses:					
ACCT	343	Intermediate Accounting II	3				
ACCT	432	Cost Accounting	3				
ACCT	348	Financial Statement Analysts	3				
ACCT	445	Accounting Information Systems	3				
ACCT	446	Income Tax I	3				
ACCT	447	Income Tax II	3				
ACCT	448	Accounting and Finance Internship	3				

MINOR IN BUSINESS ADMINISTRATION*

-	,		
24 semester l	nours as	follows:	
ACCT	201	Principles of Accounting I	3
ACCT	202	Principles of Accounting II	3
BLAW	301	Business Law I	3
		(or BLAW-302 Business Law II)	
CMIS	101	Fundamentals of Computer Applications	3
		(or CMIS-162 Principles of Data Processing))
FINC	325	Financial Management I	3
MGMT	386	Business Statistics	3
MGMT	381	Fundamentals of Management	3
MKTG	330	Marketing	3
		-	

Course pre-requisites must be satisfied. This minor is not available to students who major in programs offered by the Department of Accounting and Finance or the Department of Management/MGMT Information Systems.

MINOR IN ECONOMICS CODE 423

18 semester hours as follows: ECON-231, ECON-232, ECON-331, and nine additional hours of upper division economics. (course code ECON).

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

MINOR IN ECONOMICS FOR ENGINEERS AND ENGINEERING TECHNOLOGISTS

(Open only to Engineering and Engineering Technology Students)

18 semester hours as follows:

ECON 231	Principles of Economics I	3
ECON 232	Principles of Economics II	3
ECON 301	Microeconomic Theory	3
ECON 401	Managerial Economics	3
ACCT 201	Principles of Accounting I	3
MGMT 450	Managerial Science	3
	-	

MINOR IN FINANCE

18 semester	hours t	o include:	
FINC	325	Financial Management I	3
FINC	326	Financial Management II	3
FINC	327	Securities Investments	3
FINC	328	Financial Statement Analysis	3
PLUS two of	f the fo	llowing courses:	
FINC	321	Personal Finance	3
FINC	329	International Finance	3
ECON	331	Money, Banking & Fiscal Policy	3

Accounting or Finance Internship

MINOR IN FRAUD EXAMINATION

3

18 semester hours to include:

ACCT 448

342	Intermediate Accounting I	3
348	Financial Statement Analysis	3
420	Fraud Examination	3
421	Fraud Mgmt: Legal/Ethical Issues	3
422	Advanced Fraud Investigation & Analysis	3
431	E-Commerce, Info. Security & Control	3
	342 348 420 421 422 431	 342 Intermediate Accounting I 348 Financial Statement Analysis 420 Fraud Examination 421 Fraud Mgmt: Legal/Ethical Issues 422 Advanced Fraud Investigation & Analysis 431 E-Commerce, Info. Security & Control

MINOR IN GRAPHIC DESIGN

18 semester hours as follows:

PRNT	111	Intro to Printing Processes	3
PRNT	114	Electronic Publishing	3
ARTS	116	Intro to Graphic Design	3
ARTS	301	Graphic Design I	3
ARTS	302	Graphic Design II	3
ARTS	303	Graphic Design III	3
		· -	

* Students majoring in Industrial Relations and Human Resources are not eligible for this major.

MINOR IN HISTORY AND GOVERNMENT

12 semester hours as follows:

HIST	101	World Civilization	3
HIST	102	World Civilization	3
HIST	152	United States History to 1865	3
HIST	153	United States History Since 1865	3
2.1	CIIIO		

Plus 3 hours of HIST 300+ level courses and POLS 102, POLS 316

MINOR IN HUMAN RESOURCES ADMINISTRATION*

18 semester hours as follows:

ECON	240	Introduction to Labor Unions	3
ECON	337	Industrial Relations	3
ECON	345	Labor Law	3
ECON	360	Employee Relations Law	3
ECON	430	Collective Bargaining	3
MGMT	482	Human Resource Management	3

* Students majoring in Industrial Relations and Human Resources are not eligible for this major.

MINOR IN INTERNATIONAL BUSINESS

Required Courses (15 hours):

FCOM	1.10		2
ECON	449	Global Economic Issues	3
FINC	329	International Finance	3
MGMT	387	Intro to International Business	3
MGMT	388	International Business Management	3
MKTG	403	International Marketing	3
Elective Cou	rses (any	6 hours):	
FREN	101	French Language and Culture I	3
FREN	102	French Language and Culture II	3
GEOG	102	World Geography	3
MGMT	489	Managemeent Internship	3
SPAN	101	Elementary Spanish	3
SPAN	102	Elementary Spanish	3

MINOR IN MANAGEMENT\ INFORMATION SYSTEMS

18 semester	hours t	o include:	
CMIS	162	Principles of Computer Information Systems	3
CMIS	164	Visual Basic for Business Applications	3
CMIS	265	Visual C#.NET Programming	3
CMIS	360	Systems Analysis Methods	3
Plus two of t	he foll	owing courses:	
CMIS	361	Structured Systems Design	3
CMIS	363	Advanced Web Page Design	3
CMIS	364	Advanced Visual Basic NET	3
CMIS	368	COBOL Applications on Mainframes	3
CMIS	461	Database Systems Development for Business	3
CMIS	463	Management Information Systems	3
CMIS	464	Networks: LANs/WANs	3

All pre-requisites in CMIS course sequences must be met.

18

MINOR IN MANAGEMENT SCIENCE

semester hours as	s follows:	
MGMT 386	Business Statistics	3
MGMT 381	Fund. of Management	3*
MGMT 382	Operations Management	3
MGMT 480	Management Science I	3
MGMT 481	Management Science II	3
MGMT 483	Quality Management	3

MINOR IN MARKETING

18 semester hour	s to include:	
MKTG 330	0 Marketing	3
MKTG 305	5 Advertising	3
Plus four of the f	ollowing courses:	
MKTG 300	6 Retail Merchandising	3
MKTG 309	9 Sales Management	3
MKTG 40	1 Marketing Research	3
MKTG 402	2 Consumer Behavior	3
MKTG 403	3 International Marketing	3

MINOR IN MATHEMATICS

SEE Mathematics Program Major

MINOR IN POLITICAL SCIENCE CODE 427

18 hours in political science, consisting of POLS-102, POLS-316, POLS-340, and nine additional hours of political science electives (course code POLS) or, with the approval of the advisor, electives in human services (course HUMS).

MINOR IN SOCIOLOGY CODE 429

18 hours in sociology, anthropology, and social work, consisting of SOCI-101 and 15 additional hours of upper division electives in sociology (course code SOCI).

MINOR IN SPORTS MANAGEMENT

29 semester h	nours as f	follows:	
General Educ	cation Co	re Requirements:	
BIOL	111	General Biology	4
BIOL	112	General Biology	4
Business Cor	e Requir	ements:	
MKTG	402	Consumer Behavior	3
Plus	18 semes	ter hours to include:	
PHED	172	CPR/First Aid*	3
ECON	430	Collective Bargaining	3
Plus FOUR c	of the foll	owing courses:	
PHED	380	History and Foundation of Sport	3
PHED	271	Sociology of Sport	3
PHED	426	Sport Law	3
PHED	425	Facilities Planning	3
PHED	415	Organization and Administration of Sport	3
PHED	489	Internship in Sport Management	3
* PHED 172	should b	e taken the third semester.	

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 mainstreams 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 course emphasizes application and practical experience for a more complete understanding of the concepts.

To achieve the above objectives, the course 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 course 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 course, 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 course, normally taken during the junior and senior years, is limited to those graduates of the basic course 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 course, 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.

Leonard C. Nelson College of Engineering

LEONARD C. NELSON COLLEGE OF ENGINEERING

GENERAL INFORMATION Mission of the Leonard C. Nelson College of Engineering

The mission of the Leonard C. Nelson College of Engineering of the West Virginia University Institute of Technology closely reflects the mission of the Institute. The programs in the College of Engineering address the professional engineering and computer 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 social sciences. The programs strive to prepare tomorrow's engineers and computer 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 gives qualified students the opportunity to gain valuable experience practicing the fundamentals of engineering 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 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, innovation, and/or computer science. All programs impart the ability to use the tools of modern engineering and computer science in professional practice. The programs enhance the ability of the students to be critical thinkers, lifelong learners, team players, and responsible and ethical citizens. Furthermore, the College of Engineering seeks to provide graduate engineering education and currently offers a multidisciplinary program leading to a Masters of Science in Control Systems Engineering. 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 engineering education.

The College of Engineering seeks to have all of its programs achieve (if not already accredited) and maintain accreditation. The chemical, civil, electrical, and mechanical engineering programs are accredited by the Accreditation Board for Engineering and Technology (ABET) and all engineering and computer science programs are committed to continuous improvement in quality.

The College of Engineering 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 addresses the needs 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 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.

- Offering the first two years of some engineering programs such as Aerospace Engineering so that students can study at WVU Tech and then transfer to WVU.
- Developing web-based and web-enhanced as well as interactive video courses for distance delivery.

The Leonard C. Nelson College of Engineering 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 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 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 Research & Professional Activities

The Leonard C. Nelson College of Engineering 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 faculty, 88% are Ph.D.'s trained at some of the best institutions in the United States and abroad. In addition, 69% of the faculty are registered professional engineers (P.E.'s) or professional surveyors (P.S.'s), and several have MBA degrees.

The engineering and computer science faculty tend to participate in research and professional activities that reflect the "engineering practice" character of the institution.

Most 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 and graduate 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 in recent years. Major research programs have been funded by DoD, DoE, CAST supported by WVEPSCoR A continuing program to assist industry by performing energy audits of factories (funded by the West Virginia Development Office) is also funded every year. The engineering building is home for the Center for Research on Advanced Control of Autonomous Systems and Manufacturing (CRACASM). The Center brings together all the resources of WVU Tech technical information, educational programs, and applied research expertise to the business and industrial community of the state.

Another major initiative of the College of Engineering is a program to offer engineering education via distance learning to students at other colleges within West Virginia, and to employees of firms within West Virginia. The College of Engineering, in cooperation with a large number of other institutions, was one of the recipients of two Technology Reinvestment Projects grants totaling 80 million dollars for development of distance learning techniques and new standards to be used on the information superhighway.

Collaborative Accomplishments between WVU and WVU TECH Engineering Programs

Statewide CO-OP program: The WVU TECH 30 year old CO-OP program was extended statewide in the Fall of 1996 in collaboration with WVU. Common brochures for students and

employers have been developed. On an average, the CO-OP students earn \$20,000 per year in addition to enriching their classroom learning through real-world experiences.

Board of Trustees Instructional Technology Grants: Engineering faculty members from both WVU and WVU TECH have shown leadership in collaborating successfully to obtain funds through this BOT initiative. Two joint projects were awarded over \$100,000 to develop and integrate computer-based instructional WVU Technologies in classroom instruction.

Seamless Student Transfer: WVU TECH can now offer new opportunities to students interested in aerospace engineering, industrial and management systems engineering, mining engineering, and petroleum and natural gas engineering. In addition, students will have the opportunity to pursue dual degrees in closely related disciplines such as electrical and computer engineering, and mechanical and aerospace engineering.

Courses Through Distance Learning: WVU TECH and WVU regularly exchange courses between institutions. With the alignment of common calendars, common summer schedules, and compatible WVU Technologies, more distance learning courses will be offered in the future.

Common Vision Statement: The engineering deans formed a WVU-WVU TECH Collaboration Implementation Committee comprised of administrators, department chairmen, and faculty. On February 1, 1997, one of the first tasks completed by this committee was the development of a shared vision statement. The committee also addressed programmatic goals, administrative structure, and operational efficiencies to strengthen further collaborative efforts.

Collaboration with Computer Science:

The Computer Science Department at WVU TECH is in the College of Engineering. The Computer Science Department at WVU, has merged with the Electrical and Computer Engineering Department forming a single department in the College of Engineering and Mineral Resources. This has created new synergism and curricular opportunities for students at both institutions.

Center for Research on Advanced Control of Autonomous Systems and Manufacturing

The Center was established in December 2003 within the Leonard C. Nelson College of Engineering. The primary mission of the Center is to focus on research and development of a new generation of control systems and to contribute substantially to the research and development activities of WVU Tech, as well as the State of West Virginia. The Center will also focus its efforts on research in the area of sensors, controls, and energy and will establish a mechanism for technology transfer. The Center has the potential to lead to significant contributions to industrial growth, economic development and considerably strengthen the applied research capabilities in the State.

Through the Center's activities, the College of Engineering at WVU Tech will expand its research capabilities in the control systems areas in order to be competitive nationally in attracting research funds from external funding agencies and to contribute to the economic development in the State of West Virginia. This Center will help the College of Engineering at WVU Tech to have the state-of-the-art facilities for research, as well as delivering quality engineering education at the undergraduate and graduate levels and it will serve as the primary site for control systems research and development in the State of West Virginia.

Dr. Asad Davari, Professor of Electrical and Computer Engineering has been appointed to serve as the Founding Director of the Center. An Advisory Board consisting of engineering faculty members and industrial representative will help monitor the Center's progress and
help in focusing its activities towards achieving its goals.

About the College of Engineering

The Leonard C. Nelson College of Engineering offers Bachelor of Science degrees in Chemical Engineering, Civil Engineering, Electrical Engineering, Electrical Engineering Computer Engineering, Mechanical Engineering, and Computer Science. All engineering programs are accredited by the Engineering Accreditation Commission of ABET. WVU Tech is accredited by the North Central Association of Colleges and Schools. The College of Engineering provides the first two years of Aerospace Engineering with the last two years to be taken at WVU. The college also offers an Associate of Science degree in Computer Science with the Community College at WVU Tech. The College of Engineering offers a Master of Science degree in Control Systems Engineering.

WVU Tech has a student enrollment of approximately 2300 students and there are about 400 students enrolled in engineering or computer science. Overall, WVU Tech has a student-faculty ratio of about 17 to 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 with approximately 80% residents of West Virginia.

All degree programs in the College of Engineering are slanted towards the practice of engineering. Therefore, all undergraduates are encouraged to participate in the Co-op program, which is a voluntary program of alternating terms of study on campus and work away from campus in jobs in industry, government, and business. Students in the Co-op program are usually able to pay for a major portion of their educational expenses as well as gain invaluable on-the-job training and experience that potential employers recognize as very important.

Engineering Transfer Program and Evaluation of Transfer Credits

The Leonard C. Nelson College of Engineering encourages qualified students from preengineering 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.

WVU Tech has formal transfer agreements with Marshall University, West Virginia University, Bluefield State College, Potomac State College of West Virginia University, Shepherd College, West Virginia State University, and Mountain State University. Students attending one of these colleges who are interested in transferring to one of the engineering or computer science programs at WVU Tech should contact their engineering coordinator and the Dean of the Leonard C. Nelson College of Engineering for details of the transfer agreement.

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 strives to ensure the integrity of the courses transferred into the program. The College of Engineering 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 EAC 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," 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 CHEE 416 Process Design I and CHEE 417 Process Design II (which can be part of the 24 credit hours).

In the evaluation of courses to be transferred, the College of Engineering will follow several guidelines.

- 1. Transfer students must supply official transcripts. In some cases, the College of Engineering will ask for further documentation in order to transfer courses. A school catalog may be sufficient in some situations. In other cases the College of Engineering 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, home works, projects, and final exams.
- 2. The College of Engineering will not equate a WVU Tech course to one that has fewer credit hours unless there is firm documentation that this substitution is warranted. The College of Engineering will equate three quarter hours to two semester hours.
- 3. The College of Engineering 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.
- 4. The College of Engineering 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 Engineering.
- 5. 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.
- 6. In some cases, the transfer of a course is conditioned upon successfully completing another course(s). The College of Engineering will determine these conditions on a case-by-case basis.
- 7. 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.
- 8. The College of Engineering will only accept calculus-based physics for its engineering programs.
- 9. All other policies and rules of the Institution must also be followed. The transfer policies and procedures are published by the College of Engineering in the Transfer Evaluator's Handbook

Transfer students may appeal their evaluation of courses by supplying further documentation within their first semester of studies at WVU Tech.

Students who wish additional information about transferring into engineering or computer science can contact:

The Dean's Office College of Engineering West Virginia University Institute of Technology

Montgomery, West Virginia 25136 or telephone (304) 442-3161 Engineering Technology Programs

Baccalaureate Degrees

Graduates of associate of science degree programs in engineering technology from the CTC at WVU Tech may earn bachelor of science degrees at WVU Tech by completing one of this institution's plus-two baccalaureate programs. The plus-two baccalaureate programs are designed to meet the needs of associate degree engineering technology graduates for advanced education in a chosen area of emphasis. These programs prepare graduates for immediate employment in engineering-oriented occupations in industry and provide the education needed to achieve greater upward career mobility in technology related fields.

Graduates of associate-degree engineering technology related programs at other institutions are encouraged to enroll in these programs also. For transfer students, an evaluation of the students' transcript is made to determine if additional course work is needed to prepare for the technical courses found in the plus-two curriculum. Many of these students enter WVU Tech as juniors in the plus-two baccalaureate programs. All students must meet the Core Curriculum requirements for graduation. The following baccalaureate degree programs are offered at WVU Tech:

- **Electronic Engineering Technology, B.S.E.E.T.** Students enter the program upon completion of an A.S. degree Electrical/Electronic (Engineering) Technology program. Accredited by the Technology Accreditation Commission of ABET, Inc. (formerly known as the Accreditation Board for Engineering and Technology) (TAC/ABET).(See pages 221-222) Designated a Program of Excellence by WVU Board of Governors.
- **Engineering Technology-Civil, B.S.C.E.T.**–Students enter this program upon completion of an A.S. civil-related technology program. Accredited by the Technology Accreditation Commission of ABET, Inc.–(TAC/ABET) (See pages 225-226)
- Engineering Technology-Environmental, B.S.E.T.-E.
- The environmental emphasis may be pursued by students from a variety of backgrounds, including chemical, civil, environmental science/technology, and mechanical. (See pages 227-228)
- Engineering Technology-Mechanical, B.S.M.E.T.
- ---Students may enter this program upon completion of an A.S. mechanical-related technology program. Accredited by the Technology Accreditation Commission of ABET, Inc. (TAC/ABET) (See pages 229-230).
- **Engineering Technology, B.S.E.T.** Students may enter this program upon completion of one of a variety of technology-related programs. This program can be tailored to a student's specific career interests. (See pages 223-224)
- **Industrial Technology, B.S.I.T.** —The industrial technology is a broad-based application oriented program designed to prepare graduates to work in a variety of manufacturing, construction, business, and management type occupations. Students may enter this program upon completion of one of a variety of technology-related programs. (See pages 234-235)

Master of Science in Control Systems Engineering

This unique interdisciplinary Master of Science program is primarily oriented toward

professional engineering practice. Three options are available to fulfill the requirements of the program, a course work only option, a project option, and a thesis option.

ADMISSION

Each applicant is expected to have:

- An undergraduate GPA of at least 3.0 in an engineering discipline. Although other majors, such as, applied math, physics, etc. would be considered on a case by case basis by the Control Systems Engineering Graduate Committee.
- A TOEFL score of **550** is required for international students.
- GRE verbal and quantitative scores totaling **1100**. This requirement may be waived for applicants who have passed the Fundamentals of Engineering exam (FE), or the Professional Engineering Exam, or graduated from an ABET accredited program.

Entrance into the graduate program is determined by the Graduate Committee and is based on the evaluations of graduate applications by the members of the Committee.

Applications may be obtained from the Director of Admissions or from the Director of the Graduate Program. The application, three letters of reference, and transcripts and other results such as TOEFL and GRE scores must be received by the application deadline. The applicants will normally be accepted only for the fall semester and the application deadline is May 10. PROGRAM REOUIREMENTS

All students in the Control Systems Program are required to complete 33 credit hours in order to receive a degree. Students may select one of three options. The Coursework Option requires <u>33 credit hours</u> of course work, which includes <u>18 credit</u> hours of required courses and 15 credit hours of electives. The Project Option requires 30 credit hours of course work and the 3 credit hour course COSE 690 Project. The Thesis Option requires 27 credit hours of course work and 6 credit hours of thesis work (COSE 699 Thesis). Project Option and Thesis Option students should select an advisor and topic before the end of the second semester. PATTERN SHEET

The pattern sheet indicates the sequence of courses to be followed. Graduate students will not be allowed to use undergraduate courses for graduate credit unless the course is dual numbered (with designated undergraduate and graduate course numbers) and the graduate student has done significant amount of extra work to earn graduate credit. A student must have this approved prior to the second semester registration.

PROBATION AND SUSPENSION

Any student who gets a "C" grade and whose average drops below a 3.0 GPA will be placed on probation. Any student who drops below a 3.0 average in a semester while on probation will be suspended. A student cannot receive more than two""C" grades while maintaining a 3.0 G.P.A. tuition and fee waivers will not be granted when a student is on probation. A student admitted on probation must obtain a 3.0 GPA while completing 6 credit hours during the first semester or any other additional criteria imposed upon admission. A student not meeting the above criteria will be suspended from the graduate program. Any appeals of suspension must be addressed to the Graduate Committee.

COURSE REPEAT/GRADE CHANGE POLICY

A graduate student earning a C grade may be allowed to repeat the course prior to earning the masters degree. The original grade will not be deleted from the transcript but the new grade will be used for the computation of GPA. This grade change policy can be used only once by a graduate student during the entire duration of the program. The student must pay tuition and fees for any course that is repeated. A graduate student receiving a D grade or more than two C grades will be terminated from the program.

GRADUATION REQUIREMENTS

All students are required to complete an approved program of study with a grade point average of 3.0. Graduate seminar is required every semester.

Students expecting to graduate must apply for graduation following the same deadlines as the undergraduate students.

A formal application for graduation must be filed in the Office of Admissions and Records by the first Monday in November for the December graduation and the first Monday in February for the May graduation.

PROJECT AND THESIS OPTION

Students selecting the Thesis/Project option must submit (3) copies of the final Thesis/ Project to the advisors by the fourth week prior to final examinations and, at least two weeks before Thesis/Project defense date to the Examination Committee. The report/thesis must be submitted and accepted by the final week of the semester. A draft of the Thesis/Project should be submitted to the advisor by mid-term. The Thesis Project defense must be scheduled no later than two weeks prior to final exams. The Examination Committee shall consist of faculty members who are actively participating in the graduate program. The Committee will hear as presentation of the Thesis/Project. The Committee will decide on the grade for the Thesis/ Project as determined by the content and the performance in oral presentations. Students may be required to re-write all or part of the Thesis/Project as required prior to final acceptance. If a student fails the Thesis/Project presentation, the advisor will schedule a second exam. A second failure will result in suspension.

ASSISTANTSHIP AND TUITION WAIVERS

Normally graduate assistantships will not be granted beyond four (4) semesters. A student accepting a graduate assistantship must carry at least 9 approved credit hours and must maintain a grade point average of 3.0.

Control Systems Engineering Master of Science

Fall

Spring

COSE 601	Advanced Differential Equations*	3
COSE 603	Control Systems Design*	3
COSE 611	Modern Control Theory*	3
COSE 600	Graduate Seminar Elective	0

COSE 620	Digital Control*	3
COSE 622	Multivariable Control*	3
COSE 629	Nonlinear Control*	3
COSE	Elective	3
COSE 600	Graduate Seminar	0

Fall

COSE	Elective	3
COSE	Elective	3
COSE	Elective	3
COSE 600	Graduate Seminar	0
COSE 699	Master Thesis	3
COSE 690	Project	3

Pre-Approved Electives

COSE 625	Stochastic and Random Process	3	
COSE 628	Robotics	3	
COSE 630	Optimal Control Theory	3	
COSE 631	Adaptive Control Theory	3	
COSE 632	Intelligent Control	3	
COSE 635	DAC Theory and Linear Adaptive Co	ontrol	3
COSE 660	Individual Studies (limit 1 section)	3	
COSE 680	Special Topics	3	
COSE 690	Project (up to 3 credit hours)	3	
COSE 641	Research project	1	
COSE 699	Master Thesis (up to 6 credit hours)	3	

500 level courses may be offered as dual number for graduate and undergraduate courses (500/400 level). With approval of his/her advisor, graduate students may take a maximum of two (three credits each) of such courses as electives.

NOTE: Electives not on approved list must be approved by the Graduate Committee * Indicates required courses.

The primary goal of the program is to prepare our graduates for professional employment in the chemical, materials processing, and related industries. This would include positions in manufacturing, process design, environmental affairs, technical service, and technical sales. Our graduates will be prepared to progress into positions having substantial professional responsibilities. These responsibilities may include management and supervisory duties, significant contributions on projects having value to the employer, and entrepreneurial activity. Our graduates will also be prepared to continue with advanced study. This may include graduate work in engineering, business, and 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 demonstrate:

- 1. the ability to use the principles of chemistry, physics, and mathematics in the solution of engineering problems
- 2. the ability to use engineering science conservation relations, thermodynamics, transport phenomena, and kinetics in the solution of engineering problems
- 3. the ability to design materials processing equipment and manufacturing systems which meet economic, quality, safety, and environmental requirements
- 4. the ability to use their creativity and synthesis skills in the solution of open-ended problems
- 5. the ability to devise experiments to collect data, using principles of experimental design; the ability to evaluate data, using appropriate statistical tools; and the ability to draw sound conclusions from the data analysis
- 6. the ability to use computing tools-mathematical analysis, information retrieval, document preparation and communications
- 7. knowledge and application of good safety practices in both laboratory and design work
- 8. knowledge and practice of good environmental stewardship in both laboratory and design work
- 9. the ability to effectively communicate ideas, plans, and research in verbal and written form
- 10. the ability to gain new knowledge and/or enhance their skills through independent learning
- 11. the ability to work effectively as an individual and as a member of a team
- 12. knowledge of ethical and professional codes of conduct, including an appreciation for the impact that politics, culture, and current events have on the practice of engineering

13. knowledge of selected areas of the humanities and social sciences

These outcomes are achieved through rigorous courses in mathematics, chemistry, physics, chemical engineering, and the humanities and social sciences. Electives in other engineering, scientific and business disciplines are required, enabling graduates from this program to work effectively with professionals having a different area of expertise. Elective sequences have been designed for students interested in life sciences, environmental protection, and management.

Chemical Engineering B.S.Ch.E.

	First Semester			Second Semester	
ENGL	101 English Composition I	3	ENGL 102	English Composition II	3
CHEM	115 Fundamentals of Chemistry I	4	HU/SS	Elective*	3
HU/SS	Elective*	3	GENE 111	Software Tools for Engineers	3
CHEE	100 Intro. Chem. Eng.	2	CHEM 116	Fundamentals of Chemistry II	4
MATH	155 Calculus I	4	MATH 156	Calculus II	4
TECH	100 Freshman Seminar	1			
		17			17
	Third Semester			Fourth Semester	
CHEE	201 Material/Energy Balances I	3	CHEE 202	Material/Energy Balances II	3
CHEM	233 Organic Chemistry I	3	CHEE 230	Modeling & Analysis	3
CHEM	235 Organic Chemistry Lab I	1	CHEM 234	Organic Chemistry II	3
MATH	251 Multivariable Calculus	4	MATH 261	Elem. Differential Equations	4
PHYS	213 Phys./Sci. & Engr. I	4	PHYS 214	Phys./Sci. & Engr. II	4
HU/SS	Elective*	3			
		18			17
	Fifth Semester			Sixth Semester	
CHEE	310 Process Fluid Mechanics	3	CHEE 312	Mass. Trans Equip Des.	4
CHEE	311 Heat Transfer Operations	3	CHEE 350	Chemical Engr. Lab	1
CHEE	320 Chemical Engr. Thermo	3	CHEE 325	Kinetics & Reactor Design	3
ENGL	305 Scientific/Tech Writing	3	CHEM	Adv. Chemistry Elective	3
	Technical Elective**	3		Technical Elective**	3
			HU/SS	Elective*	3
		15			17
	Seventh Semester			Eighth Semester	
CHEE	457 Process Design I	4	CHEE 458	Process Design II	3
CHEE	450 Unit Operations Lab	2	CHEE 451	Process Engr. Lab	2
CHEE	435 Processes Dynamics & Cont.	3		Technical Elective**	3
	Technical Elective**	3	HU/SS	Elective*	3
HU/SS	Elective*	3	CHEM	Adv. Chemistry Elective	4
CHEE	Elective**	3	GENE 401	Sr. Engr. Seminar	1
		18			16

 * Check departmental restrictions on HU/SS Electives.
 ** CHEE and Technical electives must be taken from a departmental list of approved options. Both are published in the departmental student handbook.

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CIVIL ENGINEERING

Civil Engineering, the most diverse branch of engineering, is directly related to facilities and systems used by the public in their daily life. Civil engineers are engaged in the planning, design, construction, and maintenance of bridges, buildings, foundations, dams, sanitary and solid waste disposal systems and related environmental considerations, highways, airport facilities, transportation systems, waterways, hydroelectric installations, pipelines, coal preparation and loading facilities, and other systems and structures.

Engineering students get a sound basic knowledge of science and a set of core courses in humanities and social sciences. The Civil Engineering curriculum at WVU Tech 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, and the design experience begins early with some exposure in the Surveying and Strength of Materials courses. Design exposure continues in the junior and senior years with 11 courses having a design component for a total of 20 hours of design. The design component is completed with a capstone design course 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.

Meaningful design experience is also included in several of the required and elective Civil Engineering courses. Required courses and required elective courses which include significant design content are Hydraulic Engineering, Sanitary Engineering, Highway Design, the required structural design elective (Structural Steel Design or Reinforced Concrete Design), the required geotechnical elective (Foundation Design or Groundwater and Seepage), the required environmental elective (Advanced Sanitary or Advanced Hydraulics), and Civil Engineering Projects. One of the three additional electives (one CVLE and two Technical) also must contain significant design.

The Civil Engineering Projects class, originally designed to serve the "capstone design" concept, requires the students to completely design a Civil Engineering project encompassing several of the Civil Engineering disciplines. Discussion and consideration of constraints such as economic factors, safety, reliability, aesthetics, ethics, and social impact are incorporated as a normal part of most design courses. Aesthetics and social impact are stressed in the Sanitary Engineering course; and ethics, safety, social impact, and professional issues are covered in the Civil Engineering Seminar course. In addition to design, the Projects course includes principles of project and/or construction management, cost analysis and estimating, and scheduling.

Civil Engineering Program Goals include the following:

- 1. 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.
- 2. 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.
- 4. 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.

Civil Engineering Program Educational Objectives include the following:

- 1. Most of our graduates are expected to find employment in the civil engineering field and to hold positions with significant professional responsibilities.
- 2. Our graduates will seek professional registration.
- 3. For our graduates who decide to pursue advanced studies, they will be successful.
- 4. Our graduates will be able to learn new skills as they progress in their careers to the point of being able to move to new positions when it becomes necessary.

CIVIL ENGINEERING

B.S.C.E.

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 102	English Composition II	3
TECH	100	Freshman Seminar	1	GENE 121	Statics	3
CHEM	115	Fundamentals of Chemistry I	4	GPHS 120	Graphics	2
GENE	111	Software Tools for Engineers	3	CHEM 116	Fundamentals of Chemistry II	4
MATH	155	Calculus I	4	MATH 156	Calculus II	4
HU/SS		Elective	3			
			18			16
	,	Third Semester			Fourth Semester	
GENE	242	Dynamics	3	GENE 331	Fluid Mechanics	3
GENE	243	Mechanics of Materials	3	CVLE 212	Structural Analysis	4
CVLE	241	Surveying	3	MATH 261	Elementary Differential Equations	4
MATH	251	Multivariable Calculus	4	MATH 448	Probability and Statistics	3
PHYS	213	Phys. for Scien. & Engr. I	4	PHSC 312	Geology	3
			17			17
		Fifth Semester			Sixth Semester	
CVLE	322	Soil Mechanics	4	CVLE 321	Engineering Materials	3
CVLE	431	Hydraulic Engr.	4	PHYS 214	Physics for Scien. & Engr. II	4
CVLE		Elective	3	CVLE	Elective	3
ENGL	305	Scientific/Technical Writing	3	CVLE 342	Transportation Engineering	3
HU/SS		Elective	3	CVLE 432	Sanitary Engineering	4
			17			17
	S	eventh Semester			Eighth Semester	
CVLE		Elective	3	CVLE	Elective	3
		Thermo I or Circuits I	3	CVLE	Elective	3
		*Technical Elective	3	GENE 401	Senior Engineering Seminar	1
ECON	401	Managerial Economics	3	CVLE 453	C.E. Projects	3
HU/SS		Elective	3		*Technical Elective	3
HU/SS		Elective	3	HU/SS	Elective	3
			18			16

* Technical Electives must be approved by C.E. Department
NOTE: 1. Four electives: one from structures, environmental, transportation and geotechnical are required.
2. One CVLE Elective and Two Technical Electives (approved by Department) are also to be taken. These three courses must contain a total of at least 2 hours of ABET design content.

3. GENE 401 Senior Engineering Seminar satisfies the citizenship requirement in the core curriculum

CVLE Electives

CVLE-413 Reinforced Concrete Design	CVLE-433 Advanced Hydraulic Engineering
CVLE-414 Structural Steel Design	CVLE-434 Advanced Sanitary Engineering
CVLE-415 Advanced Structural Analysis	CVLE-435 Solid Waste Management
CVLE-417 Timber Design	CVLE-443 Highway Design
CVLE-421 Groundwater and Seepage	CVLE-444 Pavement Design
CVLE-425 Foundation Design	CVLE-491 Civil Engineering Research

COMPUTER SCIENCE

Computer Scientists are distinguished from other computer professionals such as programmers, information technology specialists, and system administrators by the higher level of theoretical expertise and innovation they apply to complex problems. A computer scientist can often expect to work on multidisciplinary projects such as robotics, humancomputer interaction, advanced computer graphics, and artificial intelligence based systems.

The Bachelor of Science in Computer Science (BSCS) program at WVU-Tech is a 128 credit hour program of study with 56 hours of Computer Science theory and languages, 27 hours of calculus-based mathematics, 15 hours of upper division technical electives, and 12 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 computer graphics, artificial intelligence and special topics such as image processing, modeling and simulation. Many students are actively involved in undergraduate projects with the computer science faculty.

Computer Science Goals:

- 1. To prepare students in the areas of mathematics, science, concepts of programming languages, and management of data and information.
- To provide students a well rounded education for the application of computer science principles in a professional environment and to be successful in graduate studies.
- 3. To prepare students for life long learning and to help students deal with the ever increasing complexity of societal issues created by the rapid utilization of computers.

The Computer Science Program Educational Objectives include :

- 1. Graduates will be able to learn new skills and techniques as they progress in their careers.
- 2. Students wishing to seek advanced studies in Computer Science will be properly prepared.
- 3. Graduates that so desire will be able to successfully seek and obtain professional employment as Computer Scientists.

Students wishing to minor in Computer Science are required to complete 25 credit hours minimum including: CSCI —121, 122, 221, 231, 222, 263, and 6 hours to be freely chosen from any 300 or 400 level Computer Science course.

Computer Science Curriculum

ENGL HU CSCI CSCI TECH HU/SS	First Semester 101 English Composition I Humanities Elective 115 Discrete Structures 121 Computer Science I 100 Engineering Orientation Elective	$\begin{array}{c}3\\3\\4\\1\\3\\-17\end{array}$	Second SemesterENGL 102English Composition IIHUHumanities ElectiveMATH 155Calculus ICSCI 122Computer Science IIHU/SSElective	$ \begin{array}{r} 3 \\ 3 \\ 4 \\ 3 \\ 3 \\ 16 \end{array} $
CSCI MATH CSCI CSCI *	Third Semester 251 Operations Workshop I 156 Calculus II 221 Data Structures 231 Intro Computer Org Laboratory Science	1 4 3 4 15	Fourth SemesterCSCI252Operations Workshop IIMATH251Multivariable Calculus ICSCI222Software EngineeringCSCI210Algorithms*Laboratory ScienceCSCI365Computer Languages "C"	$ \begin{array}{c} 1\\ 4\\ 3\\ 4\\ 1\\ \hline 16 \end{array} $
* CSCI MATH CSCI SS	Fifth SemesterLaboratory Science263Principles of Networking448Probability & Statistics323Program Lang Concepts Economics Elective	4 3 3 3 	Sixth SemesterENGL 305Scientific/Tech WritingCSCI 322Systems Anal. & DesignCSCI 324Computer Science ElectiveCSCI 324Data Base ManagementSSEconomics ElectiveMath441Linear Algebra	$ \begin{array}{r} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 18 \end{array} $
CSCI CSCI CSCI CSCI/M **	Seventh Semester 431 Compiler Design Comp Science Elective 461 Senior Project IATH Adv/Applied Elective *** Technical Elective	3 3 3 3 $-$ 15	Eighth SemesterCSCI432Operating SystemsCSCIComp Science Elective**Technical ElectiveCSCI480Adv. CS Math**Technical Elective	3 3 3 3 3 $\overline{15}$

* Laboratory Science (must include an 8hr sequence chosen from CHEM 115, 116 or PHYS 201, 202 or BIOL 111, 112 plus 4 additional hrs from CHEM 115, 116 or PHYS 201, 202 or BIOL 111, 112

** From list of approved Computer Science Technical Electives

*** Must be selected from Statistical Computing, Cryptology, Image Processing, Numerical Analysis, Computer Graphics, AI:Neutral Network, or Differential Equations.

ELECTRICAL ENGINEERING

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. The Electrical Engineering curriculum provides a well-rounded education to meet modern needs and challenges. Students receive a solid background in mathematics, physics, and engineering science as well as a strong foundation in the major areas of electrical engineering: circuits and systems, computers, electronics, electromagnetic fields, controls, electric machinery and power supported by practical-oriented laboratory assignments. The student can pursue special areas of interest through elective courses.

One of the key features of electrical 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 all factors (technical, economic, social, environmental, and ethical) are considered as well as enhancing the written and oral communications skills through reports and presentations.

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

COMPUTER ENGINEERING

Computer engineering is one of the most important and fastest growing engineering disciplines today. It is a major component of today's information Revolution. The student will receive a solid background in mathematics and physical science as well as computer science and electrical engineering supported by practical-oriented laboratory assignments. A strong emphasis is placed on hardware design, programming skills and its integration into real-time application design.

One of the key features of computer 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 leads up to both hardware and software design-oriented thinking at a fundamental level and culminates in the capstone senior design course sequence in which all factors (technical, economic, social, environmental, and ethical) are considered as well as enhancing the written and oral communication skills through reports and presentations.

The ability to communicate in writing and speech is very important as the modern computer 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 Computer Engineering curriculum.

Electrical Engineering

B.S.E.E.

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 102	English Composition II	3
MATH	155	Calculus I	4	MATH 156	Calculus II	4
TECH	100	Freshman Seminar	1	CHEM 115	Chemistry I	4
CSCI	111	Computer Science for Engr.	3	GENE 121	Statics	3
HU/SS		Elective	3	HU/SS	Elective	3
HU/SS		Elective		3		
			17			17
	,				E	
мати	251	Multivariable Coloulus	4	МАТЦ 261	Fourth Semester	4
MAIH	201	Physics for Sci. & Engineers I	4	MAIH 201 DHVS 214	Differential Equations Physics for Sci. & Engineers II	4
FLCE	215	FCF Software Tools	2	FLCE 223	Circuits II	4
FLCE	220	Circuits I	3	ELCE 223	Digital Logic Design	4
ELCE	222	Circuits I Lab	1	DECE 2/1	Digital Logic Design	
GENE	242	Dynamics	3			
		y				
			17			16
		Fifth Semester			Sixth Semester	
ELCE	306	Analog Electronics	4	ELCE 332	Communications	3
ELCE	326	Linear Systems	3	ELCE 320	Electromagnetic Fields I	3
ELCE	420	Microprocessors	4	ENGL 305	Scientific/Tech Writing	3
MATH	448	Probability & Statistics	3	ELCE 401	Electromagnetic Devices	4
HU/SS		Elective	3	MATH 441	Applied Linear Algebra	3
			17			16
			17			10
	S	eventh Semester			Eighth Semester	
ELCE	490	Senior Design I	3	ELCE 491	Senior Design II	3
ECON	401	Managerial Economics	3	ELCE	ECE Elective	3
ELCE	403	Power Systems	3	HU/SS	Elective (300-400 Level)	3
ELCE	424	Automatic Controls	3		Technical Elective (1)	3
ELCE	425	Controls Lab	1		Engr. Science Elective (2)	3
ELCE		ECE Elective	3	ELCE 400	0 Community Service	0
			16			15

(1) Technical Electives must be approved by the ECE Department.

 (2) The Engineering Science Elective may be selected from GENE-243 (Mechanics of Materials) MECE 332 (Thermodynamics I) or GENE 331 (Fluid Mechanics).

BSEE Program Total: 131 credit hours

COMPUTER ENGINEERING

Educational Objectives

- To prepare students to enter professional practice in computer engineering and to prepare outstanding students for graduate study in computer engineering or other professional disciplines.
- To produce computer engineers knowledgeable of the core concepts of computer science, applied mathematics and engineering science.
- To produce computer engineers skilled in teamwork and the design of both the hardware and software of computer systems.
- To produce ethical engineers with a professional understanding of computer engineering and its impact on the environment, the economy and social responsibility in the local community, the West Virginia region and the global village.

Computer Engineering B.S.Cp.E.

ENGL MATH TECH CHEM CSCI	First Semester101English Composition I155Calculus I100Freshman Seminar115Chemistry I121Computer Science I	$ \begin{array}{r} 3 \\ 4 \\ 4 \\ 4 \\ $	ENGL 102 MATH 156 CSCI 122 HU/SS HU/SS	Second Semester English Composition II Calculus II Computer Science II Elective Elective	$ \begin{array}{r} 3 \\ 4 \\ 3 \\ 3 \\ - \\ 16 \end{array} $
MATH PHYS ELCE ELCE ELCE CSCI	Third Semester 251 Multivariable Calculus 213 Physics for Sci. & Engineers I 200 Software Tools 220 Circuits I 222 Circuits I Lab 221 Data Structures	$ \begin{array}{c} 4\\ 4\\ 2\\ 3\\ 1\\ 3\\ \hline 17 \end{array} $	MATH 261 PHYS 214 ELCE 223 ELCE 271	Fourth Semester Differential Equations Physics for Sci. & Engineers II Circuits II Digital Logic Design	4 4 4 4
ELCE ELCE ELCE MATH HU/SS	Fifth Semester 306 Analog Electronics 326 Linear Systems 420 Microprocessors 448 Probability & Statistics Elective (300-400 Level)	$\begin{array}{c} 4\\ 3\\ 4\\ 3\\ 3\\ \hline 17 \end{array}$	ENGL 305 ELCE 320 ELCE 421 CSCI 222 CSCI 350	Sixth Semester Scientific/Tech Writing Electromagnetic Fields I Embedded Systems Software Engineering Discrete Math	3 3 4 3 $-$ 16
ELCE ECON ELCE CSCI ELCE	 Seventh Semester 490 Senior Design I 401 Managerial Economics 442 Computer Architecture 321 Principles of Networking ECE Elective 	$3 \\ 3 \\ 3 \\ 3 \\ 1$	ELCE 491 CSCI 322 ELCE HU/SS HU/SS ELCE 400	Eighth Semester Senior Design II Systems Analysis & Design ECE Elective Elective Technical Elective (1) Elective Community Service	$\begin{array}{c}3\\3\\3\\3\\3\\3\end{array}$

(1) Technical Electives must be approved by the ECE Department. BSCpE Program Total: 132 credit hours

MECHANICAL ENGINEERING

Mechanical Engineering is one of the largest technical professions with a history of significant and continuous contributions to industrial development since the dawn of human civilization. The History of Technology is replete with stories of successful applications of Mechanical Engineering ideas and concepts which have lead to overall prosperity of nations and eventual rise in the overall living standard of their citizens. Mechanical engineers also play a vital role in maintaining the technology leadership to insure the survival and growth of an industrialized society.

In order to prepare our 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 Bachelor of Science curriculum. The curriculum is structured to develop the skills necessary to succeed in a field that is both challenging and rewarding. The program includes sequential courses in several areas, such as English, Mathematics, Chemistry, Physics, Humanities, Computer Science and General Engineering Science as well as the foundation courses in Mechanical Engineering such as Thermodynamics, Machine Design, Heat Transfer, Mechanical Vibrations, Control Systems and Materials Engineering. These are considered essential for a sound Mechanical Engineering program by the Accreditation Board for Engineering and Technology (ABET), the national organization that accredits engineering programs in the United States. WVU Technical Electives are offered (including some in the two stems: energy and motion & structure) enabling students to pursue special areas of interest.

Engineers, in general, are builders and therefore need to develop strong analytical and design skills. The Mechanical Engineering curriculum at WVU Tech is structured so that meaningful design experience is included in several of the required and elective courses. The student develops these skills systematically by successfully completing a series of required sequential courses such as Statics, Dynamics, Strength of Materials, Kinematics and Dynamics of Machinery. Design of Machine Elements and ME Systems Design I and II. Open-ended and multiple-solution design concept is incorporated across the curriculum starting with Strength of Materials in their sophomore year and culminating with a pair of capstone design courses (ME Systems Design I and II) during their senior year. The capstone design courses provide the students with an opportunity to apply the previously acquired knowledge in science, Technology, humanities, communications, ethics, economics etc.

The Mechanical Engineering faculty also recognize the dynamic nature of modern Technology. Changes are inevitable and our students should be well-prepared to meet these challenges. the Mechanical Engineering curriculum is therefore under constant review and appropriate changes in the curriculum are introduced in response to the changing needs of industry.

Mechanical Engineering Educational Objectives

The mission of the mechanical engineering department at WVU Institute of Technology is to produce high quality mechanical engineers who have developed, through an appropriate academic program of study and laboratory experience, a strong background in mechanical engineering that would enable them to be competent members of the profession and who are capable of handling the most challenging jobs in the field. The primary means of achieving this goal is to maintain high academic quality that would ensure continued accreditation by the Engineering Accreditation Commission of the Accreditation Board for Engineering and

Technology (EAC/ABET).

Consistent with this goal, the following Educational Objectives have been adopted by the faculty of the Mechanical Engineering Department:

- 1. To provide an atmosphere of dedicated teaching and supportive services to the student by providing counseling, academic planning, career guidance and personal attention to facilitate growth and success in the academic and professional communities.
- 2. To provide quality learning tools and environment well grounded in fundamentals of mechanical engineering that would produce technically and professionally competent mechanical engineering graduates who are able to meet the needs of employers from government, industry and business.
- 3. To prepare students who are technically capable and motivated to succeed by teaching them skills needed to enter the mechanical engineering profession or to continue their education toward an advanced degree or seek professional registration.
- 4. To produce graduates who are: (i) competent to practice mechanical engineering, (ii) able to use a variety of modern computational tools, (iii) willing to work as team members of diverse groups, (iv) knowledgeable about professional standards of ethics and safety, (v) life-long learners, (vi) good in communication skills and (vii) current in their understanding of the mechanical engineering profession and its impact on environmental, economical, societal and global issues.

Program outcomes and assessment

Consistent with the mission of WVU Tech and in compliance with the EAC/ABET criteria, the Mechanical Engineering Program at WVU Tech emphasizes the development of a well-rounded engineer with a strong background in mathematics, sciences, engineering analysis and design. Graduates of this program will be able to practice engineering as professionals or pursue graduate education and advanced studies. 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 a mechanical system, component, or process 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

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- 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/or mechanical systems areas including the design and realization of such systems.

The Mechanical Engineering Program has an assessment process in place which includes: students' class work and portfolios (including design projects); student evaluations; results of FE (Fundamentals of Engineering) Examination; exit surveys of graduating seniors; alumni surveys; employer surveys; and placement data of graduates. The results are used in further development and improvement of the program.

Mechanical Engineering B.S.M.E.

TECH ENGL HU/SS CHEM MATH	First Semester 100 Freshman Seminar 101 English Composition I Elective 115 Fund. of Chemistry I 155 Calculus I	$ \begin{array}{c} 1\\ 3\\ 4\\ 4\\ \hline 15 \end{array} $	ENGL 102 GENE 111 GPHS 120 GENE 121 MATH 156	Second Semester English Composition II Software Tools for Engineers Graphics I Statics Calculus II	$\begin{array}{r}3\\3\\2\\3\\4\\\hline15\end{array}$
GENE GENE MECE MATH PHYS	Third Semester242Dynamics243Mechanics of Materials240Manufacturing Processes251Multivariable Calculus213Physics for Sci. & Engr. I	$ \begin{array}{r} 3\\3\\3\\4\\4\\\hline 17\end{array} $	PHYS 214 GENE 331 MECE 201 MECE 332 MATH 261	Fourth Semester Physics for Sci. & Engr. II Fluid Mechanics Applied Engineering Analysis Thermodynamics I Elem. Differential Equations	$\begin{array}{c} 4\\3\\3\\3\\4\\\hline\\17\end{array}$
MECE MECE ENGL ELCE 2 ELCE MECE	Fifth Semester304Dynamics of Machines333Mechanical Measurements334Thermodynamics II305Scientific/Technical Writing20Circuits I222Circuits I Lab404Design of Machine Elements	3 1 3 3 $-$ 17	MECE 335 MECE 336 MECE 340 ELCE 318/I HU/SS Elect 1 HU/S	Sixth Semester Experimental Methods Heat and Mass Transfer Vibrations ELCE 225:Circuits II ive SS Elective	$ \begin{array}{c} 1\\ 4\\ 3\\ 3\\ 3\\ 3\\ -17 \end{array} $
ECON MECE MECE HU/SS HU/SS	Seventh Semester 401 Managerial Economics 490 M.E. Systems Design I Technical Elective* 455 CADD Elective Elective	$ \begin{array}{r} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 18 \end{array} $	GENE 401 MECE 405 MECE 410 MECE 440 MECE 491 MECE 456	Eighth Semester Senior Engineering Seminar Senior Mech. Engr. Lab. Materials Science Auto Controls M. E. Sys. Des. II Technical Elective* Finite Element Method	$ \begin{array}{c} 1\\ 1\\ 4\\ 3\\ 3\\ 3\\ -1\\ 18\end{array} $

* All Departmental Technical Electives must be approved by the ME Department Advisors.

AEROSPACE ENGINEERING A 2+2 Program offered with West Virginia University

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 each at Montgomery and 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 spacecrafts. 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 pursue simultaneously B.S. degrees in both Aerospace Engineering and Mechanical Engineering by completing additional courses. Information on this 158 credit hour option can be obtained from the MAE department.

The student should refer to the university catalog and relevant WVU publications for additional information on the graduation requirements.

Aerospace Engineering B.S.A.E. 2+2 with West Virginia University

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First Semester (Montgomery)

ENGL	101	English Composition I
TECH	100	Freshman Seminar
MATH	155	Calculus I
CHEM	115	Chemistry
		Non-technical elective

Third Semester (Montgomery)

GENE	242	Dynamics
GENE	243	Mechanics of Materials
MATH	251	Multivariable Calculus
PHYS	213	Physics for Sci. & Engineers I
		Non-technical Elective

- Fifth Semester (Morgantown)
- MAE215Intro. to Aerospace Eng.MAE335Incompressible Aerodynamics.MAE343Intermediate Mech. of Mats.EE306Basic Electrical Engr.EE307Basic Electrical Lab
- Cluster A or B Elective

Seventh Semester (Morgantown)

MAE	426	Flight Vehicle Propulsion
MAE	434	Experimental Aerodynamics
MAE	456	CAD/Finite Element Analysis
MAE	475	Flight Vehicle Design
		Technical Elective*
		Cluster A or B Elective

Second Semester (Montgomery)

ENGL 102English Composition II3GENE 111Software Tools for Engineers3GENE 121Statics3GPHS 120Graphics I2MATH 156Calculus II4

15

Fourth Semester	(Montgomery)
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GENE 331	Fluid Mechanics	3
MECE 332	Thermodynamics I	3
MATH 261	Elem. Differential Equations	4
PHYS 214	Physics for Sci & Engr. II	4
	Non-technical Elective	3

17

Sixth Semester (Morgantown)

MAE	316	Analysis of Eng. Systems	3
MAE	336	Compressible Aerodynamics	3
MAE	345	Aerospace Structures	3
MAE	365	Flight Dynamics	3
MAE	244	Dynamics and Strength Lab	1
		Cluster A or B Elective	3

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Eighth Semester (Morgantown)

MAE	423	Heat Transfer	3
MAE	460	Automatic Controls	3
MAE	476	Space Flight and Systems	3
		Technical Elective*	3
		Cluster A or B Elective	6
			18

NOTE: *The six hours of technical electives must be selected from a list of approved aerospace engineering technical electives after consulting with the advisor; the courses selected should form a clear and consistent pattern according to the career objectives of the student. The 12 hours of Cluster A and 12 hours of Cluster B courses must be selected to meet the University and college LSP requirements.

Community and Technical College at WVU Tech

COMMUNITY AND TECHNICAL COLLEGE at WVU TECH

GENERAL INFORMATION

Mission Statement

The Community and Technical College at WVU Tech (CTC at WVU Tech)

- Promotes excellence in teaching, learning, and service;
- Prepares the current and future workforce; and
- Provides lifelong educational opportunities.

Vision Statement

The Community and Technical College at WVU Tech will be a regional leader in education, workforce development, and lifelong learning. We will be an accessible, inclusive learning environment that provides leading-edge technology and dynamic service to a diverse student body on campus, in our communities, and at a distance.

I. Engineering Technology Programs

Associate Degrees

Students seeking careers requiring the application of engineering principles, scientific knowledge, and skills in industry and business will find a wide array of quality engineering technology programs offered at the CTC at WVU Tech. Graduates of these programs seek careers in business, industry, and government as technicians or engineer associates. Graduates will be able to carry out laboratory and field experiments, perform mechanical calculations, execute intricate design drawings, and assist engineers and managers with a myriad of technical tasks. The following two-year associate of science degree engineering technology programs are offered:

- **Civil Engineering Technology, A.S.** Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (TAC/ ABET).
- **Computerized Drafting and Design Engineering Technology, A.S.** Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (TAC/ABET).
- **Computer Engineering Technology, A.S.** Emphasis of the Electrical Engineering Technology program.
- **Electrical Engineering Technology, A.S.** Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (TAC/ ABET). Designated a Program of Excellence by WVU Board of Governors.
- **Mechanical Engineering Technology, A.S.** Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (TAC/ ABET).

Baccalaureate Degrees

Graduates of the associate of science degree programs in engineering technology from the

CTC at WVU Tech may earn bachelor of science degrees at WVU Tech by completing plustwo baccalaureate degree programs. The plus-two baccalaureate degree programs are designed to meet the needs of associate degree engineering technology graduates for advanced education in a chosen area of emphasis. These programs prepare graduates for immediate employment in engineering-oriented occupations in industry and provide the education needed to achieve greater upward career mobility in technology-related fields.

Graduates of associate degree, engineering technology-related programs at other institutions are encouraged to enroll in these programs also. For transfer students, an evaluation of the student's transcript is made to determine if additional course work is needed to prepare for the technical courses found in the plus-two curriculum. Many of these students enter WVU Tech as juniors in the plus-two baccalaureate programs. All students must meet the Core Curriculum requirements for graduation. The following baccalaureate degree programs are offered at WVU Tech:

- **Electronic Engineering Technology, B.S.E.E.T.** Students enter the program upon completion of an A.S. degree Electrical/Electronic Engineering Technology program. Accredited by the Technology Accreditation Commission of ABET, Inc. (TAC/ABET). Designated a Program of Excellence by the WVU Board of Governors.
- **Engineering Technology-Civil, B.S.C.E.T.** Students enter this program upon completion of an A.S. civil-related technology program. Accredited by the Technology Accreditation Commission of ABET, Inc. (TAC/ABET).
- **Engineering Technology-Environmental, B.S.E.T.-E.** The environmental emphasis may be pursued by students from a variety of backgrounds, including chemical, civil, environmental science/technology, and mechanical.
- **Engineering Technology-Mechanical, B.S.M.E.T.**—Students may enter this program upon completion of an A.S. mechanical-related technology program. Accredited by the Technology Accreditation Commission of ABET, Inc. (TAC/ABET).
- **Engineering Technology, B.S.E.T.** —Students may enter this program upon completion of one of a variety of technology-related programs. This program can be tailored to a student's specific career interests.
- **Industrial Technology, B.S.I.T.** —The industrial technology is a broad-based, applicationoriented program designed to prepare graduates to work in a variety of manufacturing, construction, business, and management type occupations. Students may enter this program upon completion of one of a variety of technology-related programs.

II. Health Programs

Students seeking careers in an associate degree health field at the technical level may be interested in Dental Hygiene, Office Technology Management (Medical Assistant Emphasis, Medical Office Emphasis, Medical Facility Management Emphasi), or Respiratory Therapy.

Programs offered include:

- **Dental Hygiene A.S.** The dental hygiene program, accredited by the American Dental Association Commission on Dental Accreditation, produces graduates eligible for licensing examinations in each of the 50 states. Dental hygiene is a licensed health care profession which provides preventive oral health services to the public. The dental hygienist works under the supervision of the dentist to prevent oral disease through patient education, nutritional counseling, oral prophylaxis and other preventive and educational functions.
- Office Technology Management, A.S. Medical Assistant Emphasis, Medical Office Emphasis, Medical Facility Management Emphasis. – Graduates with an Associate of

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Science in Office Technology Management's various medical emphases are employed by hospitals, medical and dental offices, and other health-related businesses. Medical office workers will transcribe medical records, perform medical coding procedures, utilize medical software, including billing programs. Medical Assistants will be able to perform both administrative and clinical procedures. Medical Facility Management graduates will be able to supervise the administration of a medical facility. **One-year Claims Processing-MedicalTranscription and Help Desk Certificates are available**.

Respiratory Therapy A.S. – The associate of science degree program in Respiratory Therapy is jointly delivered with Carver Career and Technical Education Center in Malden, West Virginia. Objectives of the program are to prepare entry-level respiratory care practitioners to provide (1) a pathway by which students can earn an associate degree and eligibility to take the Certified Respiratory Therapist (CRT) and Registered Respiratory Therapist (RRT) examinations; and (2) a source of registered respiratory therapists to staff area hospitals, clinics, and other health care facilities.

III. Printing Technology and Business Programs

Associate Degree and Certificates Students seeking careers in the printing ind

Students seeking careers in the printing industry or in business-related areas have several options in two-year and certificate programs. Graduates are qualified to seek employment in technical and mid-management positions in their respective fields. They may also elect to continue their studies in one of the business-related baccalaureate programs available at WVU Tech in the College of Business, Humanities, and Sciences.

- **Printing Technology, A.S.** The CTC at WVU Tech's two-year Printing Technology program has been recognized as one of the ten outstanding vocational/technical programs in the country by the U.S. Secretary of Education, as a Program of Excellence by the WVU Board of Governors and as a Peak of Excellence Program. It is designed to give the student a comprehensive background in the modern, high tech printing industry. Graduates of this program may expect to enter the printing industry in a junior supervisory position or may choose to pursue the plus-two printing management baccalaureate degree which is available at WVU Tech. **One-year certificates are available in Pre-Press Technology and Digital Imaging.**
- **Business Technology, A.S.** Accounting, Business Supervision, Computer Information Systems and Restaurant Management Emphases. The Business Technology program prepares graduates for technical careers in five emphasis areas. Each program area is comprised of core curriculum, technical computer courses and special emphasis courses. A one-year certificate in Entrepreneurship is also available.
- Office Technology Management, A.S. Computer Specialist, and Executive Emphasis The Office Technology Management program, designated as a Program of Excellence by the West Virginia University Board of Governors, prepares administrative assistants for the office of today. Relevant curriculum and modern laboratories combine to produce graduates who (1) utilize office software, (2) practice effective office procedures, (3) produce office documents accurately and efficiently, and (4) are knowledgeable in emphasis specialty concepts and practices.

IV. Information Technology

Two associate degree options in information technology are available: Computer and Information Technology (A.S.) and Technical Studies: Information Technology (A.A.S.).

Computer & Information Technology, A.S. The Computer and Information Technology program emphasizes computer repair and networking. web page design, etc. The program prepares students to sit for A+, CompTIA Net+, CCNA, and in some cases CCNP and MCP certification.

Technical Studies: Information Technology A.A.S. The Technical Studies: Information Technology A.A.S. degree is a statewide IT program offered among collaborating community colleges in West Virginia. Courses in this program are web-based, and the student is provided a variety of IT certification options. An A.S. degree in Computer Science is available in collaboration with Tech.

V. Extended Degree Programs

The CTC at WVU Tech, in collaboration with other educational or government agencies, offers the following degree programs in off-campus sites (see also Respiratory Therapy):

- **Applied Technology, A.A.S.** –The Applied Technology program is a cooperative program between the CTC at WVU Tech and the vocational-technical/career centers. The program emphases are designed to prepare graduates with an entrepreneurial orientation for a variety of industry specific careers.
- Applied Process Technology, A.A.S. The Applied Process Technology program is designed to prepare graduates for positions as chemical process operators. The program has been developed in response to industry demand in conjunction with members of the Chemical Alliance Zone and four community and technical colleges at WVU Tech, West Virginia State College, Marshall, and Ashland (KY). General education courses will be taught by the home institution; technical courses will be taught at the Regulatory Training Center in South Charleston and at Ashland Technical College. The student is responsible for transportation. A cohort of 25 students will be accepted into the program per year.
- **Occupational Development: Corrections, A.A.S.** The corrections program is designed to assist those employed as corrections officers in West Virginia to gain the knowledge, skills and credentials needed to enhance their careers. This program is offered cooperatively with the West Virginia Department of Corrections and the U.S. Bureau of Apprenticeship and Training.
- **Occupational Development: Culinary Apprentice, A.A.S.** The Culinary Apprentice program is offered in cooperation with Carver Career and Technical Education Center and the U.S. Bureau of Apprenticeship and Training. The goal of this program is to prepare future culinarians entering the workplace with comprehensive training in the practical and theoretical aspects of the culinary profession.
- **Occupational Development: Child Development Specialist, A.A.S.** This program is offered in conjunction with River Valley Child Development Services and the U. S. Bureau of Apprenticeship and Training. All students are required to complete 300 hours of approved classroom training and two years of full-time on-the-job training.
- **Technical Studies: Automotive Service Technology, A.A.S.** The preparation of technicians able to service the complex systems found in today's automobile is the focus of this program. Students who complete all ASE certifications may earn credit that, when combined with general education requirements, can lead to the A.A.S. degree.
- **Technical Studies: Building Construction Technology, A.A.S.** The Building Construction Technology degree is designed to give the student a sound background in construction fundamentals. The practical on-the-job application of these fundamentals as they relate to the construction industry is emphasized. The program coupled with on-site training is intended to provide the construction industry with personnel capable of assuming various supervisory and technical roles.

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is intended to provide the construction industry with personnel capable of assuming various supervisory and technical roles.

- **Technical Studies: Diesel Technology, A.A.S.** This program is designed to prepare graduates for positions as diesel technicians for both on and off highway equipment. Individuals may complete all required credit courses on site or transfer diesel technology credit from various Career Technical Centers. Credit may also be transferred from industry based training from Caterpillar, Komatsu, Cummins, or Detroit. Individuals completing industry based training must confer with the program adviser for credit equivalency.
- **Technical Studies: Manufacturing Specialist, A.A.S. and Certificate** This program is designed for delivery on-site at manufacturing companies through the Workforce Development division. A one-year certificate is also available assuring that customized training can be laddered into college programs if desired.
- **Technical Studies: Paraeducator Emphasis, A.A.S.** This program is available for instructional aides in local school systems to meet requirements under the No Child Left Behind Act. Six credit hours of on-the-job training along with collaborative education courses from various colleges and general education courses from the CTC at WVU Tech make up degree requirements.

VI. General Studies Program

A.S. and Public Service Emphasis Certificate, Health Transfer

The Associate of Science degree program in General Studies is designed to meet the needs of students not accommodated by existing, structured curricula or who are seeking to transfer to any baccalaureate degree program at West Virginia University Institute of Technology or another four-year institution.

This degree program is also designed to meet the needs of students wishing to pursue an associate degree who desire maximum choice of courses. This option is ideal for those pursuing a degree for personal development or to meet specific vocational needs.

The General Studies program allows students the flexibility needed to tailor their program of study to meet the requirements of the baccalaureate program to which they plan to transfer.

A specific public service transfer option is available for students who desire entry in the Public Service Administration baccalaureate degree at WVU Tech.

A one-year health-transfer certificate is available for students planning to transfer to Nursing, Dental Hygiene or other health-related programs.

APPLIED PROCESS TECHNOLOGY

Program Description

The Applied Process Technology program is designed to prepare graduates for positions as chemical process operators. The program has been developed in response to industry demand in conjunction with members of the Chemical Alliance Zone and four community and technical colleges—WVU Tech, West Virginia State College, Marshall, and Ashland (KY).

General education courses are taught by the home institution and are assessed by ACT WorkKeys. Technical courses will be taught at the Regulatory Training Center in South Charleston and at Ashland Technical College. The student is responsible for transportation. A cohort of 25 students will be accepted into the program per year.

Program Objectives

Upon completion of the program the student will be able to:

- Demonstrate a working knowledge of the application of various components involved in process operation.
- Understand basic principles of fluids, pumps, heat, compressors, prime movers, measurement, and control modes.
- Apply safety and environmental rules and regulations such as OSHA and EPA to the work environment
- Apply principles of physics, technical mathematics, and mechanics in the chemical process environment.

APPLIED PROCESS TECHNOLOGY

Associate in Applied Science

		First Semester			Second Semester	
CAPT	202	Safety Skills Training1	3	CAPT 102	Process Fundamentals3	4
CAPT		Math for AP Technicians2	4	CAPT 204	Safety Skills Training1	3
CAPT		Physics for AP Technicians2	4	CAPT	Organic Chemistry2	1
ENGL	101	English Composition I	3	CHEM	Chemistry for APTech.	4
GNET	108	Basic Computer Applications	3	PHYS 202	College Physics II	4
			17			16
		Summer				
CAPT	104	Rotating & Reciprocating Equip	3			
		Elective	3			
			6			
	,	Third Semester			Fourth Semester	
CAPT	107	Process Chem/Stationary Equip3	3	CAPT 144	Process Operations3	4
CAPT	142	Instrumentation3	5	CAPT 146	Process Applications3	2
ECON	231	Principles of Economics	3	CAPT 148	Process Operations/Safety3	2
ENGL	202	Business & Professional Writing	3	CAPT 251	App of Process Operations3	4
			$\overline{14}$			$\overline{12}$

Notes:

1. Courses will be delivered through the KCS Regulatory Training Site in Charleston, WV. See advisor for course scheduling specifics.

2. Courses will be delivered through WVSCTC at Hurricane High School's campus. See advisor for course scheduling specifics.

3. Courses will be delivered through Ashland Technical College in Ashland, KY. See advisor for course scheduling specifics.

APPLIED TECHNOLOGY

Program Description

The Applied Technology program is a cooperative program between the Community & Technical College at WVU Tech and the vocational-technical/career centers. To complete the Applied Technology program, students must complete one of the indicated program emphases at a vocational-technical Career center and selected courses at the Community & Technical College at WVU Tech. The courses listed below are required to meet the core curriculum requirements for an associate of applied science degree. Additional technical elective courses are suggested to provide advanced-level background appropriate to the field being studied.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, the Applied Technology Program seeks to enhance the specific background of students with additional technical and entrepreneurial skills to enable them to work at advanced levels in their craft.

APPLIED TECHNOLOGY

Associate in Applied Science

General Education

ENGL	101	English Composition I	3
ENGL	202	Business & Professional Writing	3
MATH		Math 100+ or Computer	3
SCI		Laboratory Science Course	4
HU/SS		Hum/Soc Sci Elective	3
HU/SS		HU/SS-Cultural Div. Elect	3

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Technical Elective Courses

See program tracks below for suggested list 16-30

Content Area Concentration

Program taken at voc-tech/career center	15-30
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Total Required Hours 64

APPLIED TECHNOLOGY

Career Center Concentration: Air Conditioning and Refrigeration Technology CTC @ WVU Tech Courses:

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Prof. Writing	3
MATH	113	Technical Algebra	3	PHSC 105	Physical Science	4
HU/SS		Elective	3	HU/SS	Elective	3
DRET	202	Architectural Drafting*	3	INDT 102	Industrial Safety	2
CIET	131	Construction Materials	3	CIET 255	Construction Estimating	3
INDT	220	Construction Tech	2	MEET 250	Climate Control	3
			17			10
			1/			18

*DRET 120 Drafting I is a required course if the individual has no prior drafting or CAD experience. If the grade in DRET 120, or equivalent, was lower than a "B", if taken previously, DRET 121 should be completed, or permission of the instructor is required.

APPLIED TECHNOLOGY

Career Center Concentration: Automotive or Collision Repair Technology CTC @ WVU Tech Courses:

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Prof. Writing	3
MATH	124	Finite Math	3	PHSC 105	Physical Science	4
HU/SS		Elective	3	HU/SS	Elective	3
CMIS	101	Fund of Comp Appl.	3	INDT 102	Industrial Safety	2
BSSU	101	Intro to Business	3	BUAD 201	Business Law	3
		Technical Elective1	3		Technical Elective1	3
			18			18
~						

 Suggested MGMT 125 Career Development & Opportunities in Business, BSSU 201 Supervisory Mgmt, or BUAD 201 Business Law.

APPLIED TECHNOLOGY

Career Center Concentration: General Building Construction CTC @ WVU Tech Courses:

	First Semester			Second Semester	
ENGL	101 English Composition I	3	ENGL 202	Bus & Prof. Writing	3
MATH	113/ Technical Algebra/	3	PHSC 105	Physical Science	4
	124 Finite Math		HU/SS	Elective	3
HU/SS	Elective	3	INDT 102	Industrial Safety	2
DRET	202 Architectural Drafting*	3	CIET 255	Construction Estimating	3
INDT	212 Project Management	3	CIET 225	Codes, Contracts, Cost Analysis	3
INDT	220 Construction Tech	2			
		17			18

*DRET 120 Drafting I is a required course if the individual has no prior drafting or CAD experience. If the grade in DRET 120, or equivalent, was lower than a "B", if taken previously, DRET 121 should be completed, or permission of the instructor is required.

APPLIED TECHNOLOGY

Career Center Concentration: Computer Assisted Drafting CTC @ WVU Tech Courses:

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Prof. Writing	3
MATH	124	Finite Math	3	PHSC 105	Physical Science	4
HU/SS		Elective	3	HU/SS	Elective	3
DRET	202	Architectural Drafting1	3	CIET 255	Construction Estimating	3
DRET	214	Computer Graphics	3	DRET 121	Drafting II	2
MEET	121	Manufacturing Processes/or	3		Technical Elective1	3
CIET	131	Construction Materials				
			18			18

 May substitute DRET 284 Microstation, DRET 285 Land & Topographic Design, DRET 286 Parametric Modeling, DRET 287 Illustration & Animations, or INDT 256 CAD/CAM Systems.

2 Other elective courses may be used as appropriate to the program.

APPLIED TECHNOLOGY

Career Center Concentration: Electrical Technology CTC @ WVU Tech Courses:

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 20	2 Bus & Prof. Writing	3
MATH	113/	Technical Algebra/	3	PHSC 10	5 Physical Science	4
	124	Finite Math		HU/SS	Elective	3
HU/SS		Elective	3	INDT 10	2 Industrial Safety	2
GNET	212	Project Management	3	CIET 25	5 Construction Estimating	3
INDT	220	Construction Tech	2	CIET 22	5 Codes, Contracts, Cost Analysis	3
		Technical Elective1	3		•	
			17			18

 Recommend MGMT 125 Career Development & Opportunities in Business, BSSU 101 Intro to Business, BSSU 201 Supervisory Mgmt, or BUAD 201 Business Law.

APPLIED TECHNOLOGY

Career Center Concentration: Cisco/A+ Networking Academies CTC @ WVU Tech Courses:

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Prof. Writing	3
MATH	113/	Technical Algebra/	3	PHSC 105	Physical Science	4
	124	Finite Math		HU/SS	Elective	3
HU/SS		Elective	3	CIET 255	Construction Estimating	3
GNET	212	Project Managment	3	CIET 225	Codes, Contracts, Cost Analysis	3
ELET	212	Network Security Fund	3	OTEC 176	Ethics	1
DRET	120	Drafting I	2	OTEC 280	Access or/Dreamweaver1	2
OTEC	181	Records Management	1			
		C C				

APPLIED TECHNOLOGY Career Center Concentration: Plumbing Technology CTC @ WVU Tech Courses:

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Prof. Writing	3
MATH	113/	Technical Algebra/	3	PHSC 105	Physical Science	4
	124	Finite Math		HU/SS	Elective	3
HU/SS		Elective	3	INDT 102	Industrial Safety	2
DRET	120	Drafting I	2	CIET 255	Construction Estimating	3
INDT	212	Project Management	3	CIET 225	Codes, Contracts, Cost Analysis	3
INDT	220	Construction Tech	2		•	
			17			18

APPLIED TECHNOLOGY Career Center Concentration: Welding Technology CTC @ WVU Tech Courses:

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Prof. Writing	3
MATH	124	Finite Math	3	PHSC 105	Physical Science	4
HU/SS		Elective	3	HU/SS	Elective	3
BSSU	101	Intro to Business	3	INDT 102	Industrial Safety	2
CMIS	101	Fund of Comp Appl.	3	BUAD 201	Business Law	3
DRET	120	Drafting I	2		Technical Elective	3

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AUTOMOTIVE SERVICE TECHNOLOGY TECHNICAL STUDIES Associate of Applied Science Automotive Service Excellence (ASE) Based Program

The ASE-based program in Automotive Service Technology is designed to allow automotive technicians who have demonstrated specific competence in the technical aspects of the field to broaden their education and obtain skills and credentials for advancement and increased responsibility. Qualified candidates for this program will complete a NATEF certified automotive program, obtain ASE certifications A1 through A8, and complete the general education courses specified for automotive students. Upon completion of the specified general education courses and prior to application for graduation, students must submit to the registrar proof of completion of a qualified program and proof of the specified certifications, for which they will be granted a total of 34 AUTO credits. Students will be granted credit only on completion of all three components of this track. No credit will be granted for individual ASE certifications.

Course outcomes are assessed by exit examinations; general education outcomes by ACT WorkKeys.

Completion of NATEF certified Automotive Program	*
ASE Certification A1 (Auto: Engine Repair)	*
ASE Certification A2 (Auto: Automatic Transmission/Transaxle)	*
ASE Certification A3 (Auto: Manual Drive Train and Axles)	*
ASE Certification A4 (Auto: Suspension and Steering)	*
ASE Certification A5 (Auto: Brakes)	*
ASE Certification A6 (Auto: Electrical/Electronic Systems)	*
ASE Certification A7 (Auto: Heating and Air-conditioning)	*
ASE Certification A8 (Auto: Engine Performance)	*
-	34

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus and Prof Writing	3
MATH	121	Basic Math I	3	PHSC 105	Physical Science I	4
GNET	100	Technology Orientation	1	BUAD 201	Business Law I	3
BSSU	101	Introduction to Business	3	SOCI 101	Principles of Sociology	3
CMIS	101	Fund Computer Appl.	3	HIST 388	History of Technology	3
		* **			Elective	1

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BOARD OF GOVERNOR'S DEGREE COMPLETION PROGRAM Associate in Applied Science

Program Objectives

The Governor's Associate in Applied Science degree program is a nontraditional, degree completion opportunity at the associate degree level specifically devised for adult learners to meet occupational goals, employment requirements, establish professional credentials, or achieve personal goals. This degree program provides the opportunity for adult learners to utilize credit for prior learning experiences via licenses, certificates, military credit and other non-collegiate sources while assuring maximum credit transferability.

Through the Governor's Associate in Applied Science degree program, adult students can establish deserved credentials, achieve a personal sense of accomplishment, and position themselves for advancement into a baccalaureate program. The Governor's Associate in Applied Science degree increases educational access and degree opportunities for adults who have deferred or interrupted their educational plans. Such a program provides the base of the educational ladder for adults to accomplish the first level of educational advancement as well as develop the self-confidence and incentive to move toward the completion of a baccalaureate degree. The Governor's Associate in Applied Science degree program is designed to articulate with the Higher Education Policy Commission Bachelor of Arts degree.

General Electives

39 credit hours

Includes credit hours for optional area of emphasis, portfolio course, and capstone course

General Education

21 credit hours

Communications, Sciences, Social Sciences, Mathematics, Computer Literacy, and other approved general education courses:

Total		60 Credit Hours
	Computer Literacy	3
	Social Sciences	6
	Mathematics/Sciences	6
	Communications	6

1

Residency Requirement

12 credit hours from a regionally accredited higher education institution. A minimum of 3 credits are required at CTC at WVU Tech. Petition for exception to the residency requirement may be made to the Vice President.

Grades and Grading

Grading will follow the institution's current grading policy.

Admission Requirements

Students are eligible for admission to the program two years after graduation from high school. In cases of those passing a high school equivalency examination, admission must be two years after their high school class has graduated.

Area of Emphasis to be determined in conjunction with BOG A.A.S. advisor and department chair after student request is submitted.

For complete program description and requirements, contact the program advisor or consult the institutional web page.
BUILDING CONSTRUCTION TECHNOLOGY Technical Studies

Program Description

The Building Construction Technology degree program is designed to give the student a sound background in construction fundamentals. The practical on-the-job application of these fundamentals as they relate to the construction industry is emphasized. The program, coupled with on-site training is intended to provide the construction industry with personnel capable of assuming various supervisory and technical roles.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, the graduate will be able to apply basic construction management procedures. Course outcomes are assessed by course examinations; general education outcomes are assessed by ACT WorkKeys.

Plus-Two Baccalaureate Options

Technology Management, Public Service/Construction Administration Building Construction Technology Associate of Applied Science

Component I - General Education Core (22 credit hours)

ENGL-101	English Composition I	3
ENGL 202	Business & Professional Writing	3
MATH-113	Technical Algebra	3
MATH-114	Technical Trig	3
Lab Science	Phy Sci, Physics, Biol, Chem	4
HU/SS	Humanities and/or Social Science	3
HU/SS	Humanities and/or Social Science	3
HU/SS	Humanities and/or Social Science	3
(One course	to meet Cultural Diversity)	

Component II - Technical Core CTC@Tech Courses (21 credit hours)

DRET-202	Architectural Drafting	3
CIET-121	Construction Surveying	2
CIET-220	Construction Methods & Equip	3
CIET-255	Construction Estimating	3
GNET-108	Basic Computer Applications	3
INDT-102	Industrial Safety	2
INDT-212	Project Management	3
INDT-220	Construction Technology	2

Component III - Technical/Occupational Specialty (12 credit hours)

MGMT-281	Fundamentals of Management	3
Additional stru	ctured technical specialty courses	specific to the construction field:
Technical Spec	ialty Elective	3
Technical Spec	ialty Elective	3
Technical Spec	ialty Elective	3

<u>6</u>

Component IV - OJT or Supervised Work-Based Learning (6 credit hours) Documented On-the-job training

Documenteu	On-the-job	uannig	

Total Credit Hours	64
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BUSINESS TECHNOLOGY ACCOUNTING EMPHASIS

Program Description

The Associate of Science degree in Business Technology: Accounting Emphasis prepares graduates for entry-level accounting jobs. The accountant is concerned with all phases of a business or governmental operation. Through the application of accurate cost analysis and accounting techniques, the accountant provides management with the facts and figures necessary to the management decision making process. Such information will determine the ultimate accuracy and validity of future management decisions.

The business world needs accountants who have sound judgment, technical competence, and a high sense of ethical responsibility.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon completion of the program, the student will be able to:

- · Perform basic accounting procedures accurately and efficiently
- · Apply principles of economics, management, and marketing in the workplace
- Utilize computer application software

Course outcomes are assessed by exit examinations; general education outcomes are assessed by ACT WorkKeys.

Plus-Two Baccalaureate Options

Business Management, Accounting

Accounting Emphasis

Associate of Science

		First Semester			Second Semester	
BUAD	100	Business Administration Orient.	1	ACCT 202	Principles of Accounting II	3
ACCT	201	Principles of Accounting I	3	ECON 232	Principles of Economics II	3
CMIS	101	Fund. Comp. Appl.	3	(HU/SS)	*	
ECON	231	Principles of Econ. I (HU/SS)	3	HU/SS	Cultural Diversity Elective	3
ENGL	101	English Composition I	3	ACCT 245	Computerized Accounting	3
MATH	124	Finite Math I	3	BUAD 286	Business Statistics	3
OTEC	100	Office Keyboarding or Elective	2			
			18			15
		Third Semester			Fourth Semester	
SCI		Third Semester Lab Science	4	ENGL 202	Fourth Semester Business and Prof. Writing	3
SCI BSSU	201	Third Semester Lab Science Supervisory Management	43	ENGL 202 BUAD 243	Fourth Semester Business and Prof. Writing Intermediate Acct. II	3 3
SCI BSSU	201	Third Semester Lab Science Supervisory Management (or MGMT 381 Fund of Mgt.)	4 3	ENGL 202 BUAD 243 BSSU 206	Fourth Semester Business and Prof. Writing Intermediate Acct. II Marketing	3 3 3
SCI BSSU BUAD	201 244	Third Semester Lab Science Supervisory Management (or MGMT 381 Fund of Mgt.) Cost Accounting	4 3 3	ENGL 202 BUAD 243 BSSU 206	Fourth Semester Business and Prof. Writing Intermediate Acct. II Marketing (or MKTG 330 Marketing	3 3 3
SCI BSSU BUAD BUAD	201 244 242	Third Semester Lab Science Supervisory Management (or MGMT 381 Fund of Mgt.) Cost Accounting Intermediate Acct. I	4 3 3 3	ENGL 202 BUAD 243 BSSU 206 BSSU 202	Fourth Semester Business and Prof. Writing Intermediate Acct. II Marketing (or MKTG 330 Marketing Business Finance	3 3 3 3
SCI BSSU BUAD BUAD BUAD	201 244 242 201	Third Semester Lab Science Supervisory Management (or MGMT 381 Fund of Mgt.) Cost Accounting Intermediate Acct. I Business Law I	4 3 3 3 3	ENGL 202 BUAD 243 BSSU 206 BSSU 202	Fourth Semester Business and Prof. Writing Intermediate Acct. II Marketing (or MKTG 330 Marketing Business Finance (or FINC 325 Financial Mgt.)	3 3 3 3
SCI BSSU BUAD BUAD BUAD	201 244 242 201	Third Semester Lab Science Supervisory Management (or MGMT 381 Fund of Mgt.) Cost Accounting Intermediate Acct. I Business Law I	4 3 3 3 3	ENGL 202 BUAD 243 BSSU 206 BSSU 202 Restricted El	Fourth Semester Business and Prof. Writing Intermediate Acct. II Marketing (or MKTG 330 Marketing Business Finance (or FINC 325 Financial Mgt.) ective	3 3 3 3 3
SCI BSSU BUAD BUAD BUAD	201 244 242 201	Third Semester Lab Science Supervisory Management (or MGMT 381 Fund of Mgt.) Cost Accounting Intermediate Acct. I Business Law I	4 3 3 3 3	ENGL 202 BUAD 243 BSSU 206 BSSU 202 Restricted El	Fourth Semester Business and Prof. Writing Intermediate Acct. II Marketing (or MKTG 330 Marketing Business Finance (or FINC 325 Financial Mgt.) ective	3 3 3 3 3

NOTE: Students planning to continue into the B.S. in Business Management Program and B.S. inAccounting Program must take MGMT 381, MKTG 330, and FINC 325.

NOTE: The restricted electives indicated in the second year of the pattern sheet must be taken fromACCT-345, MGMT-382, ACCT-444, ACCT-445, ACCT-446. Students planning to continue into the B.S. in Business Management Program and B.S. in Accounting Program must take MGMT-381, MKTG-330, and FINC-325.

BUSINESS TECHNOLOGY BUSINESS SUPERVISION EMPHASIS

Program Description

The A.S. Business Technology Business Supervision Emphasis program is designed to prepare graduates for supervisory roles in small businesses. An increasingly complex business environment requires that a large number of personnel engaged in operating businesses have greater knowledge and skill in a variety of business procedures and techniques. This associate degree program is specifically designed to meet the needs of the part-time student interested in upgrading business supervision expertise. Business Supervision is particularly appropriate for small business managers interested in acquiring the necessary background to be successful in carrying out the many responsibilities they confront in present day operations.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon completion of the program, the student will be able to:

- · Apply principles of management and supervision in interaction with others
- Apply principles of finance, law, and economics in the workplace
- Utilize computer application software

Course outcomes are assessed by exit examinations; general education outcomes are assessed by ACT WorkKeys.

Plus-Two Baccalaureate Option

Business Management

Business Supervision Emphasis

Associate of Science

	First Semester			Second Semester	
100	Business Administration Orient.	1	ACCT 202	Principles of Accounting II	3
201	Principles of Accounting I	3	ECON 232	Principles of Econ. II	3
101	Fund. Comp. Appl.	3	MATH 124	Finite Math I	3
231	Principles of Econ. I	3	HU/SS	Cultural Diversity Elective	3
101	English Composition I	3		Restricted Elective	3
182	Business Finance	3			
100	Office Keyboarding	2			
	, ,				
		18			15
	Third Semester			Fourth Semester	
	Time bennester			i ourth Semester	
201	Supervisory Management*	3	ENGL 202	Business & Prof. Writing	3
201	Supervisory Management* (or MGMT-381 Fund. of Mgt.)	3	ENGL 202 OTEC 287	Business & Prof. Writing Office Management	3 3
201 206	Supervisory Management* (or MGMT-381 Fund. of Mgt.) Marketing*	3 3	ENGL 202 OTEC 287	Business & Prof. Writing Office Management Restricted Electives	3 3 9
201 206	Supervisory Management* (or MGMT-381 Fund. of Mgt.) Marketing* (or MKTG-330 Marketing)	3 3	ENGL 202 OTEC 287	Business & Prof. Writing Office Management Restricted Electives	3 3 9
201 206 204	Supervisory Management* (or MGMT-381 Fund. of Mgt.) Marketing* (or MKTG-330 Marketing) Personnel Relations	3 3 3	ENGL 202 OTEC 287	Business & Prof. Writing Office Management Restricted Electives	3 3 9
201 206 204 201	Supervisory Management* (or MGMT-381 Fund. of Mgt.) Marketing* (or MKTG-330 Marketing) Personnel Relations Business Law	3 3 3 3	ENGL 202 OTEC 287	Business & Prof. Writing Office Management Restricted Electives	3 3 9
201 206 204 201	Supervisory Management* (or MGMT-381 Fund. of Mgt.) Marketing* (or MKTG-330 Marketing) Personnel Relations Business Law Lab Science	3 3 3 3 4	ENGL 202 OTEC 287	Business & Prof. Writing Office Management Restricted Electives	3 3 9
201 206 204 201	Supervisory Management* (or MGMT-381 Fund. of Mgt.) Marketing* (or MKTG-330 Marketing) Personnel Relations Business Law Lab Science	3 3 3 3 4	ENGL 202 OTEC 287	Business & Prof. Writing Office Management Restricted Electives	3 3 9
	100 201 101 231 101 182 100	 100 Business Administration Orient. 201 Principles of Accounting I 101 Fund. Comp. Appl. 231 Principles of Econ. I 101 English Composition I 182 Business Finance 100 Office Keyboarding 	100 Business Administration Orient. 1 201 Principles of Accounting I 3 101 Fund. Comp. Appl. 3 231 Principles of Econ. I 3 101 English Composition I 3 182 Business Finance 3 100 Office Keyboarding 2 18	100 Business Administration Orient. 1 ACCT 202 201 Principles of Accounting I 3 ECON 232 101 Fund. Comp. Appl. 3 MATH 124 231 Principles of Econ. I 3 HU/SS 101 English Composition I 3 3 182 Business Finance 3 3 100 Office Keyboarding 2 18 Third Semester	100 Business Administration Orient. 1 ACCT 202 Principles of Accounting II 201 Principles of Accounting I 3 ECON 232 Principles of Econ. II 101 Fund. Comp. Appl. 3 MATH 124 Finite Math I 231 Principles of Econ. I 3 HU/SS Cultural Diversity Elective 101 English Composition I 3 Restricted Elective 18 18 18 Third Semester

* Restricted electives chosen from ACCT, ECON, FINC, MGMT or MKTG courses.

BUSINESS TECHNOLOGY COMPUTER INFORMATION SYSTEMS EMPHASIS

Program Description

The A.S. Business Technology Computer Information Systems emphasis program is designed to meet the need for qualified computer specialists and information system managers. The program prepares the student for the technical computer career, providing practical experience with computer equipment and programming and familiarizing the student with business applications of information systems.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon completion of the program, the student will be able to:

- Be proficient in the use of Visual Basic and COBOL for business applications
- Analyze computer information systems and troubleshoot hardware problems
- · Apply principles of economics, management, and marketing in the workplace

Course outcomes are assessed by exit examinations; general education outcomes are assessed by ACT WorkKeys.

Plus-two Option

Management Information Systems or Technology Management

Computer Information Systems Emphasis Associate of Science

BUAD ACCT CMIS ECON ENGL OTEC MATH	100 201 101 231 101 100 124	First Semester Business Administration Orient. Principles of Accounting I Fund. Comp. Appl. Principles of Econ. I (HU/SS) English Composition I Office Keyboarding Finite Math I	1 3 3 3 2 3	ACCT 202 ECON 232 CMIS 162 ENGL 202 BUAD 286	Second Semester Principles of Accounting II Principles of Economics II (HU/SS) Princ. Comp. Info. Systems Business & Prof. Writing Business Statistics	3 3 3 3 3
			18			15
BSSU BSSU CMIS	201 206 164	Third Semester Lab Science Supervisory Management (or MGMT-381 Fund. of Mgt.) Marketing (or MKTG-330 Marketing) Visual Basic Technical Elective	4 3 3 3	BUAD 231 CMIS 265 HU/SS	Fourth Semester Managerial Acct. Visual Programing Cultural Diversity Elective Technical Electives	3 3 6-8
			16		15	-17

Technical Electives: ELET-110 and ELET-111 or ELET-121 (4) and ELET-122 (4) or Two OTEC-280 (2)

BUSINESS TECHNOLOGY RESTAURANT MANAGEMENT EMPHASIS

Program Description

The Associate of Science degree in Business Technology with an emphasis in Restaurant Management is a blend of business core classes and the Pro-Management curriculum endorsed by the Educational Foundation of the National Restaurant Association. Articulated credit is possible for students who have completed the ProStart curriculum or a culinary arts program. The program is designed to provide students with courses in six functional areas: basic business courses; risk management, cost control and revenue management, human resources and diversity management, marketing management, and operations management. Successful completion of the program earns students an industry-recognized ProManagement Program credential.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon completion of the program, the student will be able to:

· Perform basic food operations in a restaurant setting

• Apply principles of management to restaurant employees and functions.

Course outcomes are assessed by exit examinations; general education outcomes are assessed by ACT WorkKeys.

Plus-Two Baccalaureate Option

Business Management

Restaurant Management Emphasis

Associate of Science

		First Semester			Second Semester	
BUAD	100	Business Administration Orient.	1	ACCT 202	Principles of Accounting II	3
ACCT	201	Principles of Accounting I	3	ENGL 202	Bus & Prof. Writing	3
CHEM	113	Principles of Chemistry	4	CMIS 101	Fund. of Computer Appli.	3
ENGL	101	English Composition I	3	*REST 122	Operations Management I	3
MATH	124	Finite Math I	3	*REST 131	Cost Control	3
*REST	101	Intro to Restaurant Mgt	2	*REST 151	Internship	1
*REST	150	Internship	1		-	
			17			16
		Third Semester			Fourth Semester	
BUAD	201	Business Law I	3	BSSU 204	Personnel Relations (or	3
BSSU	201	Supervisory Management	3	MGMT482	Human Resource Mgt)	
		(or MGMT-381 Fund. of Mgt)		BSSU 206	Marketing	3
ECON	231	Prin of Econ. I (HU/SS)	3	HU/SS	Cultural Diversity Elective	3
*REST	220	Risk Management	3	*REST 231	Operations Management III	3
*REST	221	Operations Management II	3	*REST 250	Internship	3-9

* Up to 21 hours may be articulated from culinary or Pro-Start vocational programs through EDGE. Individual equivalency of credits will be based on program correlation with REST courses.

CHILD DEVELOPMENT SPECIALIST1,2 OCCUPATIONAL DEVELOPMENT Associate in Applied Science

COMPONENT	I GENERAL EDUCATION	
ENGL 101	English Composition I	3
ENGL 102	Business & Professional Writing	3
CMIS 101	Fundamentals of Computer Applications	3
OTEC 182	Business Mathematics	3
	Laboratory Science	4
	Gen Education Elective	3
		19

COMPONENT II CLASSROOM TRAINING (32 Credit Hours) (12 Credit Hours)

Component II A Occupational Component Electives2

 Component II B Classroom Training in Child Development (20 Credit Hours) All students are required to complete a minimum of 300 hours of approved total classroom

training. Approved training is available through River Valley Child Development Services. Please contact program advisor for information.

COMPONENT III

ON-THE-JOB TRAINING IN CHILD DEVELOPMENT

All students are required to complete a minimum of two years of full-time on-the-job training in an approved apprenticeship employment site. Contact program advisors for more information.

HOURS REQUIRED FOR GRADUATION:

Notes

- 1. Students may enter this program with no prior experience but must complete approved Child Development Apprenticeship before being eligible for graduation.
- 2. Child Development Associate (CDA) fulfills 12 credit hours of electives in Occupational Component Electives.
- 3. Fulfills state Written Communication requirements for Occupational Child Development Specialist Degree.
- 4. Fulfills state Oral Communication requirement for Occupational Child Development Specialist Degree.
- 5. Seven total Quantitative Skills/Laboratory Science Experience credits are required for Occupational Development Degree and General Education Core. 1) Laboratory science may include BIOL 111 General Biology, PHSC Physical Science, 2) OTEC 182 coupled with CMIS 101 meets computer application general education core.
- 6. Fulfills Social Science course requirement for Occupational Development and General Education/Cultural Diversity requirement for WVU Tech General Education Core.
- 7. Must provide documentation of West Virginia Department of Education and the Bureau of apprenticeship and Training "Child Development Specialist" completion to have credit recorded immediately prior to graduation.
- 8. A letter must be received from employer to verify this employment.
- 9. Maximum of 2,600 contact hours of on-the-job training, converted to credit hours on a ratio of 200:1, can be counted toward the A.A.S. degree.

(22 Credit Hours)

(13 Credit Hours)

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CIVIL ENGINEERING TECHNOLOGY

Program Description

The Associate of Science degree Civil Engineering Technology (ASCET) is a two-year program that prepares technicians for employment in mining and other industries, environmental studies, construction, water resources, city and subdivision planning, and related fields.

The program stresses mechanics, materials, surveying, structures, hydrologic systems, soil mechanics and highways. The technician is prepared to support the engineer in areas such as construction, from preliminary surveying to final design and construction, environmental studies and permit applications. Typical assignments could include material selection and testing, surveying and map preparation, subdivision layout and planning, hydrologic structure design and construction, permit application preparation, construction supervision, and environmental monitoring. Completion of this program also qualifies the graduate to enter either a plus-two Bachelor of Science program in Engineering Technology-Civil or Engineering Technology-Environmental emphasis.

The A.S. Civil Engineering Technology program is accredited by the Technology Accreditation Commission (TAC) of ABET, Inc.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Associate degree graduates apply the following in regard to the analysis, design, development, implementation, and/or oversight of civil systems and processes:

- · technical core topics in statics and strength of materials
- the following technical specialty areas: surveying, structural steel and concrete design, soil and foundations, engineering materials, hydraulics, highways, and technical and computer aided drafting
- physics principles having an emphasis in applied mechanics and added technical topics in physics having application to civil systems and processes
- · foundation mathematics to solve technical problems

Course outcomes are assessed by exit examinations in each course. Program outcomes are assessed in a designated 'capstone' course. General education outcomes are assessed by ACT WorkKeys.

Careers in Civil Engineering Technology

Typical job titles include: Lead Engineering Technician, Assistant Project Engineer, Design Technician, Surveying Coordinator, Surveying/Party Chief, Computer Technician, Survey Technician, Estimator, Traffic/Highway Technician, Environmental Technician, Water and Wastewater Plant Operator.

Plus-Two Baccalaureate Options

Bachelor of Science program in Engineering Technology-Civil, Engineering Technology -Environmental, or Industrial Technology at WVU Tech.

Advanced Placement Credit for High School/Vocational-Technical Center/College Programs

High school level drafting, surveying, or construction subjects are not necessary for entrance into the Civil Engineering Technology program. Beginning subjects are part of the program. The student who has completed such vocational courses, however, may receive advanced placement. Articulation Edge agreements are in place with various vocational-technical centers. Advanced placement is also available to the student with prior college experience. Please check with the department head or division director for more information.

Civil Engineeering Technology

1	Associate	of	Science	(ASCET)
1	Associate	of	Science	(ASCET)

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus. & Prof. Writing	3
MATH	113	Technical Algebra	3	CIET 114	Statics	3
MATH	114	Technical Trigonometry	3	CIET 141	Surveying I	3
GNET	100	Technology Orientation	1	DRET 121	Drafting II	2
GNET	108	Basic Computer Appl.	3	PHYS 201	College Physics I	4
CIET	131	Construction Materials	3	HU/SS	Elective (HIST-101)1)	3
DRET	120	Drafting I	2		, , , , , , , , , , , , , , , , , , ,	
		-				
			18			18
		Third Somestor			Fourth Somestor	
MATH	117	Tillu Sellester	2	CIET 116	Fourth Semester	2
MAIH	11/		3	CIET 210	Structural Concrete Design	3
CIET	115	Strength of Materials	3	CIET 222	Soils and Foundations	3
CIET	144	Surveying II	4	CIET 245	Highways 2	3
CIET		20			0,	
CILI	215	Structural Steel Design	3	PHYS 202	College Physics II	4
CIET	215 230	Structural Steel Design Hydrology & Drainage	3 3	PHYS 202	College Physics II Technical Electives 3	4 2–3
CIET	215 230	Structural Steel Design Hydrology & Drainage	3 3	PHYS 202 SS	College Physics II Technical Electives 3 Elective (ECON-231)	4 2–3 3
CIET	215 230	Structural Steel Design Hydrology & Drainage	33	PHYS 202 SS	College Physics II Technical Electives 3 Elective (ECON-231)	4 2-3 3

1. Recommended to meet Cultural Diversity requirement as part of Core Curriculum Requirements. Must also complete Citizenship requirement.

2. Capstone course.

3. Must be approved by the advisor.

COMPUTER ENGINEERING TECHNOLOGY Emphasis of Electrical Engineering Technology

Program Description

The Associate of Science degree Computer Engineering Technology emphasis of the Electrical Engineering Technology is a two-year program that prepares graduates with the technical skills necessary to enter careers in the design, application, installation, operation and/or maintenance of computer systems. Graduates will have strengths in the building, testing, operating, and maintaining existing computer systems and their associated software systems.

The program is NOT currently accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (TAC/ABET).

Program Objectives

Graduates of the program must demonstrate knowledge and hands-on competence appropriate to the goals of the program in:

- 1. the application of electric circuits, computer programming, associated software applications, analog and digital electronics, microcomputers, operating systems, and local area networks to the building, testing, operation, and maintenance of computer systems and associated software systems, and
- 2. the applications of physics at the level of algebra and trigonometry.

Course outcomes are assessed by exit examinations in each course. Program outcomes are assessed in a designated 'capstone' course. General education outcomes are assessed by ACT WorkKeys.

Careers in Computer Engineering Technology

The program prepares graduates with the technical and managerial skills necessary to enter careers in designing, applying, installing, manufacturing, testing, operating and/or maintaining computer systems. Graduates of the program typically have strengths in building, testing, operating, and maintaining existing computer systems. Job titles of recent graduates have included: Software Developer, Computer Management Associate, Electrical Technician, Engineering Technician, Test Engineer, and Technical Support Specialist.

Plus-Two Baccalaureate Options

Completion of this program prepares the graduate for jobs in the areas mentioned above and also qualifies the graduate to enter the plus-two Bachelor of Science programs in Engineering Technology, Industrial Technology, or Technology Management at WVU Tech. Advanced Placement Credit for High School/Vocational-Technical Center/College Programs

High school level electronic, electrical, or computer-oriented subjects are not necessary for entrance into the Computer Engineering Technology program. Beginning subjects are part of the program. The student who has completed such vocational courses, however, may receive advanced placement. Articulation/Edge agreements are in place with various vocationaltechnical centers. Advanced placement is also available to the student with prior college experience. Please check with the department head or division director for more information.

Computer Engineering Technology Emphasis of Electrical Engineering Technology

Associate of Science

		First Semester			Second Semester	
ENGL	101	English Composition I	3	MATH 117	Technical Calculus	3
MATH	113	Technical Algebra	3	ELET 121	Internetworking I	4
MATH	114	Technical Trigonometry	3	CSCI 122	Computer Science II	3
GNET	100	Technology Orientation	1	ELET 171	DC Ĉircuit Analysis	4
ELET	110	Computer Hardware Systems	3	ELET 111	Computer Operating Systems	3
CSCI	121	Computer Science I	4			
			17			17
ENGL ELET CSCI PHYS HU/SS	202 181 231 201	Third Semester Bus & Prof. Writing Electronic Devices I Intro. Computer Org. College Physics I Elective (HIST-1011)	3 4 3 4 3	ELET 290 ELET 241 GNET 108 PHYS 202 HU/SS	Fourth Semester Digital Electronics Fundamentals of Web Design Basic Comp. Applications College Physics II Elective (ECON 231) Technical Elective	4 3 3 4 3 2
			17			19

1. HU/SS must satisfy the college diversity requirements. History 101 or History 102 are suggested.

2. Technical electives must be from the approved departmental list.

COMPUTER AND INFORMATION TECHNOLOGY

Program Description

The Associate of Science degree Computer and Information Technology (ASCIT) is a twoyear program that prepares the graduate to enter the field of information technology. It provides an entry level technical, academic, and experiential background in computer repair, computer networking and internetworking, and WEB based applications. The student is prepared to sit for national certification examinations in computer repair (CompTIAA+), computer networking (CompTIA NET+), and internetworking (Cisco Certified Network Associate, CCNA). Technical specialty courses in the program may be selected to provide background in electrical/ electronic fundamentals, in related fields, or for certification in computer operating systems (Microsoft MCP).

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

The program prepares graduates with the technical skills necessary to enter careers in the design, application, installation, operation, and/or maintenance of computers, networks, and systems dedicated to the processing and transfer of information. The field of Information Technology depends heavily on the application of computer and network components for use in the processing, analysis, and transfer of information. Accordingly, graduates of associate degree programs must demonstrate knowledge and hands-on competence appropriate to the goals of the program in:

- the application of computer and network hardware, operating systems, system and network administration, programming languages, and applications software in the building, testing, operation, and maintenance of hardware and software systems
- the application of electrical, electronic, telecommunications, and digital signal propagation fundamentals in the building, testing, operation, and maintenance of hardware and software systems.

Course outcomes are assessed by exit examinations in each course. Program outcomes are assessed in a designated 'capstone' course. General education outcomes are assessed by ACT WorkKeys. The graduating student is eligible to sit for the CompTIA A+, CompTIA NET+, and Cisco Certified Network Associate (CCNA) Certification Exams.

Careers in Computer and Information Technology

Graduates of the program typically have strengths in the building, testing, operation, and maintenance of existing hardware and software systems.

Plus-Two Baccalaureate Options

Plus-two Bachelor of Science program in Technology Management, Information Technology Emphasis

Advanced Placement Credit for High School/Vocational-Technical Center/College Programs

High school level computer science, computer repair (A+), or computer internetworking (Cisco) subjects are not necessary for entrance into the Computer & Information Technology program. Beginning subjects are part of the program. The student who has completed such vocational courses, however, may receive advanced placement. Articulation, vocational or EDGE, and dual credit agreements are in place with various high schools and vocational-technical centers. Advanced placement is also available to the student with prior college experience. Please check with the department head or division director for more information.

Computer and Information Technology

Associate of Science (ASCIT)

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Prof. Writing	3
ELET	110	Computer Hardware Systems	3	ELET 111	Computer Operating Systems	3
ELET	121	Internetworking I	4	ELET 122	Internetworking II	4
GNET	100	Technology Orientation	1	MATH 113/	Tech Algebra/	3
				124	Finite Math	
GNET	108	Basic Computer Applications	3		Computer Programming Language1	3
			14			16
		Third Semester			Fourth Semester	
FI FT	211	Network Operating Systems	3	FLFT 212	Network Security Fund	3
FLET	211	Internetworking III	1	ELET 212 FLET 222	Internetworking IV ⁵	1
	221	Flactive ² (History 101)	3	ELET 241	Fundamentals of Web Design	3
110/55		Lab Science ³	1		Flactive ⁶	3
		Tashnisal Elastiva ⁴	2	110/55	Tashniaal Elastiyas4	1
		Technical Elective	3		Technical Electives	4
			17			17
			1/			1/

 Possible courses include ELET 231 Fundamentals of UNIX, ELET 234 Fundamentals of Java, GNET 410 C++ Programming for Technology, CSCI 111 Computer Science/Engineers I, or courses devoted to covering C++, UNIX, Visual Basic, or Java. Course should be selected with program advisor approval.

 Recommended to meet both the Cultural Diversity and Humanities sequence requirements. Must also complete the Citizenship requirement.

3. Those choosing to take more than one lab science course are advised to take an eight-hour sequence.

4. Electives should be selected with program advisor approval.

5. Capstone course

6. See Core Curriculum Requirements section of the institutional catalog.

Computer and Information Technology Certificates

The following one-year certificates in computer technology areas provide specialist options to meet employer needs.

Electrical Computer-Network Specialist

ENGL 101	English Composition I	3
ELET 121	Internetworking I	4
MATH 113	Technical Algebra	3
ELET 171	DC Circuit Analysis	4
ELET 181	Analog Devices	4
ELET 290	Digital Devices	4
ELET 110	Computer Hardware Sys.	3
ELET 111	Computer Operating Sys.	3
ELET 211	Network Operating Sys.	3
OTEC 282	Interpersonal Relations	1

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Internetworking & Computer Security Specialist

ENGL 101	English Composition I	3
ELET 121	Internetworking I	4
ELET 122	Internetworking II	4
ELET 221	Internetworking III	4
ELET 222	Internetworking IV	4
ELET 110	Computer Hardware Sys.	3
ELET 111	Computer Operating Sys.	3
ELET 211	Network Operating Sys.	3
ELET 212	Network Security Fund.	3
OTEC 282	Interpersonal Relations	1

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Networking Security Administrator Specialist

ELET 121	Internetworking I	4
ELET 111	Computer Operating Sys.	3
MATH 124	Finite Math	3
CMIS 165	Principles of Info.	3
	Security & Assurance	
ELET 211	Network Operating Sys.	3
ECON 232	Principles of Econ II	3
MGMT 381	Fund. of Mgmt.	3
CMIS 365	Mgmt of Info Security	3
	Policy and Admin.	
ELET 424	Disaster Recovery	3
CMIS 465	Computer Law and Ethics	3
OTEC 282	Interpersonal Relations	1

Computer Science Associate of Science

Program Objectives

The Associate of Science degree in Computer Science will prepare students as entry-level programmers capable of writing traditional procedural language programs for dedicated use as well as object-oriented programs. Students will be able to write web-enabled applications and work with computer networks and databases.

The A.S. Computer Science degree is well suited for students who desire the programming aspect of computer science but do not wish to pursue the upper-level math-based algorithms and scientific programming area of study. Course outcomes are assessed by exit examinations; general education by ACT WorkKeys.

Plus-two Option

B.S. Computer Science

		First Semester			Second Semester	
ENGL	101	English Composition	3	ENGL 202	Business & Prof Writing	3
HU/SS		Elective (HIST-101)1	3	HU/SS	Elective (HIST 102)1	3
MATH	113	Technical Algebra	3		Laboratory Science ⁵	4
MATH	114	Technical Trig	3	MATH 117	Technical Calculus	3
CSCI	121	Computer Science I	4	CSCI 122	Computer Science II	3
GNET	101	Technology Orientation	1		1	
			17			16
		Third Semester			Fourth Semester	
		Laboratory Science5	4	CSCI 222	Software Engineering	3
CSCI	263	Principles of Networking	3	CSCI 264	Data Base Management	3
CSCI	221	Data Structure	3	CSCI 266	e-Commerce	3
CSCI	231	Intro Computer Org	3		Technical Elective ²	3
		Technical Elective ²	3	CSCI 261	ASCS Project ³	3
					Citizenship ⁴	
			16			15

- 1. HU/SS must satisfy the college diversity requirements. History 101 and History 102 are suggested.
- Technical electives must be from the approved department list. Students that seek admisson to the BS Computer Science program should enroll in Calculus I and Calculus II for these electives.
- AS Computer Science Projects is held concurrently with the Senior Projects Course in the 4-year program. This is the capstone course for the program.
- 4. Refer to Community Service Forms for current citizenship requirements and documentation procedures.
- Laboratory Science (must include an 8 hour sequence chosen from CHEM 115, 116, or PHYS 201, 202, or PHYS 213, 214, or BIOL 111, 112. College Physics 201 and 202 are recommended.
- 6. The recommended web applications course to CSCI 266 DataBase Applications (Spring 2005). Currently, ELET 241 Fundamentals of Web Design will fulfill the requirement.

COMPUTERIZED DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

Program Description

The associate of science degree Computerized Drafting and Design Engineering Technology (ASDDET) is a two-year program that combines drafting, engineering, and computer skills. A graduate of this program would qualify for employment in most drafting positions. Because the program is easily adapted to a number of specialized areas, it offers the opportunity for employment in construction, mechanical, electrical, mining, civil, and other related industries. This program also makes it possible for graduates to more easily advance into a supervisory position in the drafting and design field.

The program is accredited by the Technology Accreditation Commission (TAC) of ABET, Inc.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Graduates can apply the following in regard to the drafting and basic design of mechanical components and systems:

- technical core topics in engineering materials, statics, and strength of materials
- technical specialties in the areas of manufacturing methods, applied drafting and design practice emphasizing mechanical components and systems, as well as fundamentals of descriptive geometry, orthographic projection, sectioning, tolerancing, dimensioning, and computer aided drafting and design, with skill in mechanical, electrical, civil, structural, architectural, piping, and sheet metal drafting
- physics principles having an emphasis in applied mechanics and added technical topics in physics consistent with the program orientation and having application to basic mechanical components
- · foundation mathematics to solve technical problems

Course outcomes are assessed by exit examinations in each course. Program outcomes are assessed in a designated 'capstone' course. General education outcomes are assessed by ACT WorkKeys.

Careers of Computer Drafting and Design Engineering Technology

Job titles of recent graduates have included: CAD Operator, Designer, Drafting Technician, Estimator/Detailer.

Plus-Two Baccalaureate Options

Engineering Technology or Industrial Technology

Advanced Placement Credit for High School/Vocational-Technical Center/College Programs:

High school level CAD drafting, mechanical, manufacturing, fluid power, welding, or industrial maintenance subjects are not necessary for entrance into the Computerized Drafting and Design Engineering Technology program. Beginning subjects are part of the program. The student who has completed vocational or EDGE courses, however, may receive advanced placement. Articulation agreements are in place with various vocational-technical centers. Advanced placement is also available to the student with prior college experience. Please check with the department head or division director for more information.

Computerized Drafting and Design Engineering Technology Associate of Science (ASCDDET)

		First Semester			Second Semester	
DRET	120	Drafting	2	CIET 114	Statics	3
ENGL	101	English Composition I	3	DRET 121	Drafting II	2
GNET	100	Technology Orientation	1	DRET 214	Computer Graphics	3
GNET	108	Basic Computer Appl.	3	ENGL 202	Bus. & Prof. Writing	3
HU/SS		Elective (HIST-101) ¹	3	MATH 114	Technical Trigonometry	3
MATH	113	Technical Algebra	3	PHYS 201	College Physics I	4
MEET	121	Mfg. Proc. I	3		0,	
		0				
			18			18
		Think Courses			Essentia Consectory	
CIET	115	I nird Semester	2	DDET 201	Fourth Semester	2
CIET	115	Strength of Materials	3	DREI 201	Electrical / Electronics. Drafting	2
DRET	202	Architectural Drafting	3	DRET 204	Structural Drafting	3
DRET		Tech. CAD Electives ²	6	DRET 216	Engr. Des. Graphics ⁴	3
HU/SS		Elective (HIST 102)3	3	MATH 117	Tech Calculus	3
MEET	225	Mech. Design I	3	PHYS 202	College Physics II	4
		0			Technical Elective ⁵	2-3
			18			17-18

1. Recommended to meet Cultural Diversity requirement and Humanities sequence as part of Core Curriculum Requirements. Must also complete Citizenship requirement.

2. Technical CAD Electives:

DRET	284	MicroStation	3
DRET	285	Land & Topographic Design	3
DRET	286	Parametric Modeling	3
DRET	287	Illustration & Animation	3
INDT	256	CAD/CAM Systems	3
DRET	212	Piping & Sheet Metal Drafting	3

3. HIST 102 or any HIST 300+ course

4. Capstone course

5. Must be approved by the advisor.

CORRECTIONS TECHNICAL STUDIES

Program Description

This program of study is a cooperative program offered through the Community and Technical College of West Virginia University Institute of Technology and the West Virginia Department of Corrections (WVDOC). In order to complete portions of this program of study, students must have successfully completed the WVDOC Academy training.

Prior to completion of the required courses listed in the following pattern sheet, candidates for graduation must request that the WVDOC provide certification of a total of 272 clock hours of training including the academy training as well as approved on-site training to the registrar of the college. Documentation is to affirm and certify that all instructional objectives, including time on task and competency levels, have been met. Eighteen (18) hours of college credit will be awarded at the time of graduation for successful completion of the academy approved training. This element is a requirement for graduation from this program.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established. This Correction program has been designed to prepare those employed in the field of corrections with knowledge and credentials need to advance their careers.

Upon completion of the program, the student will be able to:

- · Apply principles of correctional counseling in a corrections environment
- · Communicate effectively orally and in writing
- Apply computer skills to their day-to-day job
- Interact appropriately with diverse populations, including inmates, families and the general public.

Course outcomes are assessed by exit examinations in each course. General education outcomes are assessed by ACT WorkKeys.

Plus-two Baccalaureate Option

Public Service: Criminal Justice Administration Track

CORRECTIONS Technical Studies

Associate of Applied Science

General Education (22 credit hours)

ENGL 101	English Composition I	3
ENGL 202	Bus & Prof. Writing	3
MATH	Any college math	3
	100 level or above	
	Laboratory Science Elective	4
SOCI 101	Principles of Soc.	3
PSYC 221	General Psychology	3
OTEC 282	Interpersonal Skills	3

Technical Core (24 credit hours)

The following four courses are required:

SOCI 233	Juvenile Justice	3
SOCI 240	Correctional Counseling	3
SOCI 250	Community Based Corr.	3
SOCI 220	Special Topics	3

Students will also complete an additional 12 credit hours selected from the courses below.*

SOCI 222	Social Problems	3
SOCI 325	Criminology	3
BUAD 201	Business Law	3
CMIS 101	Fundamental Comp. App.	3
	(or equivalent)	
CMIS 163	Internet Applications	3
HUMS 210	Intro. to Social Welfare	3
HUMS 220	Public Administration	3
OTEC 287	Office Management	3
POLS 212	State and Local Govt.	3
SOCI 343	Cultural Diversity	3

Technical Occupational Specialty - 18 credit hours

Students will be granted 18 credit hours for successful completion of 272 clock hours of WVDOC Academy approval training. It is the responsibility of the student to request that the WVDOC provide certification of completion of the training to the Registrar of the college. Credit for the Academy approval training will be awarded only after all other requirements for graduation are completed.

* Students who have previously completed the Registered Apprenticeship Program in Corrections will be granted 12 credit hours in the Technical Core upon submitting documentation that the RAP was successfully completed to the Registrar of the College. Credit for the RAP will be awarded only after all other requirements for graduation are completed.

Students planning to continue into the BAS in Public Service: Criminal Justice Administration should choose courses required in that degree.

CULINARY APPRENTICESHIP OCCUPATIONAL DEVELOPMENT

Program Description

The Culinary Apprenticeship program is a cooperative program between the CTC at WVU Tech, Carver Career and Technical Education Center (CCTEC) in Malden, and the American Culinary Federation, West Virginia Chapter. The program is a U.S. Department of Labor approved apprenticeship training program.

Students entering this program must apply to both Carver Career and Technical Education Center, for completion of the culinary courses, and CTC at WVU Tech, for completion of the general education, business, and liberal arts related classes. The program of study features on-the-job training in a culinary facility recognized by the West Virginia Chapter of the American Culinary Federation.

Prior to completion of the required courses listed in the pattern sheet above, candidates for graduation must request that CCTEC provide to the registrar of the college, certification of successful completion of both the culinary coursework and the registered apprenticeship requirements. Eighteen and thirteen hours of credit respectively will be awarded at the time of graduation for successful completion of these components of the degree program. Completion of this program leads to an associate of applied science degree, a journey worker's certificate, and American Culinary Federation certification. Students are encouraged to complete the technical core components of their program of study at the same time they are completing the culinary classroom instruction and on-the-job training components of the program.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

The goal of the Occupational Development: Culinary Apprenticeship program is to provide future culinarians entering the workplace with comprehensive training in the practical and theoretical aspects of work required in this highly skilled profession. The chef of today needs to be a multi-talented individual who can meet the challenges of an executive in the food service industry. She/he must possess management supervisory skills as well as be a skilled culinary artisan.

Upon completion of the program, the student will be able to:

- Prepare foods, beverages, menus, and marketing strategies for a successful culinary enterprise
- · Apply management principles in a culinary environment
- · Use appropriate food storage and food handling technologies
- · Demonstrate culinary skills in an apprentice program

Course outcomes are assessed by exit examinations in each course. General education outcomes are assessed by ACT WorkKeys.

Culinary Apprenticeship Occupational Development

Associate of Applied Science

First Year - First Semester

Second Year - First Semester

ENGL	101	Sanitation Foods I Chef Apprenticeship I English Composition I	* * 3	MATH 121 MATH 124 OTEC 182	Garde Manager I Nutrition Chef Apprenticeship III Basic Math I or Finite Math or Business Math General Education Elective	* * 3
Fin ENGL HU/SS	202 Seco	ear - Second Semester Intro to Hospitality Industry Baking I Wait Staff Training Chef Apprenticeship II Bus & Prof. Writing ond Year - Summer Social Science Elective	* * 3 3	Seco	nd Year - Second Semester Garde Manager II Supervision and Training Chef Apprenticeship IV Lab Science	* * 4
Third **	Yea	r - First Semester Foods Purchasing & Storage Foods II Chef Apprenticeship V Technical Core Elective	* * 6	Thir	d Year - Second Semester Beverage Management Food Marketing Systems Culinary Elect./Specialization Chef Apprenticeship VI Technical Core Electives	* * * 3

* All courses designated with an * are taught by Carver Career and Technical Education Center (CCTEC). The CTC at WVU Tech will award up to 26 credit hours for successful completion of these courses, plus up to 13 credit hours for the required on-the-job training at the time of graduation. Award of this credit requires that CCTEC send to the registrar of the college a letter affirming and certifying that all instructional objectives, including time on task and competency levels, have been met and that the Registered Apprenticeship program has been completed.

** Students can select from the following list of courses to meet their 12-hour technical core elective requirements. Substitutions must be approved by the students academic advisor at Tech.

Computer Electives: **OTEC 185** Keyboarding 1 BSSU 101 Intro to Business 3 OTEC 280 Software Applications BSSU 201 Supervisory Management 3 3 (5-week mini-courses) **BSSU 204 Personnel Relations** - Database 1 BSSU 206 Marketing 3 - Spreadsheet 1 ACCT 201 Prin. of Accounting I 3 - Windows 1 ACCT 202 Prin. of Accounting II 3 - Word Processing 1 ACCT 245 Computerized Accounting 3 3 - Presentations 1 GNET 108 Basic Computer Appli 3 (PowerPoint) CMIS 162 Principles of Comp Info Sys 3 3 ELET 100 Computer Literacy ECON 231 Principles of Economics I

DENTAL HYGIENE

(Accredited by the American Dental Association Commission on Dental Accreditation)

Program Description

The program is designed to prepare students for a career in dental hygiene. The emphasis is placed on educating students for clinical dental hygiene practice. A dental hygienist is a preventive oral health professional licensed to provide educational, clinical, and therapeutic services to the public. The program, fully accredited by the American Dental Association Commission on Dental Accreditation, is normally two full academic years with 73 hours of credit course work and many hours of clinical practice. The Dental Hygiene program is designed to prepare a Dental Hygiene graduate to recognize and uphold the Dental Hygiene Code of Ethics; prepare a Dental Hygiene graduate dental hygienists utilizes special skills and judgment in performing clinical dental hygiene procedures and educating the public about preventive dentistry.

Application Requirements

The Dental Hygiene program is a limited enrollment program which admits one class each fall semester. An admissions committee selects candidates. To be considered for admission, applicants must first meet one of the two criteria:

- I. Minimum Requirements
- 1) Enhanced ACT composite (or SAT equivalent composite score 950) score of 20 or better.
- 2) High school grade point average of 3.0 or better on a 4.0 scale. Individuals who have completed high school requirements via GED must have a score of 40 on each of the GED tests or an average score of 45.
- 3) Completion of one unit of high school or college algebra. If the individual's math score on the enhanced ACT is 17 or less, then the individual must take and pass an elementary college math course.
- 4) Completion (with letter grade of B or higher) of a minimum of two high school science courses, including Chemistry.

OR

Students whose ACT scores do not meet the above outlined criteria may be considered for admission to the dental hygiene program by meeting the following requirements:

- 1) Have completed 12 hours college credit with a minimum grade of "C" in each course at an accredited institution of higher learning within the past five years. These courses must included Chemistry and Biology. (Developmental or remedial courses will not be considered).
- 2) Have completed one unit of high school or college algebra. If the individual's math score on the enhanced ACT is 17 or less, then the individual must take and pass an elementary college math course.
- 3) Have completed requirements for a high school diploma or met GED requirements (score of 40 on each test or achieved and average score of 45).
- 4) Have a college grade point average of 2.0 or higher on a 4.0 scale.

In addition, students must submit:

II. A one page, handwritten essay detailing reason for application to the program;

III. Two letters of recommendation for admission into the program.

Current students enrolled in the Community and Technical College at WVU Tech who meet the above guidelines will be given first consideration for admission. Students may wish to "shadow" in a dental office prior to application to gain first hand knowledge of the various roles of dental professionals. All transcripts, essays, recommendations and related materials are due in the admissions office by **January 31**st for consideration of fall admission.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, the mission of the dental hygiene program reflects the department goals to comprehensively:

- Prepare competent individuals for licensure and clinical practice of dental hygiene
- Prepare students to be lifelong learners
- Provide opportunities for patient care in the dental hygiene clinic, community health sites, rural clinics, and dental offices
- Prepare students for transfer to four-year programs of study
- Deliver formal education to adults

Program outcomes are assessed by exit examinations in each didactic course, by clinical performance, and performance on state, regional, and national licensure examinations. General education is assessed by the WorkKeys examination.

Careers in Dental Hygiene

Jobs are available for a dental hygienist in private dental practice, hospitals, clinics, institutions, public and private schools, and the armed forces. Dental hygienists are also employed as health educators in public health and school programs.

Plus-Two Baccalaureate Options

- WVU Tech Health Services Administration degree
- WVU Morgantown
- Baccalaureate in Dental Hygiene

Dental Hygiene

Associate of Science

		First Semester			Second Semester	
BIOL	233	Anatomy and Physiology	4	BIOL 240	Microbiology	4
CHEM	113	Fundamentals of Chemistry	*4	DENT 126	Head and Neck Anatomy	2
DENT	125	Dental Embryology,	3	DENT 134	Dental Hygiene II Clinic	3
		Histology & Anatomy		DENT 146	Dental Materials	2
DENT	132	Dental Hygiene I	5	DENT 154	Periodontics	2
DENT	141	Radiology	2	DENT 156	Pharmacology	2
DENT	152	Supportive Clinical Services	1	DENT 158	Special Patient Care	2
			19			17
		Summer **	1)			17
ENGL	101	English Composition I	3			
PSYC	221	General Psychology	3			
		, 6,				
			6			
	r	Third Semester			Fourth Semester	
DENT	151	Nutrition	2	DENT 239	Dental Hygiene Clinic IV	5
DENT	225	Pathology	2	DENT 258	Ethics & Practice Management	2
DENT	237	Dental Hygiene Clinic III	4	DENT 262	Community Health	3
DENT	240	Expanded Dental Hygiene		DENT 299	Special Topics in Dental Hygiene	(1)
		Functions	2	SOCI 101	Principles of Sociology	3
DENT	260	Dental Health Education	2			
ENGL	202	Business & Prof Writing	3			
OTEC	184	Computers for Health Care	3			
		Majors				
			18		13	(14)

* It is strongly recommended students complete CHEM 113 prior to entering the program.

**If the student so chooses, summer courses may be scheduled during regular semesters when available.

Graduates of WVU Tech's program in dental hygiene will meet the requirements to take the examination for licensure in all states including West Virginia.

To qualify for graduation, a student must earn a C or higher in all DENT-Dental Hygiene courses and all science courses including CHEM-113, BIOL-233, and BIOL-240. Also, in order to advance from one semester to the next, a student must earn a C or higher in each DENT-Dental Hygiene course.

If the student earns a D or F in a DENT-Dental Hygiene course, CHEM 113, BIOL 233, or BIOL 240, the student is automatically dismissed from the program and must apply for readmission. If readmitted, the student must retake the course failed, applying the "D and F repeat rule". The student who earns a D or F in any Dental Hygiene course may only repeat the course one time.

DIESEL TECHNOLOGY TECHNICAL STUDIES

Program Description

This program is designed to prepare graduates for positions as diesel technicians for both on and off highway equipment. The program has been developed in response to industry demand in conjunction with various consortium members. This program offers individuals the opportunity to complete the full outline of courses listed below on site at the CTC at WVU Tech or transfer diesel technology credit from various Career Technical Centers which offer similar programs. Credit may also be transferred from individuals completing industry training from Caterpillar, Komatsu, Cummins or Detroit. Individuals completing industry based training must confer with the program advisor for credit equivalency.

Program Objectives

In addition to learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon completion of this program, the student should be able to

- Understand electrical and hydraulic system principles and mechanical operations.
- Perform general maintenance and troubleshooting.
- Apply industry-based safety standards in the work environment.
- Apply principles of suspension and steering, brakes, drive trains, computer analysis, and climate control.

Course outcomes are assessed by examinations in each course. Program outcomes are assessed in a designated "capstone" course. General education outcomes are assessed by ACT WorkKeys.

Plus-two Baccalaureate Option

Technology Management

Types of jobs available:

Trucking Industry, Construction Technology, Strip Mining Industry, Railroad, Marine Industry, Timber Industry

Job Titles:

Mechanic, Shop Forman, Service Manager

Diesel Technology Associate of Applied Science

DISL DISL ELET GNET MATH	First Semester 110 Diesel Engines I 130 Intro to Hydraulics 171 Elec. Circuits & Machines I 100 Tech Orientation 113 Technical Algebra	4 4 1 3	DISL 111 DISL 120 ENGL 101 HU/SS GNET 108	Second Semester Diesel Engines II Suspension & Steering Compostion & Rhetoric Elective Basic Computer Applications	4 3 3 3
		16			16
DISL DISL PHYS INDT MEET	Third Semester240Brakes230Drive Train105Physical Science302Industrial Safety240Basic Fluid Power		ENGL 202 DISL 220 DISL 250 INDT 213 SOCI 101	Fourth Semester Business and Prof. Writing Electrical and Electronic Systems Preventive Maintenance Internship Principles of Sociology	$3 \\ 4 \\ 3 \\ 6 \\ 3 \\ \overline{10}$
		18			19

DIGITAL IMAGING TECHNOLOGY

Program Description

The Digital Imaging Technology in Printing Technology is designed to provide quality technical education to prepare digital graphic technicians for the rapidly changing printing industry. The student will receive training in all of the basic skills required of the printing industry and, upon completion of the one-year certificate, should be able to continue into the two-year Printing Technology program. The certificate program is also designed t continue into the two-year Printing Technology program. An associate degree graduate typically finds employment in a junior supervisory capacity directly responsible to the plant manager or supervisor.

Program Objectives

Upon completion of the one-year certificate program, the student will be able to-

- create, design, and prepare copy for publication
- utilize graphic design and desktop publishing software
- apply appropriate color theory to design and copy

Program outcomes are assessed by exit course examinations and performance on laboratory projects.

Job Titles

Typical job titles include Digital Imaging Technician; Desktop Publisher

One-Plus-One Associate Option

Printing Technology, AS

Plus-two Baccalaureate Option

Printing Management (upon completion of AS degree)

Digital Imaging Technology

		First Semester			Second Semester	
ARTS	116	Intro to Graphic Design	3	PRNT 134	Graphics Creation	1
PRNT	111	Introduction to Printing	4	PRNT 135	Page Layout II	1
PRNT	114	Intro to Computers	1	PRNT 136	Acrobat/PDFs Basics	1
PRNT	115	Text and Type	1	PRNT 141	Color Models and Usage	1
PRNT	116	Intro to Page Layout	1	PRNT 142	Intro to PhotoShop	1
PRNT	125	Digital Photography	1	PRNT 143	Color Workflow & Mgt	1
PRNT	126	Electronic Image Capture	1	PRNT 235	Database for Printers	1
PRNT	127	Image Reproduction	1	PRNT 241	Newspaper Operations	2
PRNT	245	Screen Printing	3	PRNT 299	Special Projects (Design)	3
		-			Restricted Electives*	3
			16			15

*See Advisor, or Chair, for approved courses.

ELECTRICAL ENGINEERING TECHNOLOGY

Program Description

The associate of science degree Electrical Engineering Technology (ASEET) is a two-year program that is geared to meet the demands of local industries for highly qualified engineering technicians in electronics, power generation and distribution, communications, instrumentation, mining, and other related fields. To meet these demands, basic and advanced courses in electricity, electronics, communications, and electrical machinery are incorporated into the program. In addition, students are encouraged to take technical electives in fields that are of particular interest to them. In this way, a student can prepare for a career in specific industry by choosing technical elective courses offered by other engineering technology programs and selected other departments on campus. The program is accredited by the Technology Accreditation Commission (TAC) of ABET, Inc.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Graduates of the program must demonstrate knowledge and hands-on competence appropriate to the goals of the program in:

- the application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers to the building, testing, operation, and maintenance of electrical/electronic systems
- physics principles having an emphasis in applied mechanics and added technical topics in physics having application to electrical systems and processes
- · foundation mathematics to solve technical problems

Specific learner outcomes and objectives in foundation education, technical preparation, and application and professional practice are available in the Engineering Technology Division Office. Course outcomes are assessed by exit examinations in each course. Program outcomes are assessed in a designated 'capstone' course. General education outcomes are assessed by ACT WorkKeys.

Careers in Electrical Engineering Technology

The program prepares graduates with the technical and managerial skills necessary to enter careers in designing, application, installing, manufacturing, testing, operating and/or maintaining electrical/ electronic systems. Graduates of the program typically have strengths in the building, testing, operation, and maintenance of existing electrical systems.

Job titles of recent graduates have included:

Electronic Technician, Management Associate, Electrical Technician, Engineering Technician, Engineering Test Technician.

Plus-Two Baccalaureate Option

Completion of this program also qualifies the graduate to enter the plus-two Bachelor of Science programs in Electronic Engineering Technology, Engineering Technology, or Industrial Technology at WVU Tech.

Advanced Placement Credit for High School/Vocational-Technical Center/College Programs

High school level electronic, electrical, or computer-oriented subjects are not necessary for entrance into the Electrical Engineering Technology program. Beginning subjects are part of the program. The student who has completed vocational or EDGE courses, however, may receive advanced placement. Articulation/EDGE agreements are in place with various vocational-technical centers. Advanced placement is also available to the student with prior college experience. Please check with the department head or division director for more information.

Electrical Engineering Technology

Associate of Science

		First Semester			Second Semester	
ENGL	101	English Composition I	3	MATH 117	Technical Calculus	3
MATH	113	Technical Algebra	3	PHYS 201	College Physics I	4
MATH	114	Technical Trigonometry	3	ELET 172	AC Circuit Analysis	4
GNET	100	Technology Orientation	1	ELET 181	Analog Devices I	4
ELET	171	DC Circuit Analysis	4	ENGL 202	Bus & Prof Writing	3
GNET	108	Basic Computer Applications	3		-	
			17			18
		Third Semester			Fourth Semester	
PHYS	202	College Physics II	4	DRET 201	Electrical & Eln. Drafting	2
DRET	120	Drafting I	2	ELET 275	Power Syst & Industrial Devices 2	2 4
ELET	282	Analog Devices II	4	ELET 290	Digital Devices	4
ELET	292	Comm. Systems I	4		Technical Electives ³	4-5
HU/SS		Elective (HIST-101) ¹	3	HU/SS	Elective (HIST-102) ¹	3
			17			17-18

1. Recommended to meet Cultural Diversity requirement and Humanities sequence requirement as part of Core Curriculum Requirements. One three-hour must meet the Cultural Diversity requirement. Must also complete Citizenship requirement.

2. Capstone course

3. Must be approved by the advisor.

ELECTRO-MECHANICAL SPECIALIST

Program Description

In response to the increased demand in industry for individuals who have a background in electrical and mechanical systems, the Electrical and Mechanical Engineering Technology departments have received approval to offer a one-year certificate program named the ElectroMechanical Specialist. Students will acquire the necessary experience in a range of disciplines that are required in today's rapidly evolving industry.

Program outcomes:

At the conclusion of this sequence of study the individual would be prepared to deal with various types of equipment and issues, including: mechanical analysis, hydraulic systems & analysis, basic maintenance principles, familiarity with National Electrical Code, PLC ladder logic-troubleshooting and design, power systems analysis, and electrical circuit analysis.

One-Plus-One Associate Option

Upon completion of this Certificate, the student will have earned no less than the following credits towards the specified Associate of Science Degree programs:

Credits Earn	ed Associate of Science in:
17	Electrical Engineering Technology
30	Mechanical Engineering Technology
17	Civil Engineering Technology
20	Computerized Drafting and Design Engineering Technology

Plus-two Baccalaureate Option

(Dependent on Associate of Science degree pursued. See program descriptions elsewhere in catalog.)

Electro-Mechanical Specialist

Certificate

MATH-113	Technical Algebra	3
MATH-114	Technical Trigonometry	3
DRET-120	Drafting I	2
CIET-114	Statics	3
CIET-115	Strength of Materials	3
MEET-240	Fluid Power	3
MEET-225	Mechanical Design I	3
INDT-210	Plant & Equipment Maintenance	3
ELET-171	DC Circuit Analysis	4
ELET-274	Electrical Control Systems	3
ELET-236	Power & PLCs	3

ELECTRONIC ENGINEERING TECHNOLOGY

Program Description

The Bachelor of Science in Electronic Engineering Technology (BSEET) program is a plus-two program that builds on two-year Electrical or Electronics Engineering Technology programs. The degree is awarded through WVU Tech. An associate degree in Electrical or Electronics Engineering Technology, meeting the requirements established by the division, is necessary for entrance into the program. The 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 computer applications. Course offerings are designed to be consistent with the evolution of energy-related and computer-based industrial needs of the state and region.

Graduates from the CTC at WVU Tech's A.S. Electrical Engineering Technology may enter directly into the program as juniors. Graduates of associate degree Electrical/Electronic Engineering Technology programs from other institutions 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 upper division courses in the curriculum.

All students must meet the Core Curriculum requirements for graduation. A minimum of 11 hours of credit in Chemistry, Physics, and/or Biology is required to receive the BSEET degree. This must include a two -course laboratory science sequence. A minimum of 40 semester hours of upper-division courses is required. Graduates must also have a computer programming course using a technical language.

The B.S. Electronic Engineering Technology program is accredited by the Technology Accreditation Commission (TAC) of ABET, Inc.

Program Objectives:

In addition to the learning outcomes set forth in the general education core curriculum for the baccalaureate degree, specific outcomes for this program have been established.

- Graduates of the baccalaureate degree program must demonstrate the ability to:
- analyze, design, and implement control systems, instrumentation systems, communications systems, computer systems, or power systems
- apply project management techniques to electrical/electronic(s) systems
- utilize statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of electrical/electronic(s) system
- · apply advanced mathematics to solve technical problems

More specific learner outcomes and objectives in foundation education, technical preparation, and application and professional practice are available in the Engineering Technology Division Office. Course outcomes are assessed by exit examinations in each course. Program outcomes are assessed in a designated 'capstone' course.

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 on associate degree programs in engineeringoriented programs at other institutions and wish to continue their studies toward a bachelor of science degree may do so at WVU Tech. Transfer agreements have been established with regional institutions offering associate degree programs. For more information, contact the Division Director of Engineering Technology/Industrial Technology.

Electronic Engineering Technology Bachelor of Science (BSEET)

CHEM	115	Fifth Semester Chemistry	4	ELET 337	Sixth Semester Comm. Systems II Adv. Comp. Appl. or MCMT 286	4
матн	315	OF BIOL-111 BIOlogy 1 Advanced Tech Math	4	GNET 308	Adv. Comp. Appl. or MGM1-380 261/300+ or Math Elect	3
ELET	315	Electronic Meas & Inst	4		Tech Spec Elective	3
ENGL	102	English Composition II ²	3	HU/SS	Elective (General) ⁴	3
HU/SS		Elective (ECON-231) ³	3	HU/SS	Elective (ECON-232) ³	3
			18			16
ELET ELET ELET GNET GNET	410 420 436 410 412	Geventh Semester Control Systems Tech Micropro & Digital Syst Power Systems & PLCs "C" Prog. for Tech Project Management	3 4 4 3 3	ELET 426 HU/SS GNET 490	Eighth Semester Microprocessor-Based Data Acqui. & Ctrl. Technical Spec. Electives ⁵ Elective ⁶ Elective (General) ⁴ Senior Seminar & Project ⁷	4 3 3 2
			17			16

- A minimum of 11 hours of credit in Chemistry, Physics and/or Biology is required to receive the BSEET degree. This
 must include a two-course laboratory science sequence.
- 2. Students entering the program with an ENGL 102 equivalent course should take ENGL 305.
- 3. ECON 231-232 Principles of Economics sequence recommended for Social Science Electives.
- One three-hour course must meet the Cultural Diversity requirements. See Core Curriculum Requirements. Suggested courses include ECON 337 and ECON 345. Must also complete Citizenship requirement.
- 5. To be approved by department advisor. See advisor for approved electives. One technical elective will be selected from the following courses: INDT-384, MATH-261, MEET-435, ELET-321, ELET-322, ELET-421, ELET-422 or any CSCI 200 + or ELCE 300 + level course approved by both departments. Exceptions require department head consent. Other technical specialty electives may be selected from the other ELET courses (except 274), or courses in other Engineering Technology fields.
- Must be approved by student's advisor. One open elective for a minimum of three hours credit. May be a technical specialty elective.
- 7. Capstone course.

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ENGINEERING TECHNOLOGY

Program Description

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 degree is awarded through WVU Tech. 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. Using the general curriculum shown above, a program of study can be designed to meet the student's background and career interests.

The student, with the assistance and approval of the Director of Engineering Technology/ Industrial Technology, can select technical specialty elective courses for the program chosen. This is normally done when entering the program. Selected technical specialty courses can be taken in mechanical, civil, electrical/electronics, and drafting and design 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 included.

All students must meet the requirements of the institution and the Core Curriculum for graduation. A minimum of 11 hours of credit in Chemistry, Physics, and/or Biology is required to receive the BSET degree. This must include a two-course laboratory science sequence. Also 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

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the baccalaureate degree, specific outcomes for this program have been established.

Baccalaureate degree graduates apply the following in regard to the analysis, design, development, implementation, and/or oversight of systems and processes consistent with the technical orientation of the program:

- technical core topics such as engineering materials, statics, dynamics, strength of materials, fluid power or fluid mechanics, thermodynamics, and electrical power or electronics.
- at least three technical core or technical specialty areas having added technical depth, such as: manufacturing processes, mechanical design, computer aided engineering graphics, engineering materials, product design, fluids, thermal sciences, robotics, industrial technology, electro-mechanical devices and controls, and/or industrial operations
- physics principles having an emphasis in applied mechanics, added technical topics in physics consistent with the program orientation, and basic inorganic chemistry principles, having application to systems and processes
- · advanced mathematics to solve technical problems

Course outcomes are assessed by exit examinations in each course. Program outcomes are assessed in a designated 'capstone' course.

Careers in Engineering Technology

Baccalaureate degree graduates are typically involved in the analysis, design, development,

implementation, and/or oversight of more advanced technical systems and processes. Job titles of recent graduates have included: Service Representative, Engineering Assistant.

Plus-Two Baccalaureate Transfer Options

Students who have completed course work or associate degree programs in engineeringoriented programs at other institutions and wish to continue their studies toward a bachelor of science degree may do so at WVU Tech. Transfer agreements have been established with regional institutions offering associate degree programs. For more information, contact the Division Director of Engineering Technology/Industrial Technology at WVU Tech.

Engineering Technology* Bachelor of Science

MATH ENGL Emphasis	Fifth Semester Laboratory Science Elective ¹ 315 Advanced Tech Math 102 English Composition II ² Tech Spec. Electives ³	$\begin{array}{c} 4\\ 4\\ 3\\ 6\\ \hline 17 \end{array}$	GNET 308 HU/SS Emphasis	Sixth Semester Adv. Comp. Appl. or MGMT 386 or 261/300 Math Elective Elective (ECON 231) ⁴ Tech Spec. Electives ³	$3 \\ 3 \\ 9 \\$
HU/SS INDT GNET GNET Emphas	Seventh Semester Elective (ECON 232) ⁴ 302 Industrial Safety 410 "C" Prog. for Tech 412 Project Management is Tech Spec. Electives ³	$ \begin{array}{r} 3 \\ 3 \\ 3 \\ 6 \\ - \\ 18 \end{array} $	HU/SS Emphasis GNET 490	Eighth Semester Electives (General) ⁵ Tech Spec. Electives ³ Senior Seminar & Project ⁶	6 8 2

* Students choosing to double major in BSET programs must have at least 18 hours different between the two degrees.

 A minimum of 11 hours of credit in laboratory science (Physics, Chemistry, Biology, Geology) is required to receive the BSET degree. This must include a two-course sequence.

2. Students entering the program with an ENGL 102 equivalent course should take ENGL 305.

3. Subject to the approval of the Director of the Engineering Technology/Industrial Technology Division.

4. ECON-231-232 Principles of Economics sequence recommended for Social Science Electives.

See Core Curriculum Requirements. One three-hour course must meet the Cultural Diversity requirement. Must also complete Citizenship requirement.

6. Capstone course.

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ENGINEERING TECHNOLOGY - CIVIL

Program Description

The Bachelor of Science in Engineering Technology - Civil (BSET-C) is a plus-two program that builds on and complements associate degrees earned in Civil Engineering Technology areas. The degree is awarded through WVU Tech. 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 from the CTC at WVU Tech's A.S. Civil Engineering Technology may enter directly into the program as juniors. Graduates of associate degree Civil (Engineering) Technology programs from other institutions 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.

A program of study can be designed to meet the student's background and career interests. Students selecting the Civil emphasis must have courses in surveying, structural steel and concrete design, soil and foundations, hydrologic systems, highways, and materials science. Typical technical specialty electives are identified for the emphasis and selected courses may be taken in mechanical, civil, electrical/electronics, drafting and design, and general engineering technology; as well as civil engineering and industrial technology.

All students must meet the requirements of the institution and the Core Curriculum for graduation. A minimum of 11 hours of credit in Chemistry, Physics, and/or Biology is required to receive the BSET degree. This must include a two-course laboratory science sequence. 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.

The B.S. Engineering Technology-Civil program is accredited by the Technology Accreditation Commission (TAC) of ABET, Inc.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the baccalaureate degree, specific outcomes for this program have been established.

Baccalaureate degree graduates apply the following in regard to the analysis, design, development, implementation, and/or oversight of civil systems and processes:

- technical core topics in engineering materials, statics, dynamics, and strength of materials
- the following technical specialty areas: surveying, structural steel and concrete design, soil and foundations, hydraulics, highways, codes/contracts/cost analysis, and analysis and design of civil and environmental systems and processes
- physics principles having an emphasis in applied mechanics, added technical topics in physics consistent with the program orientation, and basic inorganic chemistry principles, having application to civil systems and processes
- · advanced mathematics to solve technical problems

Course outcomes are assessed by exit examinations. Program outcomes are assessed in a designated 'capstone' course.

Careers in Engineering Technology – Civil

Baccalaureate degree graduates are typically involved in the analysis, design, development, implementation, and/or oversight of more advanced civil systems and processes. Job titles of
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recent graduates have included: Assistant Project Engineer, Engineering Technician, Party Chief, Assistant Field Engineer, Engineer.

Plus-Two Baccalaureate Transfer Options

Students who have completed course work or associate degree programs in engineeringoriented programs at other institutions and wish to continue their studies toward a bachelor of science degree may do so at WVU Tech. Transfer agreements have been established with regional institutions offering associate degree programs. For more information, contact the Division Director of Engineering Technology/Industrial Technology at (304) 442-3098.

Engineering Technology - Civil* Bachelor of Science

MATH ENGL MEET CIET	Fifth Semester Laboratory Science Elective 1315Advanced Tech Math102English Composition II 2316Dynamics 3382Environmental Engr Tech	4 3 3 3	CIET 325 CIET 355 HU/SS CIET 330	Sixth Semester Laboratory Science Elective ¹ Codes, Contracts, Cost Analysis ⁴ Construction Estimating or 261/300 Math Elective Elective (HIST 102) ⁵ Tech Spec. Elective ⁶ Comp Appl in Hydraulics/Hydro	3 3 3 3 3 3 3
		17			18
HU/SS GNET CIET INDT DRET	Seventh Semester Elective (General) ⁷ 410 "C" Prog for Tech or GNET 311 320 Construction Methods & Equip. 302 Industrial Safety 314 Computer Graphics	3 3 3 3 - 15	HU/SS HU/SS INDT 420 GNET 490	Eighth Semester Electives (General) ⁷ Elective (ECON 232) ⁵ Construction Technology ³ Tech Spec Elect ⁶ Senior Seminar & Project ⁹ Elective ¹⁰	3 3 3 2 3

- * Students choosing to double major in BSET-Civil and Environmental must have at least 18 hours different between the two degrees.
- A minimum of 11 hours of credit in laboratory science (Physics, Chemistry, Biology, Geology) is required to receive the BSET- Civil degree. This must include a two-course sequence.
- 2. Students entering the program with an ENGL 102 equivalent course should take ENGL 305.
- 3. GENE-122 Dynamics may be substituted.
- ECON 401 Managerial Economics may be taken as a General Elective and another Technical Specialty Elective substituted for CIET 325.
- Must complete Humanities and Social Sciences sequences. HIST-101-102 recommended for Humanities sequence, ECON 231-232 recommended for Social Science sequence.
- 6. Subject to approval of the advisor. Selected Civil Engineering courses (CVLE-212, 321, 342, 425, 431, 432, 435, 444) may be taken with the approval of both the advisor and the College of Engineering, if prerequisites are met. Also recommended are PHSC-312 and MEET 435. A minimum of 40 semester hours of upper-division courses is required.
- 7. See Core Curriculum Requirements. One three-hour course must meet the Cultural Diversity requirement. Must also complete Citizenship requirement.
- 8. INDT 360 Wood Technology may be substituted.
- 9. Capstone course.
- 10. To be approved by advisor. Open elective, may be a technical specialty elective.
- Typical Technical Specialty Electives (in addition to selected Civil Engineering courses)
 - DRET 315 Advanced CAD
 - ELET 371 Elect Circuits & Machines I
 - MATH 261 Elementary Differential Equations
 - MEET 435 Energy Conversion Systems
 - PHSC 312 Geology

Note: Students selecting this program must have or complete courses in surveying, structural steel and concrete design, soil mechanics, hydrologic systems, and materials science in addition to those courses listed above.

ENGINEERING TECHNOLOGY-ENVIRONMENTAL

Program Description

The Bachelor of Science in Engineering Technology - Environmental (BSET-E) is a plustwo program that builds on and complements associate degrees earned in a variety of Environmental Science and Engineering Technology areas. The degree is awarded through WVU Tech. 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 have a course in hydrologic systems.

All students must meet the requirements of the institution and the Core Curriculum for graduation. A minimum of 11 hours of credit in Chemistry, Physics, and/or Biology is required to receive the BSET degree. This must include a two-course laboratory science sequence. 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

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the baccalaureate degree, specific outcomes for this program have been established.

Baccalaureate degree graduates apply the following in regard to the analysis, design, development, implementation, and/or oversight of environmental systems and processes:

- technical core topics related to fluids, environmental chemistry and processes, applied thermodynamics, geology, and biology
- technical specialty areas of environmental analysis and systems design, physical and organic chemistry, and microbiology
- physics principles having an emphasis in applied mechanics, added technical topics in physics/chemistry/biology consistent with the program orientation, and having application to environmental systems and processes
- · advanced mathematics to solve technical problems

Course outcomes are assessed by exit examinations. Program outcomes are assessed in a designated 'capstone' course.

Careers in Engineering Technology - Environmental

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, Environmental Specialist. **Plus-Two Baccalaureate Transfer Options**

Students who have completed course work or associate degree programs in engineeringoriented programs at other institutions and wish to continue their studies toward a bachelor of science degree may do so at WVU Tech. Transfer agreements have been established with regional institutions offering associate degree programs. For more information, contact the Division Director of Engineering Technology/Industrial Technology.

Engineering Technology - Environmental Bachelor of Science

CIET MATH ENGL INDT	382 315 102 302	Fifth Semester Laboratory Science (CHEM 115) ¹ Environmental Engr Tech Advanced Tech Math English Composition II ² Industrial Safety	4 3 4 3 3	PHSC 312 MGMT386 HU/SS CIET 325	Sixth Semester Laboratory Science (CHEM 116) ¹ Geology Business Stats, GNET 308, or MATH 261/300 Elective (ECON 231) ⁴ Codes, Cont & Cost Analysis ³	4 3 3 3 3
			17			16
	S	eventh Semester			Eighth Semester	
GNET	410	"C" Prog for Tech		BIOL 240	Microbiology ⁵	4
		or GNET 3115	3	GNET 490	Senior Seminar & Project	2
HU/SS		Elective (ECON 232) ⁴	3	HU/SS	Electives (General) ⁶	3
HU/SS		Elective (General) ⁶	3	MEET 435	Energy Conversion Systems ⁸	3
CHEM	233	Organic Chemistry I ⁵	3		Tech Spec Elect (CVLE)	3
CHEM	235	Organic Chemistry Lab. I ⁵	1		(or MECE 332)	
		Tech Spec Elect ⁷	3		Tech Spec Elect	3
			16			10
			10			18

Students choosing to double major in BSET-Environmental and Civil must have at least 18 hours different between the two degrees.

 Fundamentals of Chemistry (CHEM 115-116) is recommended. If the student has already had Chemistry, Biology courses are recommended.

- Students entering the program with an ENGL-102 equivalent course should take ENGL 305.
- ECON 401 Managerial Economics may be taken as a General Elective and another Technical Specialty Elective substituted for CIET 325.
- 4. ECON 231-232 Principles of Economics sequence recommended for Social Science Electives.
- 5. If students have had an equivalent course, other courses may be substituted.
- 6. See Core Curriculum Requirements. One three-hour course must meet the Cultural Diversity requirement. Must also complete Citizenship requirement.
- Typical Technical Specialty Electives: Selected CVLE (421, 431, 432, 435) courses may be taken with the approval of both the division and the College of Engineering if prerequisites are met.
- 8. MECE-332 Thermodynamics may be substituted.

Typical Technical Specialty Electives:

- BIOL 111/112 General Biology
 - BIOL 466 Ecology
 - CHEM 215 Analytical Chemistry
 - CHEM 234 Organic Chemistry II
 - CHEM 236 Organic Chemistry Lab. II
 - CIET 222 Soils & Foundations
 - CIET 230 Hydrologic Systems
 - DRET 314 Computer Graphics
 - ELET 371 Elect Circuits & Machs I
 - GENE 331 Fluid Mechanics
 - MEET 316 Dynamics
 - MGMT 381 Fund of Management

Note: Students selecting this program must have or complete a course in hydrologic systems, in addition to those courses listed above.

ENGINEERING TECHNOLOGY - MECHANICAL

Program Description

The Bachelor of Science in Engineering Technology - Mechanical (BSET-M) is a plus-two program that builds on and complements associate degrees earned in Mechanical Engineering Technology. The degree is awarded through WVU Tech. 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 Mechanical Engineering Technology program with appropriate course work, including physical sciences and mathematics (through analytic geometry with calculus).

Graduates from the CTC at WVU Tech's A.S. Mechanical Engineering Technology may enter directly into the program as juniors. Graduates of associate degree Mechanical (Engineering) Technology programs from other institutions 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.

Using the general curriculum shown below, a program of study can be designed to meet the student's background and career interests. Students selecting the Mechanical emphasis must have courses in statics, strength of materials, fluid power, electrical circuits and machines, and mechanical design. Typical technical specialty electives to meet basic program requirements are identified for the emphasis. Other selected courses may be taken in mechanical, civil, electrical/electronics, and drafting and design engineering technology, as well as mechanical engineering and industrial technology. Also, some mathematics, science, and management courses may be included.

All students must meet the requirements of the institution and the Core Curriculum for graduation. A minimum of 11 hours of credit in Chemistry, Physics, and/or Biology is required to receive the BSET degree. This must include a two-course laboratory science sequence. 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.

The B.S. Engineering Technology-Mechanical program is accredited by the Technology Accreditation Commission (TAC) of ABET, Inc.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the baccalaureate degree, specific outcomes for this program have been established.

Baccalaureate degree graduates apply the following in regard to the analysis, design, development, implementation, and/or oversight of mechanical systems and processes consistent with the technical orientation of the program:

- technical core topics in engineering materials, statics, dynamics, strength of materials, fluid power or fluid mechanics, thermodynamics, and electrical power or electronics.
- at least three of the following technical core or technical specialty areas having added technical depth: manufacturing processes, mechanical design, computer-aided engineering graphics, engineering materials, product design, fluids, thermal sciences, electromechanical devices and controls, and/or industrial operations.
- physics principles having an emphasis in applied mechanics, added technical topics in physics consistent with the program orientation, and basic inorganic chemistry principles, having application to mechanical systems and processes.
- · advanced mathematics to solve technical problems.

Course outcomes are assessed by exit examinations in each course. Program outcomes are

assessed in a designated 'capstone' course.

Careers in Engineering Technology – Mechanical

Baccalaureate degree graduates are typically involved in the analysis, design, development, implementation, and/or oversight of more advanced mechanical systems and processes. Job titles of recent graduates have included: Mechanical Engineering Technician, Mechanical Designer, Engineering Draftsman, Production Engineer.

Plus-Two Baccalaureate Transfer Options

Students who have completed course work or associate degree programs in engineeringoriented programs at other institutions and wish to continue their studies toward a bachelor of science degree may do so at WVU Tech. A number of transfer agreements have been established with regional institutions offering associate degree programs. For more information, contact the Division Director of Engineering Technology/Industrial Technology.

Engineering Technology - Mechanical Bachelor of Science

Fifth Semester			Sixth Semester	
412 Project Management	3	PHYS 202	College Physics II1	4
315 Advanced Tech Math	4	GNET 308	Adv Comp Appl, GNET 311, or	
102 English Composition II ²	3		MATH 261/300+	3
314 Computer Graphics	3	INDT 308	Automated Manufacturing	3
316 Dynamics (or GENE 242) ³	3	INDT 354	Industrial Materials ⁴	3
		MEET 435	Energy Conversion Systems ⁵	
			(or MECE 332)	3
	16			16
	10			10
Seventh Semester			Eighth Semester	
Elective (ECON 231) ⁶	3	HU/SS	Elective (ECON 232) ⁶	3
Elective (General) ⁷	3	HU/SS	Elective (General) ⁷	3
410 "C++" Programming	3	INDT 410	Plant & Equipment Maintenance	3
302 Industrial Safety	3	GNET 490	Senior Seminar & Project 9	2
Tech Spec. Elective ⁸	6		Technical Spec Elect ⁸	3
*			Elective	3
	Fifth Semester 412 Project Management 315 Advanced Tech Math 102 English Composition II ² 314 Computer Graphics 316 Dynamics (or GENE 242) ³ Seventh Semester Elective (ECON 231) ⁶ Elective (General) ⁷ 410 "C++" Programming 302 Industrial Safety Tech Spec. Elective ⁸	Fifth Semester412Project Management3315Advanced Tech Math4102English Composition II 2 3314Computer Graphics3316Dynamics (or GENE 242) 3 3IfSeventh Semester Elective (ECON 231) 6 Elective (General) 7 3410"C++" Programming3302Industrial Safety3Tech Spec. Elective 8 6	Fifth Semester412Project Management3PHYS 202315Advanced Tech Math4GNET 308102English Composition II 2 3314Computer Graphics3INDT 308316Dynamics (or GENE 242) 3 3INDT 354Indext 435Indext 435Indext 435Indext 435General 7 3HU/SSElective (ECON 231) 6 HU/SSElective (General) 7 3INDT 410302Industrial Safety3GNET 490Tech Spec. Elective 8 6	Fifth SemesterSixth Semester412Project Management3PHYS 202College Physics II1315Advanced Tech Math4GNET 308Adv Comp Appl, GNET 311, or102English Composition II 2 3INDT 308Automated Manufacturing316Dynamics (or GENE 242) 3 3INDT 354Industrial Materials 4 MEET 435Energy Conversion Systems 5 (or MECE 332)16Elective (ECON 231) 6 Elective (General) 7 3HU/SS410"C++" Programming3INDT 410302Industrial Safety3GNET 490302Industrial Safety6Technical Spec Elect 8 Elective

 A minimum of 11 hours of credit in laboratory science (Physics, Chemistry, Biology, Geology). This must include a twocourse sequence in Physics and at least one Chemistry course.

- 2. Students entering the program with an ENGL 102 equivalent course should take ENGL 305.
- 3. GENE 242 Dynamics may be substituted.
- 4. CIET 131 Construction Material or MECE 410 Materials Engineering may be substituted with approval.
- 5. MECE 332 Thermodynamics may be substituted.
- Must complete Humanities and Social Sciences sequences. HIST 101-102 recommended for Humanities sequence. ECON 231-232 Principles of Economics recommended for Social Science.
- See Core Curriculum Requirements. One three-hour course must meet the Cultural Diversity requirement. Must also complete Citizenship requirement.
- 8. Typical Technical Specialty Electives: Electives should be selected upon entering the program. 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, thermal sciences, electro-mechanical devices and controls, or industrial operations. Selected MECE courses (304, 332, 334, 408, 410) may be taken with the approval of both the Division and the College of Engineering, if prerequisites are met.

ENTREPRENEURSHIP

Program Description

The one-year certificate program in entrepreneurship is designed to provide graduates with basic business skills that are essential in starting up a small business. Students will acquire basic competencies in accounting, economics, management, and marketing. Individuals who have participated in the Small Business Development seminars and workshops may petition for one to three hours of credit in the entrepreneurship elective category.

Options for the certificate program graduate include exiting and establishing a small business or continuation into one of the business technology associate degree programs. A seamless progression into the plus-two technology management program is available upon completion of the associate degree.

Program Objectives

Upon completion of this program, the student will be able to:

- · Apply basic accounting principles in a small business setting
- · Manage personnel and office functions in a small business setting
- · Communicate effectively with customers and service providers

Assessment will occur through exit examinations and/or projects in each course.

One-plus-one Option

Business Technology, A.S.

Plus-two Baccalaureate Option

Technology Management (upon completion of A.S. degree)

Entrepreneurship Certificate

		First Semester			Second Semester	
ACCT	201	Prin. of Accounting	3	ACCT 202	Prin. of Accounting	3
CMIS	101	Fund of Comp. Applications	3	ENGL 202	Bus. & Prof. Writing	3
ECON	231	Prin. of Economics	3	OTEC 287	Office Management	3
ENGL	101	English Composition I	3	BSSU 202	Business Finance	3
BSSU	204	Personnel Relations	3	MGMT310	Small Business Mgmt.	3
BSSU	206	Marketing	3	Elective	Entrepreneurship	3
			18			18

GENERAL STUDIES

Program Description

The General Studies degree program is designed for students having an interest in a wide array of subjects including the arts, humanities, social sciences, mathematics, physical sciences, or related fields. The degree allows the design of a curriculum for both the personal development and the vocational needs of the student. This degree will be of interest to students who: (1) are not seeking an associate or baccalaureate degree in a specific career field, but who wish to broaden their knowledge and skills through a flexible curriculum; (2) are employed in positions where no specific college training is required but two years of college work would provide the credential needed for advancement; (3) are interested in completing the general studies degree program to later transfer to a four year program, such as Health Services Administration at this institution or to degree programs at other four-year institutions; or (4) desire an associate degree but also want maximum freedom in course selection.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon successful completion of the program, graduates will be able to:

- Transfer to baccalaureate programs at any institution.
- Seek employment in the individually designed program of study.

Course outcomes are assessed by exit examinations in each course. General education outcomes are assessed by ACT WorkKeys.

Careers in General Studies

Numerous titles depending on application.

General Studies

Associate of Science

GNET 102	Career Exploration	2
ENGL 101	English Composition I	3
ENGL 102	English Composition II	3
ENGL 202, 3	342 or SPCH 250,	3
CMIS 101, 0	OTEC 184, 187 or equivalent	3
MATH	Math Electives (100 level or a	bove)3
	*HU/SS Electives	6
	**Lab Science	4
	Electives	37
		64

* It is recommended that students select a six hour sequence, one course must meet the Cultural Diversity Core Curriculum requirement.

** Those choosing to take more than one science course are advised to take an eight-hour sequence.

*** 24 credit hours of the total credit hours required for the degree must be 200 level or higher.

Plus-Two Baccalaureate Options

- Health Service Administration
- Industrial Technology
- · Careful choice of courses will allow seamless transition into most baccalaureate programs

General Studies Associate of Science

Public Service Option

		First Semester			Second Semester	
GNET	100	Tech Orientation	1	ENGL 102	English Composition II	3
ENGL	101	English Composition I	3	POLS 212	State and Local Government	3
POLS	102	American Federal Government	3	SPCH 250	Effective Speech	3
MATH	124	Finite Math	3	ECON 232	Principles of Economics II	3
CMIS	101	Fund. of Computer Applications	3	ACCT 201	Principles of Accounting	3
ECON	231	Principles of Economics I	3			
		*				
			16			15
		Third Semester			Fourth Semester	
HUMS	220	Third Semester Public Administration	3	ECON 240	Fourth Semester Labor Unions	3
HUMS SOCI	220 101	Third Semester Public Administration Principles of Sociology	3 3	ECON 240 HUMS 210	Fourth Semester Labor Unions Intro to Social Welfare	3 3
HUMS SOCI	220 101	Third Semester Public Administration Principles of Sociology Lab Science Elective	3 3 4	ECON 240 HUMS 210 ENGL 202	Fourth Semester Labor Unions Intro to Social Welfare Business and Professional Writing	3 3 3
HUMS SOCI BSSU	220 101 201	Third Semester Public Administration Principles of Sociology Lab Science Elective Supervisory Management	3 3 4 3	ECON 240 HUMS 210 ENGL 202 BSSU 204	Fourth Semester Labor Unions Intro to Social Welfare Business and Professional Writing Personnel Relations	3 3 3 3
HUMS SOCI BSSU	220 101 201	Third Semester Public Administration Principles of Sociology Lab Science Elective Supervisory Management Elective	3 3 4 3 3	ECON 240 HUMS 210 ENGL 202 BSSU 204 HUMS 290	Fourth Semester Labor Unions Intro to Social Welfare Business and Professional Writing Personnel Relations Practicum	3 3 3 3 3
HUMS SOCI BSSU	220 101 201	Third Semester Public Administration Principles of Sociology Lab Science Elective Supervisory Management Elective	3 3 4 3 3	ECON 240 HUMS 210 ENGL 202 BSSU 204 HUMS 290 ECON 235	Fourth Semester Labor Unions Intro to Social Welfare Business and Professional Writing Personnel Relations Practicum Public Finance	3 3 3 3 3 3 3
HUMS SOCI BSSU	220 101 201	Third Semester Public Administration Principles of Sociology Lab Science Elective Supervisory Management Elective	3 3 4 3 3	ECON 240 HUMS 210 ENGL 202 BSSU 204 HUMS 290 ECON 235	Fourth Semester Labor Unions Intro to Social Welfare Business and Professional Writing Personnel Relations Practicum Public Finance	3 3 3 3 3 3
HUMS SOCI BSSU	220 101 201	Third Semester Public Administration Principles of Sociology Lab Science Elective Supervisory Management Elective	$ \begin{array}{r} 3 \\ 3 \\ 4 \\ 3 \\ 3 \\ \hline 16 \end{array} $	ECON 240 HUMS 210 ENGL 202 BSSU 204 HUMS 290 ECON 235	Fourth Semester Labor Unions Intro to Social Welfare Business and Professional Writing Personnel Relations Practicum Public Finance	$ \begin{array}{r} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ \overline{18} \end{array} $

This associate degree program option is designed as a plus-two program of study that transfers directly into the B.S. Public Service Administration program at WVU Tech.

General Studies Certificate: Health Transfer Option

To ensure smooth transition to the health-related programs, the following courses may be completed and a collegiate certificate will be awarded. Students must contact the advisor of the intended program for direction of the specific courses needed in preparation of entry into that program.

Laboratory Science	4-12
Computer Application/Math	3-6
(CMIS 101; OTEC 184; 280; or equivalent))
Oral and Written Communications	6
(ENGL 101, 102, 202)	
Social Sciences	6
(PSYC 221, 241; SOCI 101)	
Humanities	0-3
Core Curriculum Electives	0-6
	30-39

INDUSTRIAL TECHNOLOGY

Feeder programs (First-two years):

- A.S. Civil Engineering Technology
- A.S. Drafting & Design Engineering Technology
- A.S. Electrical Engineering Technology
- A.S. Mechanical Engineering Technology
- A.S. General Studies (with advance approval of program of study by Division Director)
- A.S. Engineering–oriented Technology programs at other institutions meeting departmental approval

Program Description

The Bachelor of Science in Industrial Technology (BSIT) is a plus-two program that builds upon and complements associate degrees earned in a variety of engineering-oriented technology areas. Degrees are awarded through WVU Tech. 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 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. All students must meet the Core Curriculum requirements of the institution for graduation, including an eight-hour laboratory science sequence. Also a minimum of 40 semester hours of upperdivision courses is required.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the baccalaureate degree, specific outcomes for this program have been established.

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. Course outcomes are assessed by exit examinations in each course. 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. Job titles of recent graduates have included: Plant Manager Intern, Field Technician, Field Engineer, CAD Operator.

Plus-Two Baccalaureate Transfer Options

Students who have completed course work or associate degree programs in engineeringoriented programs at other institutions and wish to continue their studies toward a bachelor of science degree may do so at WVU Tech. Transfer agreements have been established with regional institutions offering associate degree programs. For more information, contact the Division Director of Engineering Technology/Industrial Technology.

Industrial Technology

Bachelor of Science

		Fifth Semester			Sixth Semester	
BLAW	301	Business Law	3	ENGL 102	English Composition II 3	3
INDT	352	Pwr & Transportation Tech 1	4	INDT 308	Automated Manuf.	3
INDT	302	Industrial Safety	3	INDT 354	Industrial Materials	3
ECON	231	Principles of Economics I	3	INDT 420/.	360 Construction or Wood Tech 4	3
		Technical Elective 2	4	ECON 232	Principles of Economics II	3
				HU/SS	Elective (General) 5	3
			17			18
	S	Seventh Semester			Eighth Semester	
MGMT	381	Fund, of Management	3	INDT 356	CAD/CAM Systems	3
INDT	384	Robotics I	3	INDT 410	Plant & Equip. Maint.	3
GNET	412	Project Management	3	GNET 480	Senior Seminar & Project 7	3
PSYC	323	Industrial Psychology	3	MGMT382	Prod. & Oper. Mgt.	3
		Tech Specialty Elective 6	3	300/400	Restricted Elective 8	3
			15			15
			1.)			15

- 1. MEET 435 Energy Conversion Systems may be substituted.
- Students transferring from Drafting & Design Engineering Technology should take ELET 371, those from Mechanical Engineering Technology should take ELET 372 or ELET 436, and those from Electrical Engineering Technology should take MEET 121.
- 3. Students entering the program with an ENGL 102 equivalent course should take ENGL 305.
- 4. Students may take either Construction Technology or Wood Technology to meet this requirement.
- See Core Curriculum Requirements. One three-hour course must meet the Cultural Diversity requirement. Must also complete Citizenship requirement.
- 6. Technical Specialty Electives can be chosen from areas such as, but not limited to, computer-aided drafting, electronics, civil, mechanical, industrial technology, etc. Mechanical Engineering Technology graduates should also take DRET-314 Computer Graphics and PHYS-202 College Physics II.
- 7. Capstone Course
- For students who have completed only 6 hours of math in their associate degree program, MGMT 386 Business Statistics or MATH 117 Technical Calculus shall be the required Restricted Elective.

Typical Technical Specialty Electives

CIET 382	Environmental Engr Tech
DRET 315	Advanced CAD
ELET 371	DC Circuit Analysis
ELET 372	AC Circuit Analysis
ELET 274	Electrical Control Systems
ELET 410	Control Systems Technology
ELET 436	Power Systems & PLCs
INDT 360	Wood Technology
INDT 420	Construction Technology
INDT 499	SP: Robotics II
MEET 435	Energy Conversion Systems
MGMT 483	Quality Management

INFORMATION TECHNOLOGY TECHNICAL STUDIES

Program Description

The Technical Studies in Information Technology program is offered as part of a statewide Information Technology (IT) certification program. This program offers students a solid background in computer technology complemented by a full array of vendor certification training choices. The program is available in a web delivery format by community colleges throughout the state. Students may take courses at the local institution, where provided, and take those offered by other colleges via the web, if not available at the local institution (coded below with the prefix "IT").

Students must complete a series of courses in four components: Component 1: General Studies; Component 2: Technical Core; Component III: Certifications; and Component IV; On-the job Training. Component III offers the student a choice from a variety of vendor certifications.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon completion of this program, the student will be able to:

- · Sit for selected computer certification credentialing examinations
- · Apply principles of information and operation examinations
- Repair computers

Course outcomes are assessed by exit examinations in each course. Program otucomes are assessed in a designated "capstone" course. General education outcomes are assessed by ACT WorkKeys.

Plus-two Baccalaureate Option

Technology Management

Component I - General Studies Core (22 credit hours)

English	Composition and Reading and	
-	Business & Professional Writing	6 credit hours
Math	College Algebra, Technical Algebra,	
	or Finite Math	3 credit hours
Interpersonal Skills	Interpersonal Relations	3 credit hours
Lab Science	Physical Science, Biology, or Chemistry	4 credit hours
General Electives	Humanities and/or Social Science	
	(one course to meet Cultural	
	Diversity Requirement)	6 credit hours
Component II - Tech	nical Core (23 credit hours)	
IT 100	Critical Thinking	2 credit hours
IT 101	Principles of Information Systems	3 credit hours
IT 114	Survey of Operating Systems	3 credit hours
IT 114	Operating Systems	3 credit hours
IT 269	Project Management	3 credit hours

A+ Certification:

ELET 110, 111, 210, 21	l, 212 Basic Computer Repair (A+)	6 credit hours
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Programming Elective:

Visual C++ Programming (IT 190) OR (Choose One) Introduction to Programming (IT 188) OR Visual Basic Programming (IT 192) OR Java (IT 194) 3 credit hours

Component III– Certification Specialty (minimum of 21 credit hours)

Students must complete one or more of the following certification choices. Exact curriculum will match certification exam requirements. Additional certifications may be added at a later date.

	Network Option	Application Programming
	Microsoft Certified Systems Engineer (MCSE)	Microsoft Certified Solutions Develoop
()	MCSD)	
	Certified Cisco Network Associate (CCNA)	Oracle Certified Professional (OCP)
	Microsoft Certified Database	
	Certified Unicenter Engineer (CUE)	Administrator (MCDBA)
	I-Net+	E-Commerce
	Microsoft Office User Specialist (MOUS)	

Component IV– On the Job Training (minimum of 3 credit hours)

Students will be required to complete at least 3 credit hours of internship or OJT course work.

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MANUFACTURING SPECIALIST: TECHNICAL STUDIES

Program Description

The Technical Studies: Manufacturing Specialist associate in applied science and certificate programs are designed in partnership with the manufacturing industries to provide the opportunity to convert specialized training and education into college credit. The technical core subjects are combined with general education courses and on-the-job training to meet requirements for the statewide A.A.S. degree in Technical Studies. Individuals completing industry training must confer with the program advisor for credit equivalency evaluation.

The one-year certificate program is an interdisciplinary design, combining courses in math; drafting; business; mechanical, electrical, and industrial technology to meet regional employer needs.

Program Objectives

In addition to learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established. Upon completion of these programs, the student should be able to:

- Understand electrical and hydraulic system principles and mechanical operations;
- Apply industry-based safety standards in the work environment;
- Apply principles of drafting to the manufacturing process;
- Apply computer applications to the manufacturing environment.

Course outcomes are assessed by exit examinations in each course. General education is assessed by Workkeys, and a capstone course is designated to assess program outcomes.

Manufacturing Specialist

Associate in Applied Science

General Education Core (22 credit hours)

ENGL 101	English Composition I	3
ENGL 202	Business & Professional Writing	3
MATH 113	Technical Algebra	3
PHSC 105	Physical Science I	4
SOCI 101	Principles of Sociology	3
ECON 231	Principles of Economics I	3
OTEC 282	Interpersonal Relations	3

Technical Core - CTC@Tech Courses (12 credit hours)

OTEC 280	Software Applications: Spreadsheets	1
OTEC 280	Software Applications: Presentation Graphics	1
DRET 120	Drafting I	2
MEET 121	Manufacturing Processes I	3
MEET 122	Manufacturing Processes II	3
INDT 102	Industrial Safety (General Industry)	2

Technical/Occupational Specialty - Industry Education Equivalents (24 credit hours)

Hydraulics, pneumatics, fluid power CNC/NC programming, machining, & projects Plant equipment, electrical and mechanical maintenance Management training, how to be a supervisor Fundamentals of trigonometry Intermediate trigonometry AC and DC circuits and troubleshooting Introduction to robotics, robotic functions and troubleshooting

On-The-Job Training (6 credit hours)

Total Degree Credit Hours: 64

Manufacturing Specialist Certificate

Certificate

MATH 113	Technical Algebra	3
OTEC 280	Software Applications: Spreadsheets	1
OTEC 280	Software Applications: Presentation Graphics	1
DRET 120	Drafting I	2
MEET 121	Manufacturing Processes I	3
MEET 122	Manufacturing Processes II	3
MEET 240	Fluid Power	4
INDT 102	OSHA General Industry Certification	2
INDT 208	Automated Manufacturing	3
INDT 210	Plant Equipment & Maintenance	3
ELET 171	Electrical Circuits & Machines I	4
BSSU 201	Supervisory Management	3

MECHANICAL ENGINEERING TECHNOLOGY

Program Description

The associate of science degree Mechanical Engineering Technology (ASMET) is a twoyear program that applies established scientific and engineering knowledge and methods to the field of machines and manufacturing. This program is ideally suited to the person who is capable of understanding theoretical principles, but prefers to get involved with mechanical systems and processes.

The program prepares graduates with knowledge, problem solving ability, and hands-on skills to enter careers in the design, installation, manufacturing, testing, evaluation, technical sales, and/or maintenance of mechanical systems. A graduate mechanical engineering technician can select employment from many areas, such as manufacturing, maintenance, modification of design, power generation, technical laboratory operation, technical sales, testing and analysis, and field engineering services.

The AS Mechanical Engineering Technology program is accredited by the Technology Accreditation Commission (TAC) of ABET, Inc.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Graduates can apply the following in regard to the specification, installation, fabrication, manufacturing, testing, operation, sales, maintenance, or documentation of basic mechanical systems:

- the following technical core topics statics, strength of materials, fluid power, climate control, and fundamentals of electricity and motors
- technical specialties in the areas of manufacturing processes, mechanical design, and computer aided engineering graphics
- physics principles having an emphasis in applied mechanics and basic inorganic chemistry principles, or if chemistry not taken, added technical topics in physics having application to basic mechanical systems
- · foundation mathematics to solve technical problems

Course outcomes are assessed by exit examinations in each course. Program outcomes are assessed in a designated 'capstone' course. General education outcomes are assessed by ACT WorkKeys.

Careers in Mechanical Engineering Technology

Graduates of associate degree programs typically have strengths in specifying, installing, fabricating, testing, documenting, operating, selling, and/or maintaining basic mechanical systems. Job titles of recent graduates have included: Engineering Draftsman, Engineering Technician, Technical Supervisor.

Advanced Placement Credit for High School/Vocational-Technical Center/College Programs:

High school level mechanical, manufacturing, fluid power, welding, industrial maintenance, CAD, or drafting subjects are not necessary for entrance into the Mechanical Engineering Technology program. Beginning subjects are part of the program. The student who has completed vocational or EDGE courses, however, may receive advanced placement. Articulation Edge agreements are in place with various vocational-technical centers. Advanced placement is also available to the student with prior college experience. Please check with the department head or division director for more information.

Mechanical Engineering Technology Associate of Science

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Prof. Writing	3
MATH	113	Technical Algebra	3	MATH 114	Technical Trigonometry	3
GNET	108	Basic Computer Appl.	3	CIET 114	Statics	3
GNET	100	Technology Orientation	1	DRET 121	Drafting II	2
MEET	121	Mfg. Processes I	3	MEET 122	Mfg. Processes II	3
HU/SS		Elective (HIST-101) ¹	3	PHYS 201	College Physics I	4
DRET	120	Drafting I	2			
		-				
			18			16
		Third Semester			Fourth Semester	
CHEM	115	Fund of Chemistry I	4	HU/SS Elect	tive (HIST-102)1	3
FLFT						
	171	DC Circuit Analysis	4	MATH 117	Technical Calculus	3
MEET	171 225	DC Circuit Analysis Mechanical Design I	4 3	MATH 117 MEET 226	Technical Calculus Mechanical Design II ²	3 3
MEET MEET	171 225 240	DC Circuit Analysis Mechanical Design I Fluid Power	4 3 3	MATH 117 MEET 226 MEET 250	Technical Calculus Mechanical Design II ² Climate Control	3 3 4
MEET MEET ELET	171 225 240 274	DC Circuit Analysis Mechanical Design I Fluid Power Electrical Control Systems	4 3 3 3	MATH 117 MEET 226 MEET 250 Technical Ele	Technical Calculus Mechanical Design II ² Climate Control ective ³	3 3 4 3
MEET MEET ELET	171 225 240 274	DC Circuit Analysis Mechanical Design I Fluid Power Electrical Control Systems	4 3 3 	MATH 117 MEET 226 MEET 250 Technical Ele	Technical Calculus Mechanical Design II ² Climate Control ective ³	3 3 4 3
MEET MEET ELET	171 225 240 274	DC Circuit Analysis Mechanical Design I Fluid Power Electrical Control Systems	$ \begin{array}{r} 4\\3\\3\\-\\18\end{array} $	MATH 117 MEET 226 MEET 250 Technical Ele	Technical Calculus Mechanical Design II ² Climate Control ective ³	$\begin{array}{c}3\\3\\4\\3\\\hline19\end{array}$

1. Recommended to meet the Cultural Diversity requirement and Humanities sequence requirements as part of Core Curriculum Requirements. Must also complete Citizenship requirements.

2. Capstone course.

3. Must be approved by advisor.

MINING SPECIALIST: ELECTRICAL

Program Description

In response to the increased demand in the Mining industry for individuals who have a background in electrical systems, Ethernet fundamentals, and a scientific basis in geology, surveying and blueprint reading, the Electrical Engineering Technology department has received approval to offer a one-year certificate program named the Electrical Mining Specialist. Students will acquire the necessary experience in a range of disciplines that are required in today's rapidly evolving mining industry.

Program outcomes

At the conclusion of this sequence of study the individual would be prepared to deal issues and equipment associated with the mining industry, including: analyzing basic DC electrical circuits, planning power systems, assessing systems for compliance with the NEC, designing and troubleshooting PLC ladder logic programs, applying networking fundamentals to communications systems– Longwall system communications, understanding basic geological principles, using basic surveying skills, andrawing electrical design and working diagrams.

One-Plus-One Associate Option

Upon completion of this Certificate, the student will have earned no less than the following credits towards the specified Associate of Science Degree programs:

Credits Earned	Associate of Science in:
21	Electrical Engineering Technology
18	Mechanical Engineering Technology
11	Civil Engineering Technology
8	Computerized Drafting and Design Engineering Technology

Plus-two Baccalaureate Option

(Dependent on Associate of Science degree pursued. See plus-two baccalaureate program descriptions elsewhere in catalog.)

Electrical Mining Specialist

Certificate

ELET-121	Internetworking I	4
MATH-113	Technical Algebra	3
MATH-114	Technical Trig	3
ELET-171	DC Circuit Analysis	4
ELET-274	Electrical Control Systems	3
ELET-236	PLCs	3
PHSC-104	Physical Geology	3
CIET-141	Surveying I	3
DRET-120	Drafting I	2
DRET-210	Electrical and Electronic Drafting	2
OTEC-280	Software Applications: Databases	1
OTEC-280	Software Appls: Pres Graphics	1

Mining Specialist: Mechanical

Program Description

In response to the increased demand in the mining industry for individuals who have a background in mechanical systems, electrical and maintenance fundamentals, and a scientific basis in geology, surveying and blueprint reading, the Mechanical Engineering Technology department has received approval to offer a one-year certificate program named the Mechanical Mining Specialist. Students will acquire the necessary experience in a range of disciplines that are required in today's rapidly evolving mining industry.

Program outcomes

At the conclusion of this sequence of study the individual would be prepared to deal with various types of mining equipment and issues, including: mchanical analysis, hydraulic systems & analysis, basic maintenance principles, basic surveying, basic geological principles, and electrical circuit analysis.

Mechanical Mining Specialist Certificate

MATH 113	Technical Algebra	3
MATH 114	Technical Trigonometry	3
DRET 120	Drafting I	2
CIET 114	Statics	3
CIET 115	Strength of Materials	3
MEET 240	Fluid Power	3
MEET 225	Mechanical Design I	3
INDT 210	Plant & Equipment Maintenance	3
ELET 171	DC Circuit Analysis	4
ELET 274	Electrical Control Systems	3
ELET 236	PLCs	3
		33

One-Plus-One Associate Option

Upon completion of this Certificate, the student will have earned no less than the following credits towards the specified Associate of Science Degree programs:

Credits Earned	Associate of Science in:
17	Electrical Engineering Technology
30	Mechanical Engineering Technology
17	Civil Engineering Technology
20	Computerized Drafting and Design Engineering Technology

Plus-two Baccalaureate Option

(Dependent on Associate of Science degree pursued. See plus-two baccalaureate program descriptions elsewhere in catalog.)

OFFICE TECHNOLOGY MANAGEMENT

Program Description

The Office Technology Management Department has a rich and proud history. It lists among its many accomplishments the fact that it has produced 16 national top-ten winners in academic competitions in the past 20 years and is designated Program of Excellence by the University Board of Governors. The department pioneered the concept of the five-week "mini" courses on Tech's campus and is still a leader in offering courses in both the computer and the soft skills area. It also houses Tech's only totally on-line degree (Medical Transcription). The US Government's Occupational Outlook Handbook projects the demand for graduates in all emphasis areas taught by Office Technology Management to grow faster than average through 2014.

Associate degrees and certificate programs in Office Technology Management address a wide variety of administrative support careers, clinical settings, and entry level management positions in medical and executive facilities. Graduates excel as medical assistants, medical coders, transcription, administrative assistants, help desk operators, claims examiners/processors, and managers. They find that advancement in the profession generally comes quickly with salary increments and promotions becoming available as the person produces quality work and willingly accepts additional responsibilities.

All emphasis areas offer a seamless transition from one-year certificates to two-year associate degrees with no loss of credit. In addition, associate-degree students have the opportunity to pursued baccalaureate degrees in Health Services Administration, Business Management, and Information Technology through the plus-two options listed.

Advanced placement through EDGE credit for high school courses or credit-by-examination is available for all areas of study. A student who makes a D in any skills course must repeat the course unless special permission is received from the department chair to take the next course in sequence. All graduates are required to sit for both the Work Keys and the OPAC certification exams.

Neither a medical or computer/office courses are necessary for entranced into the major; beginning courses are offered if required. Advanced placement is available for those who have prior education or skills.

Office Technology Management—Claims Processing Certificate

		First Semester			Second Semester	
ENGL	101	English Composition I	3	OTEC 174	Voice Recognition Software Intro	1
OTEC	144	Business Grammar	2	OTEC 176	Ethics	1
OTEC	171	Basic Formatting	2	OTEC 177	Legal Concepts in Healthcare	2
OTEC	172	Discovering Computers	3	OTEC 182	Business Mathematics	3
OTEC	181	Records Management	1	OTEC 275	Claims Processing/billing	2
OTEC	183	Medical Anatomy & Terminology	3	OTEC 280	Software Applications: Spreadsheet	1
OTEC	187	Word Processing	3	OTEC 280	Software Applications: Database	1
		-		OTEC 280	Software Applications: PowerPoint	1
				OTEC 282	Interpersonal Relations:	
					Face-to-Face Customer Service	1
					Electronic Customer Service	1
				OTEC 284	Medical Coding Management	3

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Good claims examiners are essential in today's insurance world, especially those with a good command of the computer and medical coding guidelines. The college trained claims manager finds that advancement in the profession generally comes quickly after proving ability in handling the tasks of a position. Salary increments and promotions become available as the person produces quality work and willingly accepts additional responsibilities.

NOTE: High school computer or medical subjects are not necessary for entrance into Office Technology Management. Beginning subjects are offered. The student who has completed such courses, however, may take the department's examinations for waiver of OTEC 280 Software Applications. A student who makes a D in any skills course must repeat the course unless special permission is received from the department chair to take the next course in the sequence.

Program Objectives

- 1. To educate students interested in pursuing careers in claims processing or insurance companies.
- 2. To provide opportunities for further education for professionals already employed in the insurance field.
- 3. To prepare students to be able to accurately and efficiently (a) perform office procedures; (b) display professionalism to clients and co-workers; (c) utilize both medical and general application software; (d) perform medical billing and coding; (e) insurance claims processing; and (f) to understand EOBs.

The program offers certificate holders the opportunity to pursue a 1 + 2 associate's degree in Office Technology Management Medical Emphasis, Medical Assistant Emphasis, or Medical Facility Management from the Community and Technical College at WVU Tech with no loss of credit. In addition, associate degree graduates have the opportunity to pursue a 2 + 2baccalaureate degree in Health Service Administration from WVU Tech's College of Business and Economics with no loss of credit. There are also credit agreements in place with various vocational-technical centers. Please check with the department chairperson for more information.

Types of jobs available:

- Large/Small Hospitals/Clinics
- Third Party Billing Agency
- Insurance Agencies

Job Titles:

- Customer Service Representative
- Medical Coder
- Administrative Assistant

Plus-one Associate Options:

- Medical Office Emphasis
- Medical Facility Management Emphasis

- Front Office for Physicians/Dentists
- Personal Injury Law Office
- Claims Examiner
- Office Manager
- Administrative Secretary
- Medical Assistant Emphasis

Office Technology Management— Computer Specialist Emphasis

Associate of Science

		First Semester			Second Semester	
ENGL	101	Composition & Reading	3	ENGL 202	Bus & Professional Writing	3
OTEC	144	Business Grammar	2	LABSCI	Elective	4
OTEC	170	Intro to OTEC	1	OTEC 176	Ethics	1
OTEC	171	Basic Formatting	2	OTEC 182	Business Mathematics	3
OTEC	172	Discovering Computers	3	OTEC 286	Advanced Formatting	3
OTEC	181	Records Management	1	OTEC 282	Interpersonal Relations:	
OTEC	187	Word Processing	3		Face-to-Face Customer Service	1
		-			Electronic Customer Service	1
			15			16
		Third Semester			Fourth Semester	
ELET	110	Computer Hardware Systems	3	ELET 111	Computer Operating Systems	3
ELET	121	Internetworking I	4	HU/SS	Elective	3
OTEC	270	Transcription Introduction	1	OTEC 174	Voice Recognition Software Intro.	1
OTEC	280	Software Applications: Spreads	heet 1	OTEC 185	Bookkeeping Basics	1
OTEC	280	Software Applications: Databas	e 1	OTEC 281	Desktop Publishing	2
OTEC	280	Software Applications: Powerpo	oint 1	OTEC 287	Office Management	3
OTEC	282	Interpersonal Relations:		OTEC 299	Externship	3
		Interviewing	1			
		Professional Etiquette	1			
		Leadership Development	1			
SOCI	101	Principles of Sociology	3			
			17			15

Good assistants are essential in today's business world, especially those with a good command of the computer and application software programs. The college-trained office professional finds that advancement in the profession generally comes quickly after proving ability in handling the tasks of a position. Salary increments and promotions become available as the person produces quality work and willingly accepts additional responsibilities. Associate graduates are in great demand.

NOTE: High school computer or business subjects are not necessary for entrance into office technology management. Beginning subjects are offered. The student who has completed such courses, however, may take the department's examinations for waiver of OTEC 171 Basic Formatting or OTEC 280 Software Applications. One course that the student must take, regardless of background, is OTEC 286 Advanced Formatting. A student who makes a D in any skills course must repeat the course unless special permission is received from the department chair to take the next course in the sequence.

Program Objectives

- 1. To educate students interested in pursuing careers in a highly computerized office setting.
- 2. To provide opportunities for further education for professionals already employed in the computer field.
- 3. To prepare students to be able to accurately and efficiently (a) perform office procedures; (b) display professionalism to clients and co-workers; (c) (c) utilize specific and general

application software; (d) utilize speech to text software; (e) compose and design brochures, pamphlets and other documents; (f) perform computer repairs and upgrades; and (g) design, install, and operate WANS and LANS.

The program offers associate degree graduates the opportunity to pursue a 2 + 2 baccalaureate degree in Technology Management from WVU Tech's College of Business with no loss of credit. In addition, credit agreements with various vocational-technical centers are in place. Please check with the department chairperson for more information.

Types of jobs available:

- Large/Small Firms
- Help Desks

Job Titles:

- Help Desk Manager
- Data Control
- Administrative Assistant
- Audiovisual Technician
- Data/Network Coordinator
- Computer Support Specialists

Plus-two Baccalaureate Option:

Technology Management

- Federal/State/Local Government
- Office Manager
- Office Assistant
- Technical Assistant
- Computer Technician
- Information Technician

Office Technology Management—Executive Emphasis

Associate of Science

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Bus & Professional Writing	3
OTEC	144	Business Grammar	2	LABSCI	Elective	4
OTEC	170	Intro to OTEC	1	OTEC 182	Business Mathematics	3
OTEC	171	Basic Formatting	2	OTEC 280	Software Applications: Elective	1
OTEC	172	Discovering Computers	3	OTEC 280	Software Applications: Elective	1
OTEC	181	Records Management	1	OTEC 286	Advanced Formatting	3
OTEC	187	Word Processing	3		6	
			15			15
		Third Semester			Fourth Semester	
HU/SS		Elective	3	OTEC 174	Voice Recognition Software Intro	1
OTEC	270	Transcription Introduction	1	OTEC 176	Ethics	1
OTEC	271	Transcription Intermediate	1	OTEC 185	Bookkeeping Basics	1
OTEC	280	Software Applications: Spreadsh	eet1	OTEC 186	Concepts of Human Resources	1
OTEC	280	Software Applications: Database	1	OTEC 188	Marketing Overview	1
OTEC	280	Software Applications: Powerpo	int 1	OTEC 281	Desktop Publishing	2
OTEC	282	Professional Dev.: (Choose 2)		OTEC 282	Interpersonal Relations:	
		Interviewing	1		Interpersonal Customer Service	1
		Professional Etiquette	1		Electronic Customer Service	1
		Leadership Development	1	OTEC 287	Office Management	3
OTEC	283	Specialized Procedures (Exec)	3	OTEC 299	Externship	3
SOCI	101	Principles of Sociology	3		r	-
			17			15

Good assistants are essential in today's business world, especially those with a good command of the computer and application software programs. The college-trained office manager finds that advancement in the profession generally comes quickly after proving ability in handling the tasks of a position. Salary increments and promotions become available as the person produces quality work and willingly accepts additional responsibilities. Associate graduates are in great demand.

NOTE: High school computer or business subjects are not necessary for entrance into office technology management. Beginning subjects are offered. The student who has completed such courses, however, may take the department's examinations for waiver of OTEC 171 Basic Formatting or OTEC 280 Software Applications. One course that the student must take, regardless of background, is OTEC 286 Advanced Formatting. A student who makes a D in any skills course must repeat the course unless special permission is received from the department chair to take the next course in the sequence.

Program Objectives

- 1. To educate students interested in pursuing careers in a corporate office setting.
- 2. To provide opportunities for further education for professionals already employed in the field.
- To prepare students to be able to accurately and efficiently (a) perform office procedures;
 (b) display professionalism to clients and co-workers;
 (c) transcribe dictation;
 (d) utilize specific and general application software;
 (e) utilize speech to text software; and
 (f) compose and design brochures, pamphlets and other documents.

The program offers associate degree graduates the opportunity to pursue a 2 + 2 baccalaureate degree in Business or Technology Management from WVU Tech's College of Business with no loss of credit. In addition, credit agreements with various vocational-technical centers are

in place. Please check with the department chairperson for more information.

Types of jobs available:

- Large/Small Firms
- Insurance/Accounting Firms

Job Titles:

- Office Manager
- Office Assistant

Plus-two Baccalaureate Options:

Technology Management

- Federal/State/Local Government
- Administrative Assistant
- Business Management

Help Desk Certificate

		First Semester			Second Semester	
ELET	110	Computer Hardware Systems	3	OTEC 176	Ethics	1
ELET	111	Computer Operating Systems	3	OTEC 280	Software Applications: WebPage	1
OTEC	144	Business Grammar	2	OTEC 282	Interpersonal Relations:	
OTEC	172	Discovering Computers	3		Electronic Customer Service	1
OTEC	181	Records Management	1		Face-to-Face Customer Service	1
OTEC	280	Software Apps: Word	1	OTEC 280	Software Apps: HTML	1
OTEC	280	Software Apps: Spreadsheet	1	OTEC 280	Software Apps: Internet/Email	1
OTEC	280	Software Apps: Database	1	OTEC 280	Software Apps: Windows	1
OTEC	280	Software Apps: PowerPoint	1	ENGL 202	Bus. & Prof. Writing	3
				ELET 210	Network Plus	3
				OTEC 291	Externship	3
			16			16

Program Objectives

In a business enterprise, a help desk is a place that a user of information technology can call to get help with a problem. In many companies, a help desk is simply one person with a phone number and a more or less organized idea of how to handle the problems that come in. In larger companies, a help desk may consist of a group of experts using software to help track the status of problems and other special software to help analyze problems (for example, the status of a company's telecommunications network).

The program is designed:

- 1. To educate students interested in pursuing careers in help desk.
- 2. To raise students' awareness of the importance of competent and ethical behavior.
- 3. To provide opportunities for further education for those already employed in the field.
- 4. To prepare students to be able to accurately and efficiently (a) answer routine help desk questions; (b) display professionalism to clients and co-workers; (c) utilize both specific and general application software;

The program offers certificate holders the opportunity to pursue a 1 + 2 associate's degree in Computer & Information Technology, Office Technology Management, or General Studies from the Community and Technical College at WVU Tech with no loss of credit. Associate degree graduates have the opportunity to pursue a 2 + 2 baccalaureate degree in Technology Management from WVU Tech's College of Business, Humanities, and Sciences with no loss 278

of credit.

Types of jobs available:

- Computer Support Center
- Resource Center
- Information Center
- IT Response Center
- Technical Support Center

Job Titles:

- Computer Support Specialist
- Service Desk Technician
- Information Center Specialist
- Technical Support Specialist
- Plus-one Associate Options:
- Computer & Information Technology
- General Studies

Plus-two B.S. Option:

• Technology Management

- Customer Support Center
- Help Desk
- Service Desk
- IT Solutions Center
- Customer Service Representative
- Help Desk Technician
- Computer Support Specialist≠
- Office Technology Management

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Office Technology Management— Medical Assistant Emphasis

Associate of Science

BIOL ENGL OTEC OTEC OTEC OTEC OTEC	First Semester233Anatomy & Physiology101English Composition I144Business Grammar170Intro to OTEC171Basic Formatting181Records Management187Word Processing	4 3 2 1 2 1 3	ENGL 202 OTEC 172 OTEC 176 OTEC 177 OTEC 182 OTEC 183	Second Semester Bus & Professional Writing Discovering Computers Ethics Legal Concepts in Healthcare Business Mathematics Medical Anatomy & Terminology	3 3 1 2 3 3
		16			15
OTEC OTEC OTEC OTEC OTEC OTEC OTEC PSYC SOCI	Third Semester270Transcription Introduction271Transcription Intermed (Medical)273Fundamental Clinical Procedures280Software Applications: Database280Software Applications: Powerpoin281Interpersonal Relations: Interviewing283Specialized Procedures (Medical)221General Psychology101Principles of Sociology	$ \begin{array}{c} 1 \\ 1 \\ 2 \\ 1 \\ 1 \\ 1 \\ 3 \\ 3 \\ 3 \end{array} $	OTEC 185 OTEC 274 OTEC 275 OTEC 281 OTEC 282 OTEC 284 OTEC 287 OTEC 299	Fourth Semester Bookkeeping Basics Clinical Techniques & Procedures Claims Processing/Billing Desktop Publishing Interpersonal Relations: Face-to-Face Customer Service Electronic Customer Service Medical Coding Management Office Management Externship	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3

Medical assistants perform routine administrative and clinical tasks to keep the offices and clinics of physicians, podiatrists, chiropractors, and optometrists running smoothly. The duties of medical assistants vary from office to office. In small practices, medical assistants usually are "generalists," handling both administrative and clinical duties and reporting directly to an office manager, physician, or other health practitioner. Those in large practices tend to specialize in a particular area under the supervision of department administrators. The college-trained medical assistant finds that advancement in the profession generally comes quickly after proving ability in handling the tasks of a position. Salary increments and promotions become available as the person produces quality work and willingly accepts additional responsibilities. Associate graduates are in great demand.

Medical assistants perform many administrative duties. The answer telephones, greet patients, update and file patient medical records, fill out insurance forms, handle correspondence, schedule appointments, arrange for hospital admission and laboratory services, and handle billing and bookkeeping.

NOTE: High school computer, business or health subjects are not necessary for entrance into this program. Beginning subjects are offered. The student who has completed such courses, however, may take the departmental examinations for waiver(s). A student who makes a D in any skills course must repeat the course unless special permission is received from the department chair to take the next course in the sequence.

Program Objectives

- 1. To educate students interested in pursuing careers in a medical or clinical facility.
- To provide opportunities for further education for professionals already employed in the medical field.
- 3. To prepare students to be able to accurately and efficiently (a) perform administrative and clinical procedures; (b) display professionalism to patients and co-workers; (c) utilize both medical and general application software; (d) transcribe medical dictation; (e) utilize speech to text software, and (f) perform medical billing and coding.

The program offers associate degree graduates the opportunity to pursue a 2 + 2 baccalaureate degree in Health Services Administration from WVU Tech's College of Business with no loss of credit. ÄIn addition, credit agreements with various vocational-technical centers are in place. Please check with the department chairperson for more information.

Types of jobs available:

- Large/Small Hospital/Clinic
- Third Party Billing Agency
- Insurance Agency

Job Titles:

- Medical Records Technician
- Medical Assistant
- Medical Secretary

Plus-two Baccalaureate Option:

• Health Services Administration

- Physician/Dentist Practice
- Personal Injury Law Office

- Office Manager
- Medical Coder
- Administrative Assistant

	Office rechnology Management—									
	Medical Office Emphasis									
	Associate of Science									
ENGL OTEC OTEC OTEC OTEC OTEC	101 144 170 171 172 181	First Semester English Composition I Business Grammar Intro to OTEC Basic Formatting Discovering Computers Records Management	3 2 1 2 3 1	LAB SCI OTEC 174 OTEC 176 OTEC 177 OTEC 182 OTEC 183	Second Semester Elective Voice Recognition Software Intro Ethics Legal Concepts in Healthcare Business Mathematics Medical Anatomy & Terminology	4 1 2 3 3				
OTEC	187	Word Processing	3	OTEC 286	Advanced Formatting	3				
			15			17				
ENGL HU/SS OTEC OTEC OTEC OTEC OTEC SOCI	202 270 271 280 282 283 101	Third Semester Bus & Professional Writing Elective Transcription Introduction Transcription Intermed. (Medi Software Applications: Spread Interpersonal Relations: Interviewing Professional Etiquette Specialized Procedures (Medie Principles of Sociology	3 3 1 cal) 1 sheet1 1 1 cal) 3 3	OTEC 275 OTEC 281 OTEC 282 OTEC 282 OTEC 284 OTEC 287 OTEC 299	Fourth Semester Claims Processing Desktop Publishing Interpersonal Relations: Face-to-Face Customer Service Electronic Customer Service Medical Coding Management Office Management Externship	2 2 1 1 3 3 3				
			17			15				

Office Technology Monogemen

Good assistants are essential in today's business world, especially those with a good command of the computer and application software programs. The college-trained office manager finds that advancement in the profession generally comes quickly after proving ability in handling the tasks of a position. Salary increments and promotions become available as the person produces quality work and willingly accepts additional responsibilities. Associate graduates are in great demand. NOTE: High school computer or business subjects are not necessary for entrance into office technology management. Beginning subjects are offered. The student who has completed such courses, however, may take the department's examinations for waiver of OTEC 171Basic Formatting or OTEC 280 Software Applications. One course that the student must take, regardless of background, is OTEC 286 Advanced Formatting. A student who makes a D in any skills course must repeat the course unless special permission is received from the department chair to take the next course in the sequence.

Program Objectives

- 1. To educate students interested in pursuing careers in a medical office setting.
- 2. To provide opportunities for further education for professionals already employed in the medical office field.
- 3. To prepare students to be able to accurately and efficiently (a) perform office procedures; (b) display professionalism to clients and co-workers; (c) utilize both medical and general application software; (d) transcribe medical dictation; (e) utilize speech to text; (f) compose and design forms, brochures, pamphlets and other documents related to the medical office; and (g) perform medical billing and coding.

Types of jobs available:

- Large/Small Hospitals/Clinics
- Third Party Billing Agency
- Insurance Agencies

Job Titles:

- Medical Transcriptionist
- Admissions Clerk
- Administrative Secretary
- Medical Secretary

Plus-two B. S. Option:

Health Services Administration

- Front Office for Physicians/Dentists
- Personal Injury Law Office
- Office Manager
- Administrative Assistant
- Medical Records Technician
- Medical Coder

Office Technology Management— Medical Facility Management Emphasis Associate of Science

		First Semester			Second Semester	
ENGL	101	English Composition I	3	ENGL 202	Business & Professional Writing	3
OTEC	144	Business Grammar	2	LAB SCI	Elective	4
OTEC	171	Basic Formatting	2	OTEC 174	Voice Recognition Software Intro	1
OTEC	170	Intro to OTEC	1	OTEC 176	Ethics	1
OTEC	172	Discovering Computers	3	OTEC 182	Business Mathematics	3
OTEC	181	Records Management	1	OTEC 183	Medical Anatomy & Terminology	3
OTEC	187	Word Processing	3	OTEC 282	Interpersonal Relations:	
		C C			Face-to-Face Customer Service	1
					Electronic Customer Service	1
			15			17
		Third Semester			Fourth Semester	
HU/SS		Elective	3	OTEC 177	Legal Concepts in Healthcare	2
OTEC	270	Transcription Introduction	1	OTEC 186	Concepts of Human Resources	1
OTEC	280	Software Applications: Spreadshee	et 1	OTEC 185	Bookkeeping Basics	1
OTEC	280	Software Applications: Database	1	OTEC 188	Marketing Overview	1
OTEC	280	Software Applications: PowerPoin	t 1	OTEC 275	Claims Processing/Billing	2
OTEC	282	Interpersonal Relations:		OTEC 284	Medical Coding Management	3
		Interviewing	1	OTEC 287	Office Management	3
		Professional Etiquette	1	OTEC 291	Externship	3
		Leadership Development	1		1	
OTEC	283	Specialized Procedures (Medical)	3			
SOCI	101	Principles of Sociology	3			
		1 67				
			16			16

Good office managers are essential in today's medical community, especially those with a good command of the computer, medical issues, and management skills. The college-trained practice manager finds that advancement in the profession generally comes quickly after proving ability in handling the tasks of a position. Salary increments and promotions become available as the person produces quality work and willingly accepts additional responsibilities. While Associate graduates are in great demand; upward mobility comes readily with a 2 + 2 Baccalaureate degree in Health Services Administration from WVU Tech's College of Business, Humanities, and Sciences. This can be accomplished without a loss of credit. In addition, credit agreements with various vocational-technical centers are in place. Please check with the department chairperson for more information.

NOTE: High school computer, business, or medical classes are not necessary for entrance into office technology management. Beginning subjects are offered. The student who has completed such courses, however, may take the department's examinations for waiver of OTEC 280 Software Applications. A student who makes a D in any skills course must repeat the course unless special permission is received from the department chair to take the next course in sequence.

Program Objectives

1. To educate students interested in pursuing management positions in a health care facility.

- 2. To provide opportunities for further education for professionals already employed in the medical field.
- 3. To prepare students to be able to accurately and efficiently (a) perform general office procedures; (b) display professionalism to patients and co-workers; (c) operate both medical and general application software; (d) utilize speech to text software; (e) accurately utilize coding knowledge, and (f) manage a medical facility successfully.

Types of jobs available:

- Large/Small Hospitals
- Third Party Billing Agency
- Insurance Agencies

Job Titles:

- Office Manager
- Medical Coder

Plus-two Baccalaureate Option:

• Health Services Administration

- Front Office for Physicians
- Front Office for Dentists
- Personal Injury Law Office
- Administrative Assistant

Office Technology Management— Medical Transcription Certificate

		First Semester			Second Semester	
OTEC	144	Business Grammar	2	ENGL 202	Business & Professional Writing	3
OTEC	171	Basic Formatting	2	OTEC 174	Voice Recognition Software Intro	1
OTEC	172	Discovering Computers	3	OTEC 176	Ethics	1
OTEC	181	Records Management	1	OTEC 177	Legal Concepts in Healthcare	2
OTEC	183	Medical Anatomy & Terminology	3	OTEC 272	Transcription Advanced	2
OTEC	187	Word Processing	3	OTEC 282	Interpersonal Relations:	
OTEC	270	Transcription Introduction	1		Face-to-Face Customer Service	1
OTEC	271	Transcription Intermediate	1		Electronic Customer Service	1
		-		OTEC 284	Medical Coding Management	3
				OTEC 286	Advanced Formatting	3
			16			17

A medical transcriptionist is a medical language specialist who prepares a variety of medical reports and documents for inclusion in patients' medical records. Medical transcriptionists must have a vast knowledge of the medical field and its associated terminology, a high degree of computer and written communication skills, as well as document formatting guidelines. The college trained transcriptionist finds that advancement in the profession generally comes quickly after proving ability in handling the tasks of a position. Salary increments and promotions become available as the person produces quality work and willingly accepts additional responsibilities Graduates of this program may be eligible to take the national exam for certified medical transcriptionists.

Medical transcriptionists often have the opportunity to work flexible hours from their own home on a contract basis for several different doctors or medical professionals in healthcare facilities. The nationwide average annual salary for trained Medical Transcriptionists is \$25,720 (12.37/hour), according to the U.S. Bureau of Labor Statistics. The MT profession is expected to grow faster than average through 2010 (21%-35%).

NOTE: High school computer or medical subjects are not necessary for entrance into this program. Beginning subjects are offered. A student who makes a D in any skills course must repeat the course unless special permission is received from the department chair to take the next course in the sequence.

Program Objectives

- 1. To educate students interested in pursuing careers in medical transcription.
- 2. To provide opportunities for further education for professionals already employed in the health care field.
- 3. To prepare students to be able to accurately and efficiently transcribe admission notes, history and physical examinations, discharge summary, doctor's progress notes, nurses records, surgical documents, recovery room records, anesthesia records, departmental records, respiratory therapy records, psychotherapy documents, CPR forms, and privileged documents;
- 4. To prepare students to (a) display professionalism to clients and co-workers; (b) utilize speech to text software; and (c) utilize both medical and general application software.

The program offers certificate holders the opportunity to pursue a 1 + 2 associate's degree in Office Technology Management Medical Emphasis, Medical Assistant Emphasis, or Medical Facility Management from the Community and Technical College at WVU Tech with no loss of credit. In addition, associate degree graduates have the opportunity to pursue a 2 + 2baccalaureate degree in Health Service Administration from WVU Tech's College of Business and Economics with no loss of credit. There are also credit agreements in place with various vocational-technical centers. Please check with the department chairperson for more information.

Types of jobs available:

- Physicians/Dentists in Private Practice
- Large/Small Hospitals/Clinics & Labs
- Insurance Companies
- Government Agencies

Job Titles:

- Medical Transcriptionist
- Customer Service Representative
- Receptionist

Plus-one Associate Options:

- Medical Office Emphasis
- Medical Facility Management Emphasis

- Public Health Agencies
- · Home-based Business
- Long-term Care facilities
- Emergency Rooms
- Medical Records Clerk
- Clerk/Medical Secretary
- Admitting Clerk
- Medical Assistant Emphasis

Medical Transcription Online Certificate

		First Semester			Second Semester	
MTRN	100	Introduction to Medical	3	MTRN 200	Medical Specialties and Editing	3
		Transcription		MTRN 220	Beginning Transcription	3
MTRN	110	Medical Terminology	3	MTRN 250	Intermediate Transcription	4
MTRN	251	Anatomy and Physiology	4	MTRN 280	Advanced Transcription	4
		Terminology		MTRN 285	Shortcuts and Efficiencies	2
MTRN	271	Disease Processes	2			
MTRN	180	Applications and Pronunciations	3			
			15			16

Program Objectives

- 1. To educate students interested in pursuing careers in medical transcription.
- 2. To raise students' awareness of the importance of confidentiality and ethical behavior.
- 3. To provide opportunities for further education for professionals already employed in the health care field.
- 4. To prepare students to be able to accurately and efficiently transcribe admission notes, history and physical examinations, discharge summary, doctor's progress notes, nurses records, surgical documents, recovery room records, anesthesia records, departmental records, respiratory therapy records, psychotherapy documents, and othernprivileged documents.

Successful completion of this curriculum, as determined via testing, leads to a certificate of graduation in medical transcription. The program is two semesters, completely online as an independent study and can be done outside the structure of the academic calendar (open entry/ open exit policy allowing for daily enrollments as well as a steady flow of graduates.) Students work at their own pace, have one year to complete the program, and are evaluated for graduation primarily upon their performance on the final examination. When all the courses are finished 31 semester-credit hours will be awarded for a one-year semester degree program. Due to the competency-based nature of the training, the program can be completed in a time period shorter than the one-year allowed.

The program is based on a mastery approach with two comprehensive exams (midterm and final). The final exam at the end of the second semester will also be the exit assessment. Any score below 85% is a no-pass grade on the medical transcription final. The grading scale will be C = 85 to 89; B = 90 to 94; and A = 95 to 100.

Upon the completion of the program with a grade of 85% or better on each part of the final examination, the student will receive his or her certificate. Completion of only one semester will result in completing a non-credit skill set.

The Medical Transcription Online program is Internet based. With the exception of reference materials, all content is online. The required reference materials are made available to the student as part of the enrollment package.

An Internet Service Provider (ISP) is required for utilization of the online program. The choice of provider and expenses are the responsibility of the student.

The program offers certificate holders the opportunity to pursue a 1 + 2 associate's degree in Office Technology Management Medical Emphasis, Medical Assistant Emphasis, or Medical Facility Management from the Community and Technical College at WVU Tech with no loss of credit. Associate degree graduates have the opportunity to pursue a 2 + 2 baccalaureate degree in Health Service Administration from WVU Tech's College of Business, Humanities, and Sciences with no loss of credit. In addition, advanced placement agreements (e.g. EDGE) with various high schools and/or vocational-technical centers are in place. Please check with the department chairperson for more information.

Types of jobs available:

- Physicians/Dentists in Private Practice
- Large/Small Hospitals/Clinics & Labs
- Insurance Companies
- Government Agencies

Job Titles:

- Medical Transcriptionist
- Medical Coder
- Receptionist

Plus-one Associate Options:

- Medical Office Emphasis
- Medical Facility Management Emphasis

Plus-two B.S. Option:

- Public Health Agencies
- Home-based Business
- Long-term Care facilities
- Emergency Rooms
- Medical Records Clerk
- Clerk/Medical Secretary
- Admitting Clerk
- Medical Assistant Emphasis

Health Services Administration from WVU Tech's College of Business, Humanities, and Sciences

Students may either use a computer at their home or use the computer lab provided by the Office Technology Management Department. If the student is using his or her own computer, it should meet the minimum specifications listed below. Hardware or software than exceeds the recommended minimum specifications will work even better.

Internet Access: 33.6 kbps minimum, but 56k or greater is recommended. The biggest factor in speed and efficiency on the online program is the Internet connection—a 56k connection is better than a 33.6k, and a DSL or cable modem is even better.

Windows Users: The following are recommended hardware and software specifications for students wishing to take a course on the web:

Pentium-class Windows 98/ME/2000/XP 32 MB of RAM 56 kbps modem

Monitor and video card — SVGA (800 x 600) resolution and thousands of colors Sound card and speakers

Available serial port or USB port

Printer

Latest version of Microsoft Internet Explorer or Netscape Navigator

Real Audio browser plug-in

Macintosh Users: Currently transcription software cannot be provided for use with a Macintosh computer. Owners may complete the entire course online using a recent version of Netscape or Internet Explorer. However, they will need to either acquire or use Virtual PC Software and a USB foot pedal, or use standard cassette tapes rather than the computer WAV files for the practice transcription courses in the program.
PARAPROFESSIONAL EDUCATION TECHNICAL STUDIES

Program Description

Paraprofessional educators serve in a support capacity including but not limited to facilitating the instruction and direct or indirect supervision of pupils under the direction of an educator. They provide instructional and clerical support for classroom teachers in elementary, middle, and high school settings, and in classrooms that serve anywhere from one to twenty-five children.

A paraprofessional may be assigned to one student who needs his/her services throughout the day or they may work with small groups of children. They often work alongside the regular classroom teacher helping students with their studies. They may work with a few students in a corner of the classroom while the classroom teacher works with the rest of the class. In addition, paraprofessional educators grade tests and papers, check homework, keep records, type, file, prepare instructional materials, and duplicate materials.

Many paraprofessional educators work extensively with special education students. At times they must assist students with disabilities with their physical needs such as feeding, riding the bus, and using the bathroom. Some strenuous tasks, such as lifting, may be required.

Paraprofessional educators are often responsible for large group supervision such as lunchroom supervision, school discipline center, field trips, or after school-late bus supervision.

The classroom teacher will ask the paraprofessional to do many things that will help facilitate learning in the classroom and in the school. Employment opportunities are available in public elementary, middle and high schools, pre-schools, and private schools. Most work six or seven hours per day during the traditional nine to ten month school year.

Students completing all three components of the program, for a total of sixty-four credit hours, will fulfill the requirements for an Associate in Applied Science degree. Students will be eligible for West Virginia permanent paraprofessional certification (WV code 126-136-25) after completing Components I & II.

Paraprofessional Education Technical Studies

Associate in Applied Science

Component I - General Education

ENGL 101	English Composition I	3
SPCH 250	Speech Communications	3
ENGL 202	Business & Professional Writing	3
CMIS 101	Fund. Computer Applications	3
OTEC 182	Business Mathematics	3
BIOL 111	General Biology	4
OTEC 282	Interpersonal Relations	3
SOCI 221	Principles of Sociology	3
	1 07	

Component II

ENGL 259	Literature of Youth	3
PHED 172	CPR/First Aid for Coaches	3
SOCI 321/222	Social Problems	3
ARTS 113	Art Appreciation	3
ENGL 102	English Composition	3

Component III

Sp Tp: The Exceptional Child	3
Sp Tp:Approaches to Discipline	3
Sp Tp: Instructor Support Strategies	3
Physical Science	4
Finite Math	3
Life Span Development	3
	Sp Tp: The Exceptional Child Sp Tp:Approaches to Discipline Sp Tp: Instructor Support Strategies Physical Science Finite Math Life Span Development

Component IV

On-the-Job Training or Supervised	
Work-Based Learning	5

64

Hours required for graduation

*Courses will be taught via the electronic classroom

PRINTING TECHNOLOGY

Program Description

The associate of science degree in Printing Technology is designed to provide quality technical education to prepare technicians for the rapidly changing printing industry. The student will receive training in all of the basic skills required of the printing industry, and upon completion of the two-year program, should be qualified to enter the industry in a junior supervisory capacity directly responsible to the plant manager or supervisor. For the student wishing to pursue the plus-two baccalaureate Printing Management degree program, offered by WVU Tech, the associate program offers a well-rounded basis for advanced study.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon completion of the Associate of Science degree in Printing Technology the student will be able to:

- design and prepare copy for publication
- · utilize desktop publishing software common to the printing industry
- apply appropriate color theory to design and copy
- appropriately bind and finish a printed document
- · apply appropriate management skills for technical workers

Program outcomes are assessed by exit course examinations, performance on laboratory projects, and a capstone course. General education objectives are assessed with the WorkKeys examination.

Job Titles

Typical job titles include pre-press operator, desktop publisher, sheetfed operator, webfed press operator, first line supervisor, customer service representative

Plus-Two Baccalaureate Options

- " Printing Management, BS
- " Interdisciplinary Studies, BA

Printing Technology Associate of Science

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NOTE: Students pursing only the AS Printing Technology degree must enter the program with a Math ACT score of 19 or better or successfully complete MATH-040 or its equivalent.

* Recommended to meet the Cultural Diversity and humanities sequence requirement.

** Students select area of specialization from PRNT 251 Color or PRNT 255 Web Press.

ELECTRONIC PRE-PRESS TECHNOLOGY

Program Description

The Pre-Press Certificate in Printing Technology is designed to provide quality technical education to prepare desktop technicians for the rapidly changing printing industry. The student will receive training in all of the basic skills required of the printing industry and, upon completion of the one-year certificate, should be qualified to enter into the pre-press area of the industry. The certificate program is also designed to continue into the two-year printing technology program.

Program Objectives

Upon completion of the one-year Pre-Press certificate, the student will be able to

- design and prepare copy for publication.
- utilize desktop publishing software common to the printing industry
- apply appropriate color theory to design and copy.

Program outcomes are assessed by exit course examinations and performance on laboratory projects.

Job Titles

Typical job titles include pre-press operator and desktop publisher.

One-Plus-One Associate Option

Printing Technology (AS)

Plus-two Baccalaureate Option

Printing Management (upon completion of AS degree)

Electronic Pre-Press Technology Certificate

		First Semester			Second Semester	
ENGL	101	Composition & Reading I	3	PRNT 134	Graphics Creation	1
PRNT	111	Introduction. to Printing	4	PRNT 135	Page Layout II	1
PRNT	114	Introduction to Computers	1	PRNT 136	Acrobat/PDF Basics	1
PRNT	115	Text and Type	1	PRNT 141	Color Models and Usage	1
PRNT	116	Intro. to Page Layout	1	PRNT 142	Introduction to PhotoShop	1
PRNT	125	Digital Photography	1	PRNT 143	Color Workflow & Management	1
PRNT	126	Electronic Image Capture	1	PRNT 235	Database for Printers	1
PRNT	127	Image Reproduction	1	PRNT 241	Newspaper Operations	2
PRNT	217	Color Reproduction	3	PRNT 251	Color Specialization	3
PRNT	299	Special Topics (Color)	1	PRNT 299	Special Topics (Color)	3
			17			15

PRESS TECHNOLOGY

Program Description

The Press Certificate in Printing Technology is designed to provide quality technical education to prepare press technicians for the rapidly changing printing industry. The student will receive training in all of the basic skills required of the printing industry and, upon completion of the one-year certificate, should be able to continue into the two-year printing technology program.

Program Objectives

Upon completion of the one-year certificate program, the student will be able to-

- · operate press equipment for print production of both sheetfed and web offset
- apply safety/environmental standards and guidelines for press operation
- utilize appropriate paper and ink for the best print product

Program outcomes are assessed by exit course examinations and performance on laboratory projects.

Job Titles

Typical job titles include sheetfed press operator and webfed press operator.

One-Plus-One Associate Option

Printing Technology, AS

Plus-two Baccalaureate Option

Printing Management (upon completion of AS degree)

Press Technology Certificate

		First Semester			Second Semester	
ENGL	101	English Composition I	3	PRNT 131	Sheetfed Press	4
PRNT	111	Introduction to Printing	4	PRNT 145	Safety/Environ. Issues	2
PRNT	112	Paper & Ink	3	PRNT 231	Flexography	3
PRNT	216	Webfed Press	4	PRNT 238	Bindery and Finishing	3
PRNT	299	Special Projects (Press)	3	PRNT 255	WebPress Specialization	3
		1 5 7		PRNT 299	Special Projects (Press)	1

RESPIRATORY THERAPY

Program Description

The respiratory therapy program is a cooperative program between the CTC at WVU Tech and Carver Career and Technical Education Center (CCTEC) in Malden. The program is nationally accredited by the Committee on Accreditation for Respiratory Care (CoARC). Completion of this program leads to an associate of science degree in Respiratory Therapy and eligibility for the Certified Respiratory (CRT) and Registered Respiratory Therapist (RRT) examinations.

Students wishing to enter this program must apply to both Carver Career and Technical Education Center and to the CTC at WVU Tech. The first step in the application process is the completion of the Psychological Services Bureau of Health and Occupations entrance examination. Prospective students are encouraged to contact Carver Career and Technical Education Center no later than December 15 to arrange to take this exam. The admission requirements for the program are outlined in the admission section of this catalog.

Program Objectives

In addition to the learning outcomes set forth in the general education core curriculum for the associate degree, specific outcomes for this program have been established.

Upon completion of the program, graduates will be able to:

- Provide a variety of therapeutic and diagnostic modalities including oxygen therapy, mechanical ventilation, humidity/aerosol therapy, chest physiotherapy, and pulmonary function testing.
- Sit for the Certified Respiratory Therapist and Registered Respiratory Therapist examinations.

Careers in Respiratory Therapy

Jobs are available as Certified Respiratory Therapists, Registered Respiratory Therapists. Graduates may find employment in home health care, acute and sub-acute settings, diagnostic laboratories, research, case management, sales and asthma education.

Plus-Two Baccalaureate Options

- · Health Services Administration
- Other colleges offer four-year respiratory programs.

Respiratory Therapy Associate of Science

BIOL RESP RESP RESP RESP	First Seme 231 Anatomy & Pl 105 Patient Assess 107 CP Pharmacol 111 Respiratory SI 101 Clinical Rotat	ster hysiology ment ogy kills I ion I	4 7 3 5 0	PSYC ENGL SOCI RESP RESP RESP	221 101 101 112 115 102	Second Semester General Psychology English Composition I Principles of Sociology Respiratory Skills II Pathology Clinical Rotation II	3 3 3 3 2 0
			19				14
CMIS RESP RESP	Summer 101 Fund Compute 220 Mechanical Ve 103 Clinical Rotat	I er Appl. entilation I ion III	3 3 3				
ENGL RESP RESP RESP RESP RESP	Fourth Sem 202 Business & Pr 221 Mechanical Vo 210 Cardiopul Dia 207 Alternate Hea 201 Clinical Rotat 202 Clinical Rotat	ester of. Writing entilation II gnostics I lth Care ion IV tion V	3 5 3 0 0	RESP RESP RESP RESP RESP	205 209 211 217 215	Fifth Semester Neonates/Pediatrics Clinical Simulations Cardiopul Diagnostics II Professional Issues Review Seminar	4 2 3 3 2
			14				14

NOTE: Financial Aid for this program is awarded through Carver Career and Technical Education Center.

Course Descriptions

SUBJECT CODES

ACCT	Accounting
ARTS	Art
BANK	Banking
BIOL	Biology
BLAW	Business Law [†]
BSSU	Business Supervision
BUAD	Business Administration
CAPT	Collaborative Applied Process
	Technology
CHEE	Chemical Engineering
CHEM	Chemistry
CIET	Civil Engineering Technology
CMIS	Computer Information Systems
CO-OP	Cooperative Education
COSE	Control Systems Engineering
CSCI	Computer Science
CTED	Career-Technical Education
CVLE	Civil Engineering
DENT	Dental Hygiene
DESL	Diesel Technology
DRET	Drafting and Design Engineering
	Technology
ECON	Economics & Labor Studies
EDUC	Education
ELCE	Electrical Engineering
ELET	Electrical/Electronic Engineering
	Technology
EMED	Paramedic Science
ENGL	English
FINC	Finance
FREN	French
GENE	General Engineering

GEOG	Geography
GERM	German
GNET	General Engineering Technology
GPHS	Graphics
HIST	History
HLTH	Health
HLSC	Health Science
HUMS	Human Services
INDT	Industrial Technology
MATH	Mathematics
MECE	Mechanical Engineering
MEET	Mechanical Engineering
	Technology
MGMT	Management
MILS	Military Science
MKTG	Marketing
MUSC	Music
NURS	Nursing
OTEC	Office Technology Management
PHED	Physical Education
PHIL	Philosophy
PHSC	Physical Science
PHYS	Physics
PMGT	Printing Management
POLS	Political Science
PRNT	Printing Technology
PSYC	Psychology
RESP	Respiratory Care
SOCI	Sociology
SPAN	Spanish
SPCH	Speech
STAT	Statistics

Explanation 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

MATH-452 INTRO TO REAL ANALYSIS II (3-0) 3 (MATH-451) F-Odd

The "MATH" on the left top line stands for mathematics, the Subject area; the "452" is the number of the course; "Intro To Real Analysis II" is the course title.

The "(3-0)" means three hours of lecture and none of laboratory. The "3" on the right represents the credit hours of the course.

"F-Odd" means the course is offered in the fall semester of odd numbered years only.

The (MATH-451) is a prerequisite 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, then the symbol fl is used.

COURSE DESCRIPTIONS

ACCT - Accounting

Associate Professors Sarin (Chair), Melton, Amin, Perry

ACCT-201 PRINCIPLES OF ACCOUNTING I (3-0) 3 F & S

(MATH-124 or Math ACT score of 21 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 II

(3-0) 3 F & 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-244 HEALTH CARE ACCOUNTING

(3-0) 3 As needed

(ACCT-201)

Emphasis on hospital and other health care facilities' record keeping and reporting. Review of accounting cycle; balance sheet, income statement and cash flow statement; principles of fund accounting; principles of budgeting, cost finding and analysis; and interpretation of financial statements. ACCT-245 COMPUTERIZED ACCOUNTING

ACC1-245 COMPUTERIZED ACCOUN

(3-0) 3 (ACCT-201) As Needed

Perform accounting procedures and produce financial reports using a commercial accounting package.

ACCT-331 MANAGERIAL ACCOUNTING (3-0) 3

(ACCT-202) For non-accounting majors only. Cannot be substituted for ACCT-432. F & S

Explores special management problems, covering budget, cost systems, cash flows, and application of other managerial concepts. Examines cost analysis and capital budgeting with special emphasis on management problems. Emphasis on relevant costs and the contribution approach to management decision-making.

ACCT-342 INTERMEDIATE ACCOUNTING I

(3-0) 3 F (ACCT-202)

A review of the principles and concepts developed in the introductory course in accounting. Work sheet adjustments and the presentation of financial statements with various formats. Introduction of additional valuation accounts relating to receivables, inventories and payables. In-depth study of inventory costing and valuation. Appropriate software used to solve and analyze accounting problems.

ACCT-343 INTERMEDIATE ACCOUNTING II

(3-0) 3 S (ACCT-342 a grade of C or better)

Analysis of property accounts and depreciation methods. Intangible assets and their valuation. Special topics relating to bonds. In-depth analysis of capital accounts for corporate entities relating to stock conversions, stock splits and earnings per share. Statement of cash flows and financial statement analysis. Discussion of FASB statements and APB opinion. Use is made of appropriate software to solve and analyze accounting problems.

ACCT-345 GOVERNMENTAL AND INSTITUTIONAL ACCOUNTING (3-0) 3

(ACCT-202) Every other F

Budgetary accounting and financial control and their applications to various governmental units such as cities, counties, and other local political subdivisions, and public institutions.

ACCT-348 FINANCIAL STATEMENT ANALYSIS (3-0) 3 (Also cross-listed as FINC-328) S

(ACCT-342; FINC-325; or consent of Department)

This course will include an in-depth review of the balance sheet, income statement, statement of retained earnings, and the statement of cash flows; financial ratios related to shortterm liquidity, long-term debt paying ability, profitability, and other investment decisions; industry average comparisons; financial services and library sources; and expanded utility of ratios.

ACCT-420 FRAUD EXAMINATION (3-0) 3

(ACCT-343) Every other F

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 MGMT: LEGAL/ETHICAL ISSUES (3-0) 3

(ACCT 420)

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 noncontrol deterrence and methods used to implement it.

ACCT-422 ADVANCED FRAUD INVESTIGATION & ANALYSIS (3-0) 3

(ACCT 420, ACCT 421)

This course includes a discussion of techniques used in investigating financial fraud. Topics include: sources of information, interviewing, evaluating deception, and forensic accounting procedures. The course will also use fraud examination & detection software.

ACCT-430 INFORMATION TECHNOLOGY AUDITING (3-0) 3

(ACCT 343, ACCT 445 or consent of the department)

Information Technology (IT) audit overview, legal and ethical issues for IT auditors, risks & controls, deployment risks, managing the IT function, networks and telecommunication risks, e-business risks, using computer assisted audit tools and techniques, conducting the IT audit, fraud and forensic auditing.

ACCT-431 E-COMMERCE, INFORMATION SECURITY, AND CONTROL (3-0) 3 (BLAW 301, ACCT 445)

This course will cover fundamental concepts of electronic commerce and security issues in a computerized environment. Topics include: security guidelines, implementation, and cost issues; risk management and control; security issues pertinent to the internet; and Ecommerce fraud.

ACCT-432 COST ACCOUNTING I (3-0) 3 (ACCT-342) F

Cost concepts, behavior, and estimation; accounting systems for activity-based costing; analysis for decision-making; inventory management; and capital budgeting; product costing; budgeting; standard costing; responsibility accounting; segment reporting; variable costing; and costvolume-profit analyses.

ACCT-442 ADVANCED ACCOUNTING (3-0) 3

(ACCT-343 with a grade of C or better) F

Advanced accounting problems, including accounting for pension costs, leases, income taxes, receiverships, consolidations, investment accounting, and foreign currency. ACCT-444 AUDITING (3-0) 3 Every other F

(ACCT-343 or consent of department)

Public accountant's work, professional ethics, legal liabilities, auditing objectives and procedures; analysis and verification of asset, liability and net worth accounts; preparation of audit working papers, adjustments, and reports. Computerized auditing case is used.

ACCT-445 ACCOUNTING INFORMATION SYSTEMS (3-0) 3 S

(ACCT-342)

This course presents an overview of the Accounting Information Systems. Topics include: types of data used at different management levels, systems theory, accounting cycles, types of controls-administrative and accounting, manual accounting systems design, and electronic accounting systems.

ACCT-446 INCOME TAX ACCOUNTING (3-0) 3

(Junior or Senior) F

Current federal income tax laws and the preparation of income tax returns for individuals; exclusions and inclusions for gross income, capital gains, and losses, business expenses, other deductions, tax credits, and the computation of alternate tax.

ACCT-447 INCOME TAX ACCOUNTING (3-0) 3

ACCT-446) As neededContinuation of ACCT-446, installment and deferred payment sales, preparation of income tax returns for partnerships, estate and trusts, corporations.

ACCT-448 ACCOUNTING AND/OR FINANCE INTERNSHIP (3-0) 3 F & S

(Junior or Senior. Consent of Accounting and Finance Faculty)

Directed work assignments in private or public organizations; student work experiences to be determined in advance by the supervising instructor and the cooperating organization, with specific academic assignments that are relevant to the intern's work experience.

ACCT-450 ACCOUNTING TECHNOLOGY

(ACCT 445) S

Survey and application of a computerized accounting software - systems set up, general ledger, accounts receivable, accounts payable, payroll, and preparation of financial statements.

ACCT-492 SPECIAL TOPICS IN

ACCOUNTING (1-3-0) 1 to 3 As needed (Junior or Senior: Consent of Department Chair) Current topics of special interest in accounting.

ARTS - Art

Professor Simile

ARTS-113 ART APPRECIATION (3-0) 3 F/S

Appreciation of art as the basis for enjoyment of painting, sculpture, and architecture in the home, community, industry, and commerce. Experimentation with various art media

ARTS-114 INTRODUCTION TO DESIGN (0-4) 2

As Requested

Problems is basic elements of design. Work in pencils, pastels, charcoal, tempera, oils, polymer, etc.

ARTS-116 INTRODUCTION TO GRAPHIC

DESIGN (2-1) 3 Alternate Semesters

Emphasis in fundamental typography, layout design, and basic visual communication.

ARTS-200 PAINTING I (both 6) 3 F

Introduction to the materials and Techniques of oil painting and acrylics. Development of form through color and appropriate emphasis on textures to strive for controlled composition and aesthetic concept.

ARTS-216 CERAMICS I (both 6) 3 F

Designing, hand-building, casting, wheel throwing and modeling pottery. Decoration, glaze application, and kiln operation.

ARTS-300 PAINTING II (3) F (ARTS-200)

Continuation of 1-200 (1-200 or permission of instructor) ARTS-301 GRAPHIC DESIGN I (2-1) 3 Alternate Semesters

(ARTS-116 & PRNT-114)

Continuation in visual communication. Principles in multipage design, and preparation of finished art for printing. ARTS-302 GRAPHIC DESIGN II (2-1) 3

(ARTS-301) Alternate Semesters

Experience in Graphic Design, layout and graphic processes. ARTS-303 GRAPHIC DESIGN III (2-1) 3

(ARTS-302) Alternate Semesters

Specialized problems in design.

ARTS-317 CERAMICS II (0-6) 3

(ARTS-216) F

Continuation of wheel throwing and intensified work in design; decorating WVU Technique; mold making; glaze preparation and testing.

ARTS-485 INTERDISCIPLINARY STUDIES SENIOR PROJECTN 3-4

(Consent of department) As Requested Design and completion of Interdisciplinary Project. Requires approval of faculty committee.

ARTS-490 SENIOR PROJECT 3-4

(ARTS-302) As requested Special topics in Graphic Design

ARTS- 495 GRAPHIC DESIGN INTERNSHIP

(variable 1-6) As requested

Directed work assignment in private or public organizations; student work experiences to be determined in advance by the supervising instructor and the cooperating organization with specific academic assignments that are revilement to the intern's work experience.

ARTS-498 SPECIAL TOPICS (variable 1-6) (Consent of Instructor) As requested

BIOL-Biology

Professor Ferrara (Chair); Associate Professor Wellstead; Assistant Professor Beutler; Assistant Professor Luce

BIOL-111 GENERAL BIOLOGY (Both 4) 4

(ENGL-101 or ß) F & S

A comprehensive introductory course investigating the major areas of modern biological inquiry. Includes Scientific method, biological molecules, cell structure and function, histology, metabolism, anatomy and physiology of animals. Vertebrate dissection required.

BIOL-112 GENERAL BIOLOGY (Both 4) 4 (BIOL-111) S

A continuation of BIOL-111. Principles of inheritance, molecular genetics, survey of plant and animal diversity, evolution, and ecology. Plant anatomy and physiology.

BIOL-231 ANATOMY AND PHYSIOLOGY I (3-3) 4 S

(For nursing students only; others by departmental permission)

(Part of an eight hour sequence)

Biological principles including biochemistry, cytology, histology, musculoskeletal and nervous systems. Mammal dissection required.

BIOL-232 ANATOMY AND PHYSIOLOGY II (3-3) 4 F

(BIOL-231) (Part of an eight hour sequence)

Continuation of BIOL-231 with coverage of regulatory, circulatory, lymphatic, digestive, respiratory, urogenital, and integrative systems. Dissection of mammal required.

BIOL-233 ANATOMY AND PHYSIOLOGY (3-3) 4 F (BIOL-112; or for dental hygiene students, CHEM-113 or higher as β)

A survey of cellular & organismal structure and function of the human body. Mammal dissection required.

BIOL-240 MICROBIOLOGY (3-3) 4

(BIOL-111 or BIOL 233 or CHEM-115) S

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-250 HUMAN SEXUALITY (2-0) 2

A biological approach to human sexuality. Structures and function of human reproductive system, sexual behavior, birth control, and sexually transmitted infections.

BIOL-303 GENETICS (3-3) 4 S new

(BIOL-112; MATH-126)

Basic principles of heredity including modern genetics. Illustration of basic concepts in laboratory experiments. Offered every other year.

BIOL-336 VERTEBRATE EMBRYOLOGY

(3-3) 4 F odd

(BIOL-112)

Study of chordate development with reference to evolution of systems. Follows development from the gametes through ontogeny of selected animals. Offered every other year.

BIOL-343 SYSTEMATIC ZOOLOGY (2-4) 4

(BIOL-112; CHEM-115) F odd

Phylogeny, taxonomy and morphology of invertebrate and vertebrate phyla. Collection, dissection and preservation of specimens.

BIOL 347 PARASITOLOGY (3-3)4

(BIOL 112) F even

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-353 DENDROLOGY (1-3) 3

Introduction to field identification, distribution, commercial aspects and ecology of woody plants of the Eastern Deciduous Forest with emphasis on West Virginia trees. Extensive fieldwork.

BIOL-354 ORGANISMAL BOTANY (3-3) 4

(BIOL-112, CHEM-115) F even

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-403 SUPERVISED RESEARCH OR

PROBLEMS (0-3 to 0-9)1-3

(Open to qualified biology majors with consent of department)

Departmental chair will coordinate the assignment of projects and students to instructors. Work in this course depends on needs and interests of students.

BIOL-416 CELL BIOLOGY (3-3) 4

(BIOL-112, CHEM-112 or 116) F even

Study of fundamental cellular activities of prokaryote and eukaryote cells. Cell structure and organization, biochemical pathways of photosynthesis and respiration, protein structure and function, gene structure and regulation, cell communication. Laboratory experiments explore biochemistry and molecular biology of the cell.

BIOL-440 COMPARATIVE ANATOMY (3-3) 4 (BIOL-112) F odd

A comparative study of chordate anatomy with reference to morphological and physiological adaptations, phylogeny, and systematics. Students dissect representative vertebrates including cat.

BIOL-442 ORGANISMAL ZOOLOGY (3-3) 4

(BIOL-112, CHEM-116, CMIS-101) S even Mechanisms of environmental adaptation. Physiology, behavior and zoogeography. Laboratory experiments.

BIOL-451 PLANT TAXONOMY (3-3) 4

(BIOL-112) F odd

Classification, phylogeny and morphology of vascular plants. Laboratory and field trip emphasis on West Virginia flora.

BIOL-465 EVOLUTIONARY BIOLOGY (3-0)3

(BIOL-112, MATH-126 or permission of department) S even

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; CMIS 101) S odd

Principles of environmental biology, population dynamics and evolution. Field trips and lab work.

BIOL-493 SPECIAL TOPICS IN BIOLOGY.

(1 to 4-0 or 3-3)

 to 4 (permission of department).
In-depth study of a particular area of biology at an advanced level. May include laboratory.

BIOL 494 SEMINAR IN BIOLOGY (1-0) 1 F

(Permission of department) Students will read and discuss selections from current literature in biology.

BLAW - Business Law

BLAW-301 BUSINESS LAW (3-0) 3 F

Legal development; courts and procedures; torts; the uniform commercial code. Contracts: offer, acceptance, consideration, rights of parties, performance, remedies. Agency: creation, principle and agent.

BLAW-302 BUSINESS LAW (3-0) 3 S

Partnerships. Corporations: organizing and financing, corporate securities. Property: personal, real. Sales: the contract, title and risk, warranties and liability. Commercial paper: negotiability, liability of parties, documents of title. Bankruptcy.

BSSU - Business Supervision

Assistant Professor Stewart (chair)

BSSU-101 INTRODUCTION TO BUSINESS (3-0) 3

A survey course analyzing business function and management. Demonstrates the management of resource through organization, finance, production, and marketing. BSSU-199 SPECIAL TOPICS IN BUSINESS SUPERVISION (3-0) 3

(Consent of instructor)

Various special courses presented in independent or classroom form in relation to current or fundamental issues involving business supervision.

BSSU-201 SUPERVISORY MANAGEMENT

(3-0) 3

(ACCT-202, ECON-232)

The managerial functions of planning, organizing, staffing, direction, and controlling, and their relation to the daily job of the supervisor. The behavioral aspects of supervision necessary to carry out the managerial functions.

BSSU-202 BUSINESS FINANCE (3-0) 3

(ACCT-202, ECON-232, MATH-047)

A study of the activities of the finance manager in the planning, acquisition, and administration of funds used in a business enterprise. Types of securities and financial structures. Financing through securities.

BSSU-204 PERSONNEL RELATIONS (3-0) 3

(BSSU-201)

The supervisor's role in the selection and training of personnel, wage determination, evaluation of performance, health and safety requirements of the workplace and the laws governing such requirements. Motivation and job satisfaction.

BSSU-206 MARKETING (3-0) 3

(ECON-231; ECON-232)

An overview of marketing which includes an analysis of those activities through which business firms direct the flow of their goods and services to consumers and users.

BUAD - Business Administration

Associate Professors Marshburn (chair), Russell, McCormick, L. Oxendale, Van Loo

BUAD-100 BUSINESS ADMINISTRATION ORIENTATION (1-0) 1

College regulations; effective study habits; adjustment to college.

BUAD-199 SPECIAL TOPICS (1-4) 1 F, S, Summer, Web availability (Departmental approval)

Special topics in general business administration. Can include independent study and/or supervised projects. F

BUAD-201 BUSINESS LAW (3-0)3

(Also cross-listed as BLAW-301) (2 year programs only) Legal development; courts and procedures; torts; the uniform commerical code. Contracts: offer, acceptance, consideration, rights of parties, performance, remedies. Agency: creation, principal and agent.

BUAD-231 MANAGERIAL ACCOUNTING

(Also cross-listed as ACCT-331)

(2 year programs only) F/S

(3-0)3 (ACCT 202 - for non-accounting majors only. Cannot be substituted for BUAD 244 or ACCT 432.

Explores special management problems, covering budget, cost systems, cash flows, and application of other managerial concepts. Examines cost analysis and capital budgeting with special emphasis on management problems. Emphasis on relevant costs and the contribution approach to management decision-making.

BUAD-242 INTERMEDIATE ACCOUNTING I

(Also cross-listed as ACCT-342)

(2 year programs only) (3-0)3 F (ACCT 202)

A review of the principles and concepts developed in the introductory course in accounting. Work sheet adjustments and the presentation of financial statements with various formats. Introduction of additional valuation accounts relating to receivables, inventories, and payables. In-depth study of inventory costing and valuation. Appropriate software used to solve and analyze accounting problems.

BUAD-243 INTERMEDIATE ACCOUNTING II

(Also cross-listed as ACCT-343)

(2 year programs only) (3-0)3 S

(BUAD 242 with grade C or better)

Analysis of property accounts and depreciation methods. Intangible assets and their valuation. Special topics relating to bonds. In-depth analysis of capital accounts for corporate entities relating to stock conversions, stock splits, and earnings per share. Statement of cash flows and financial statement analysis. Discussion of FASB statements and APB

opinions. Use is made of appropriate software to solve accounting problems.

BUAD-244 COST ACCOUNTING I (3-0)3

(Also cross-listed as ACCT-432)

F (2 year programs only)

(BUAD 242, or consent of instructor)

Cost concepts, behavior, and estimation; accounting systems for activity-based costing; analysis for decision-making; inventory management; and capital budgeting; product costing; budgeting; standard costing; responsibility accounting; segment reporting; variable costing; and costvolume-profit analyses.

BUAD-267 INTERMEDIATE COBOL

APPLICATIONS (3-0)3 (2 year programs only) (Also cross-listed as CMIS-367) (S)

(CMIS 266 or equivalent)

Business applications with mainframe COBOL programming. Use of OS/MVS job control language and selected OS utilities. TSO editor features and library maintenance, including source and object libraries. File and database processing; extensive use of subprograms.

BUAD-286 BUSINESS STATISTICS (3-0)3

F, S (2 year programs only)

(MATH 124)

Elementary principles of collecting and presenting statistical data; frequency distribution; grouping averages; dispersion and skewness; sampling processes; statistical inference; simple correlation; series analysis.

BUAD-299 SPECIAL TOPICS (1-4) 1 F, S, Summer, Web availability (Departmental approval)

Special topics in general business administration. Can include independent study and/or supervised projects.

BUAD-490 SPECIAL TOPICS IN BUSINESS (0-1 to 4) 1-4

(Juniors and seniors only and consent of instructor) Special Topics in business administration, accounting, or management information systems.

CAPT – Applied Process Technology

Applied Process Technology is a collaborative educational program among the Advantage Valley Community College Network (AVCCN) partners at WVU Tech, WV State, and Marshall and Ashland, Kentucky, Technical College. Courses noted with AVCCN will be taught by one of the network partners in Advantage Valley; courses with "Ashland" after title will be taught by Ashland Technical College.

CAPT 120 Math for Applied Process Technicians (AVCCN) (4-0) 4

(ACT of 19 or greater)

Application course that includes study of fundamentals of arithmetic, geometry, algebra, and trigonometry. Problemsolving progressing to more advanced mathematical applications in applied physics. Logarithmic functions are included for understanding of time constants as applied to instrumentation, electricity, and the pH scale as it applies to chemistry. Understanding of statistical process control through the study of basic statistics.

CAPT 122 Physics for Applied Process Technicians I (AVCCN) (3-3) 4

(CAPT 120 Co-requisite)

Application course that includes study of the principles of physics and mechanics including motion, force, vectors, work, energy, machines, properties of matter, behavior of fluids, temperature and heat and properties of gases.

CAPT 124 Physics for Applied Process

Technicians II (AVCCN) † (3-3) 4 (CAPT 122)

Application course that includes study of wave motion, electricity, light, and nuclear physics.

CAPT 125 Chemistry for Applied Process Technicians (AVCCN) (3-3) 4

(CAPT 120)

Application course that includes study of basic chemistry principles, measurements, periodic table, chemical equations, molecular structure, chemical reactions, and organic chemistry including hydrocarbons, functional groups, and macromolecules.

CAPT 102 Process Fundamentals (Ashland)

- CAPT 104 Rotating and Reciprocating Equipment (Ashland)
- CAPT 107 Process Chemicals/Stationary Equipment (Ashland)
- CAPT 142 Instrumentation (Ashland)
- CAPT 144 Process Operations (Ashland)

CAPT 146 Process Applications (Ashland)

CAPT 148 Process Operations Safety (Ashland)

CAPT 202 Safety Skills Training I (Ashland)

CAPT 204 Safety Skills Training II (Ashland)

CAPT 251 Applications of Process Operations (Ashland)

CHEE - Chemical Engineering

Professors Doner, Minnick; Associate Professor Thomas (Chair); Assistant Professor Wang

CHEE-100 INTRODUCTION TO CHEMICAL ENGINEERING (1-1) 2 F

Introduction to engineering practice with an emphasis on products and industries related to Chemical Engineering. Course projects are designed to develop problem solving skills, teamwork, and communication skills. Specific topics include project management, project definition, sustainable development, graphical presentation of information, and tools for problem solving. Project and laboratory work will be provided to demonstrate engineering concepts.

CHEE-201 MATERIAL & ENERGY BALANCES I (3-0) 3

(CHEM-116) F

Introduction to chemical engineering fundamentals and calculation procedures, industrial stoichiometry, energy balances, material properties, and transient mass and energy balances.

CHEE 202 MATERIAL & ENERGY BALANCES II (3-0) 3

(CHEE-201) S

Continuation of topics from CHEE-201.

CHEE-230 MODELING & ANALYSIS (2-3) 3

(MATH-155) S

Topics include mathematical modeling of systems, numerical solution of algebraic and differential equations, approximation of mathematical relations, statistical analysis of data, and design of experiments.

CHEE-310 PROCESS FLUID MECHANICS (3-0) 3 (PHYS-213, MATH-155) F

Mechanics of laminar and turbulent fluid flow, mechanical energy balance, frictional losses, compressible flow, prime movers, fluid handling equipment, dimensional analysis, mixing, and flow through porous media.

CHEE-311 HEAT TRANSFER OPERATIONS (3-0) 3 (BCHEE-310, CHEE-201, MATH-155) F

Conduction, convection, and radiation mechanisms in heat transfer. Forced and natural convection, heat transfer with phase change, heat transfer coefficients, heat transfer devices, and design of heat transfer equipment.

CHEE-312 MASS TRANSFER EQUIPMENT DESIGN (4-0) 4

(CHEE-311, CHEE-320) S

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.

CHEE-320 CHEMICAL ENGINEERING

THERMODYNAMICS (3-0) 3

(CHEE-202, MATH-251) F

Equations of state and prediction of thermodynamic properties for pure species and mixtures. Equilibrium thermodynamics of multiphase systems, using equations of state and activity models. Application to operation of processing systems. Reaction equilibrium and prediction of conversion for systems of reactions. Thermodynamic analysis of processes and prediction of performance limits. CHEE-325 KINETICS AND REACTOR DESIGN (3-

0) 3

(CHEE-320) S

Reaction 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.

CHEE-350 CHEMICAL ENGINEERING LABORATORY (0-3) 1

(CHEE-311, BENGL-305) S

Principles of molecular and convective transport applied in the analysis of heat transfer and fluid flow processes. Planning of experiments, data collection, evaluation of experimental data, and reporting of results.

CHEE-411 ADVANCED HEAT TRANSFER (3-0) 3

(CHEE 311 or MECE-336) Elective – alternate years 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.

CHEE-412 SEPARATION PROCESSES (3-0) 3

(CHEE-312) Elective – alternate years

Analysis and design of diffusional operations such as distillation, extraction, adsorption, and membrane separations. Course covers the 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.

CHEE-426 MULTIPHASE REACTOR DESIGN (3-0) 3

(CHEE-325) Elective - alternate years

A study of multiphase reactor designs, with particular emphasis on fluidized and packed bed catalytic reactors. Development of kinetic models. Evaluation of mixing, heat transfer, and mass transfer effects on reactor scale-up. Reactor modeling and numerical solution will be used to augment design and analysis studies.

CHEE-435 PROCESS DYNAMICS AND CONTROL (3-0) 3

(MATH-261, CHEE-325) F

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.

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CHEE-440 SPECIAL TOPICS (variable credit) (1-3)

(permission of the department) Elective – as required Course covers a chemical engineering topic of interest to the students and faculty.

CHEE-449 PROJECTS (0-6) 3

(permission of the department) Elective – as required Research project or applied engineering problem designed to stimulate creative thought and the development of an effective solution. Project plan, formal report, and presentation are required. Project must have a faculty sponsor.

CHEE-450 UNIT OPERATIONS LABORATORY (0-4) 2

(CHEE-312, ENGL-305) F

Continuation of CHEE 350. Primary emphasis is on separation operations.

CHEE-451 PROCESS ENGINEERING

LABORATORY (0-4) 2

(CHEE 450, CHEE 435) S

Experiments focus on reaction kinetics and reactor operation, control loop configuration and tuning, and dynamic response of systems.

CHEE-457 PROCESS DESIGN I (3-3) 4

(CHEE-325, CHEE-310, CHEE-311, CHEE-312) F

Analysis and synthesis in the design of processing systems. Topics include economic evaluation, project management, flowsheet development, equipment selection, equipment specification, optimization, computer-aided design, process operability and control. Team and individual projects are primary vehicles for skill development.

CHEE-458 PROCESS DESIGN II ((2-3) 3

(CHEE-457) S

Continuation of CHEE 457. Particular emphasis is given to process safety, mitigation of environmental impact, and professional practice; including ethics, legal requirements, and social responsibility.

CHEE-460 POLYMERS (3-0) 3

(permission of the department) Elective – alternate years Classification of polymers, production and forming processes, polymer chemistry, material properties, engineering applications, and new developments.

CHEM - Chemistry

Associate Professors Abatjoglou, Hurst, Schoening (Chair), Assistant Professors Wiedemann, Liu

STUDENTS ARE REQUIRED TO WEAR GOGGLES IN ALL CHEMISTRY LABORATORIES.

CHEM-100 SELECTED TOPICS IN FRESHMAN

CHEMISTRY (1 TO 4-3 TO 6) 1 to 4

(Permission of the department)

Primarily for students who transfer course credit from other institutions that are not equivalent to a course offered by the WVUIT Department of Chemistry. Students study only the components missing from the transferred course. A student may receive credit for this course more than once to supplement different transferred courses. A thorough description of the course content is filed with the student's permanent record when the student receives a grade for this course. I to 4 hr. lec. and/or 3 to 6 hr. lab.

CHEM-110 INTRODUCTION TO CHEMISTRY (2-0) 2 F,

Recommended for students whose performance on a departmental placement examination indicates need for introduction work before enrolling in other chemistry courses. Scientific terminology and concepts; chemical

arithmetic; chemical symbols, formulae and equations; mole concepts; problem solving. May not count for credit toward graduation if taken after credit for another course in chemistry has been earned.

CHEM-111 SURVEY OF CHEMISTRY I (3-3) 4

(Prerequisite or Concurrent: MATH-125, MATH-126 or MATH-117 or ACT math score of 23 or higher) F, S Covers aspects of general chemistry including atomic

structure; radioactivity; mole concept; stoichiometry; chemical bonding; states of matter; solution concentrations; acids, bases, and buffers; kinetics; equilibrium; and oxidation-reductional Oriented towards the needs of the health sciences. (Students may not receive credit for CHEM-113, 115, or 117 and for CHEM-111. CHEM-111 and 112 cannot be used as prerequisite courses for organic chemistry.) CHEM-112 SURVEY OF CHEMISTRY II (3-3) 4

(CHEM-111) S, Su

A Continuation of CHEM-111. Covers fundamentals of organic and biological chemistry including structures and functional groups of carbon compounds; carbo-hydrates; lipids; amino acids, peptides, and proteins; enzymes; nucleic acids; body fluids; energy and life. (Students may not receive credit for CHEM-113, 116, or 118 and for CHEM-112. CHEM-111 and 112 cannot be used as prerequisite courses for organic chemistry. Students anticipating the possibility or likelihood of taking organic chemistry must have credit for CHEM-116 or for CHEM-118.)

CHEM-113 FUNDAMENTALS OF CHEMISTRY (3-3) 4 F, Su

(MATH-030 or ACT math score of 16 or higher)

Fundamentals of inorganic, organic, and biological chemistry. Oriented toward the needs of associate degree level, health profession programs.

CHEM-115 FUNDAMENTALS OF CHEMISTRY I (3-3) 4 F, S

(Prerequisite or Concurrent: MATH-126 or MATH-117 or ACT math score of 23 or higher. Satisfactory performance on departmental placement examination recommended.)For students who need at least one year of college chemistry and quantitative relationships. Atomic structure; radioactivity; mole concept; stoichiometry; properties of gases, liquids, and solids; chemical bonding; acids, bases, and salts; solutions. (Students may not receive credit for CHEM-117 and for CHEM-115.)

CHEM-116 FUNDAMENTALS OF CHEMISTRY II (3-3) 4

(CHEM-115) F, S

Thermochemistry; chemical kinetics, equilibria, phase equilibria, acid-base theories, oxidation-reduction, electrochemistry, descriptive chemistry of the elements. (Students may not receive credit for CHEM-118 and for CHEM-116)

CHEM-117 PRINCIPLES OF CHEMISTRY I (3-6) 5 F. S

(High School chemistry and satisfactory performance on departmental placement examination required..)

A more advanced treatment of the principles and theories of chemistry than offered in CHEM-115 and 116. Laboratory includes traditional quantitative analysis methods. Primarily for students specializing in chemistry. Stoichiometry, classical description of bonding, solids, liquids and gases, thermodynamics, chemical equilibria. (Students may not receive credit for CHEM-117 and for CHEM-113 or 115.) CHEM-118 PRINCIPLES OF CHEMISTRY II

(3-6) 5

(CHEM-117) F, S

Continuation of CHEM-117. Chemical equilibria, acid-base chemistry, heterogeneous equilibria, electro-chemistry,

kinetics, nuclear chemistry, quantum chemistry and atomic and molecular structure. (Students may not receive credit for CHEM-118 and for CHEM-116, 115, or 113.)

CHEM-215 ANALYTICAL CHEMISTRY I:

QUANTITATIVE ANALYSIS (2-6) 4

(CHEM-116) F (even years)

Volumetric analysis, gravimetric analysis, solution equilibria, spectrophotometry, separations, electromechanical methods of analysis, and statistical evaluation of experimental data. (Students may not receive credit for CHEM-215 and for CHEM-117 and 118.)

CHEM-233 ORGANIC CHEMISTRY I (3-0) 3

(CHEM-116 or CHEM-118) F

A mechanistic approach to organic reactions using current theories involving reactive intermediates. The relation between structure and reactivity; steric, inductive, and resonance effects; an introduction to chromatography and spectroscopy.

CHEM-234 ORGANIC CHEMISTRY II (3-0) 3

(CHEM-233) S

A continuation of CHEM-233. Specific reaction types including nucleophilic substitution, elimination, addition, aromatic substitution, rearrangements, polymerization; multistep syntheses.

CHEM-235 ORGANIC CHEMISTRY LAB I

(0-3) 1 F

(CHEM-233 or concurrent enrollment)

Experiments involving fundamental organic laboratory techniques; syntheses of organic substances.

CHEM-236 ORGANIC CHEMISTRY LAB II

(0-3) 1 S

(CHEM-234 or concurrent enrollment; and CHEM-235)

A continuation of CHEM-235. Laboratory syntheses and characterization of typical organic substances using instrumentation.

CHEM-241 PHYSICAL CHEMISTRY (3-0) 3 S

(A grade of C or better in CHEM-116, MATh-251, and PHYS-214 or concurrent enrollment) Beginning physical chemistry covering the subjects of chemical thermodynamics, chemical dynamics, and the structure of matter. (Students may not receive credit for CHEM-346 and 348 and for CHEM-241.)

CHEM-242 EXPERIMENTAL PHYSICAL

CHEMISTRY (0-3) 1 S

(Prerequisite or Concurrent CHEM-241 or 346 or 348)

Laboratory work in physical chemistry designed to accompany CHEM-241. Experimental demonstration of the subjects of chemical thermodynamics, chemical dynamics, and the structure of matter.

CHEM-310 ANALYTICAL CHEMISTRY II

INSTRUMENTAL ANALYSIS (3-0) 3 S (odd years) (CHEM-215 or Permission of department.)

Theory and principles of basic electronics, computer interfacing, electrochemistry, spectroscopy, mass spectrometry, and chromatography.

CHEM-313 ANALYTICAL CHEMISTRY LAB II (0-3) 1 S (odd years)

(CHEM-310 or concurrent enrollment.)

Experiments using modern chemical instrumentation. Basic electronics, computer interfacing, electrochemistry, spectroscopy, mass spectometry, and chromatography.

CHEM-322 CHEMISTRY OF INORGANIC

COMPOUNDS (3-0) 3 S (even years)

(CHEM-116 or CHEM-118)

Correlation of reactions and properties of elements and compounds based on modern theories of chemical bonding and structure. Inorganic thermodynamics, acid-base theory, oxidation-reduction chemistry, descriptive chemistry of the elements, symmetry and group theory as applied to IR and Raman spectra, crystal field theory, stereochemistry.

CHEM-323 INORGANIC SYNTHESIS LAB

(0-3) 1 S (even years)

(CHEM-322 or concurrent enrollment)

Application of modern synthetic and spectrochemical methods of analysis to the preparation and characterization of transition-metal and main-group compounds and the handling of air-sensitive materials.

CHEM-346 PHYSICAL CHEMISTRY I (3-0) 3 (MATH-251 and PHYS-214) S

First course in physical chemistry. Study of thermodynamics and chemical equilibria.

CHEM-347 PHYSICAL CHEMISTRY LAB I (0-3) 1(CHEM-346 or concurrent) S

Experimentation illustrating the principles of thermodynamics and chemical equilibria.

CHEM-348 PHYSICAL CHEMISTRY II (3-0) 3 F

(CHEM-346 or CHEE-320; and Math 261 or concurrent) Continuation of CHEM-346. Introduction to quantum theory, statistical thermodynamics, kinetics, and molecular dynamics.

CHEM-349 PHYSICAL CHEMISTRY LAB II (0-3) 1 F

(CHEM-348 or concurrent)

Experimentation illustrating the principles of quantum theory, statistical thermodynamics, kinetics, and molecular dynamics.

CHEM-420 ADVANCED ANALYTICAL CHEMISTRY (3-0) 3 F (even years)

(CHEM-310)

Principles of analytical procedures and separations at an advanced level compared to CHEM-215 and 310.

CHEM-430 ADVANCED INORGANIC CHEMISTRY (3-0) 3 S (even years)

(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 F odd years

(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-450 ADVANCED PHYSICAL CHEMISTRY (3-0) 3 S odd years

(CHEM-348)

Introduction to the quantum theory of chemical bonding. Atomic structure, theoretical spectroscopy, predictions of molecular structures and bond properties.

CHEM-451 BIOCHEMISTRY (3-0) 3

(CHEM-234) or concurrent S

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-461 SELECTED TOPICS IN CHEMISTRY (1 to 4-0) 1 to 4

(Permission of the department)

Individual instruction under supervision of an instructor.

CHEM-462 SEMINAR IN CHEMISTRY (1-0) 1

(Permission of the department)

Instruction in design and presentation of topics of current chemical interest.

CHEM-463 TEACHING PRACTICUM

(1-3 to 9) 2 to 4

(Permission of the department)

Instruction for student assistants in undergraduate chemistry laboratories.

CHEM-464 LABORATORY PRACTICUM

(0-3 to 12) 1 to 4 (Permission of the department) Practical laboratory instruction in analytical and instrumental techniques used in industrial laboratory settings.

CHEM-465 RESEARCH PRACTICUM

(0-3 to 12) 1 to 4

(Permission of the department)

Individual investigations under supervision of an instructor.

CIET - Civil Engineering Technology

Professors Waytowich (Chair); Instructor, Aamidala CIET-114 STATICS (3-0) 3 F/S

(MATH-113) (BMATH-114)

Study of the fundamental principles of mechanics and rigid bodies and the application of these principles to engineering problems.

CIET-115 STRENGTH OF MATERIALS (Both 4) 3 F/S

(CIET-114, MATH 114)

This course includes fundamental stress and strain relationships, torsion, shear and bending moments, stress and deflections in beams and columns, and combined stresses. Laboratory experience relates classroom theory through experiments involving tension, compression, shear, impact, and fatigue on various materials.

CIET-131 CONSTRUCTION MATERIALS

(2-2)3 F

This course is a study of a wide range of materials including steel, nonferrous metals, glass and ceramics, concrete, plastics, and wood.

CIET-141 SURVEYING I (2-3) S

(MATH-114, DRET-120)

Fundamental concepts of surveying and their use in acquiring the data necessary for the preparation of topographic maps. Topics include notekeeping, measurement of distances, angles, and elevations on the earth's surface; azimuth and bearing calculations; field traversing and traverse calculations and methods of topographic mapping. Use of appropriate equipment is emphasized in field labs. Use of current computer software is employed where appropriate.

CIET-144 SURVEYING II (3-3) 4 F (CIET-141)

The application of surveying principles in the design and construction of engineering works. Topics include profiles and cross-sections; construction surveys and earthwork computations; calculations involving circular, parabolic and spiral curves; direct and inverse calculations for geodetic and state plane coordinates; total station surveys and introduction to GPS. In the field labs, appropriate equipment and techniques are employed in the performance of control and location surveys. This subject makes extensive use of current surveying computer packages and integration with other relevant software.

CIET-215 STRUCTURAL STEEL DESIGN (3-0) 3 (CIET-114, BCIET-115) F

A practical study of the analysis and design of steel structural members used in the construction of highways, buildings, and industrial facilities including simple beams, columns, and connections.

CIET-216 STRUCTURAL CONCRETE DESIGN (3-0) 3 S

(CIET-114, CIET-115)

Practical study of the analysis and design of elementary reinforced concrete structural members, including beams, floor systems, columns, footings, and retaining walls.

CIET-222 SOILS AND FOUNDATIONS (2-3) 3 (CIET-114, CIET-115) S

Origin, composition, classification of soils; fundamental soil properties and stresses in soils. Subsurface exploration. Introduction to foundation design and construction of earth structures. Field and laboratory test.

CIET-220 CONSTRUCTION METHODS AND EQUIPMENT (Both 4) 3 F Even

(CIET 131, Jr. Status or consent of instructor)

Study of the methods used in civil engineering construction and the management of equipment that relates to these methods. Topics incude 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-225 CODES, CONTRACTS, AND COST ANALYSIS (3-0) 3 S Even

(INDT 220/420 or permission of instructor)

Economics and time value of money, use of interest formulas, inflation, depreciation, evaluation of public activities, law of contracts, types of construction contracts, professional ethics, critical path, benefit cost ratio, bidding procedure, and specifications.

CIET-230 HYDRAULICS & DRAINAGE (Both 4) 3 (PHYS-201 or permission of instructor) F

Principles of hydrostatics; fundamental concepts of fluid flow in pipes and open channels; methods of estimating storm water runoff; sizing of culverts, storm and sanitary sewers, and open channels. Laboratory experience relates classroom theory through experiments and/or hydraulic computer software.

CIET-245 HIGHWAYS (2-2) 3

(CIET-144) S

This course covers highway and interchange design including planning, surveys and plans, pavement design, drainage, economics and finance, environmental impact, bituminous material, macadam, and main-tenance. Computer software is used. Research paper and presentation required.

CIET-255 CONSTRUCTION ESTIMATING (Both 4) 3 S

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. Considerable use will be made of spreadsheets and an industry-standard estimating computer software package.

CIET-299 CIVIL/SURVEYING PROJECTS

(1-4 credits) As needed

(Consent of the Advisor)

To provide for supervised independent study or projects in Civil Engineering Technology.

CIET-310 SURVEYING LAWS (3-0) 3 As needed

The theory and legal principles of various real property ownerships and rights including conveyances of title to real property will be emphasized. The laws of evidence used to resurvey real property boundaries including rules of evidence evaluation and the role of the property surveyor in boundary disputes and litigations will also be dealt with in this course. Drawing of legal descriptions of (various types and preparation of abstracts along with actual court house research will be included.

CIET-320 CONSTRUCTION METHODS AND EQUIPMENT (Both 4) 3 F Even

(CIET 131, Jr. Status or consent of instructor)

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 (3-0) 3 Even S Jr. Status

Economics and time value of money, use of interest formulas, inflation, depreciation, evaluation of public activities, law of contracts, types of construction contracts, professional ethics, critical path, benefit cost ratio, bidding procedure, and specifications.

CIET-330 COMPUTER APPLICATIONS IN HYDRAULICS AND HYDROLOGY (Both 4) 3 S Even

(CIET 230)

Review of the principles of hydraulics and hydrology; hydraulic calculations using Flowmaster; and storm sewer design using StormCAD. Use of other industry-standard software for water resources applications with emphasis on Haestad Methods.

CIET-341 SURVEYING I (2-3) 3 S

(MATH-114, DRET-120)

The measurement of distance, direction, and elevation on the earth's surface. The plotting of topographic, boundary and route maps. The study of simple and parabolic curves. Introduction to computer software programs for surveying. **CIET-355 CONSTRUCTION ESTIMATING**

$(D_{1}+1)^{2}$

(Both 4) 3 S 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 (Both 4)3 F Odd

(CIET-230, Jr. Status)

This course covers water and air quality, purification of water, treatment and disposal of municipal and industrial wastewater, management of muncipal solid waste and hazardous waste, and control of water and air pollution. Included are routine environmental calculations and elements of the design of treatment and pollution control systems, as well as environmental regulations and impacts. Basic lab and field tests and sampling techniques are also covered.

CIET-499 CIVIL ENGINEERING TECHNOLOGY

PROJECTS (1-4 credits) As needed

(Consent of the Advisor)

To provide for supervised independent study or projects in Surveying Engineering Technology.

CMIS-Computer Information Systems

Associate Professors Marshburn, L. Oxendale, Van Loo.

CMIS-101 FUNDAMENTALS OF COMPUTER APPLICATIONS (3-0) 3

General computer terminology and functions. Capabilities of computers. A "hands-on" familiarity with end-user (nonprogrammer) applications in the area of electronic spreadsheets, database management systems, and word processing. Use of both personal computers and data communications network systems.

CMIS-162 PRINCIPLES OF COMPUTER INFORMATION SYSTEMS (3-0) 3 S

Computer system concepts and operations. Survey of current computer systems hardware and peripherals; internal data and number systems; network and internet configurations. Survey of software systems; levels of programming languages; methods of systems analysis and program design. Professions and certification in information technology; current issues such as security, privacy, and user roles.

CMIS-163 INTERNET APPLICATIONS (3-0) 3 S

General use of the Internet and the World Wide Web. Communications processes including E-mail, news groups, and mail lists. Information search and retrieval tools such as: search engines, white-page directories, Gopher, and FTP. Basic UNIX commands for utilization of Telnet sessions. Hyper-Text Markup Language (HTML) programming statements for Web Page construction, including: frames, embedded images, and hyperlinks. Comparisons of HTML converters and HTML editors.

CMIS-164 VISUAL BASIC FOR BUSINESS APPLICATIONS (3-0) 3 F

(CMIS-101 or equivalent PC experience)

Introduction to programming process, including program design tools, coding and debugging. Design and implementation of programs/projects in Visual Basic 6.0, QuickBasic, and/or VB.NET. Three- step development process: layout form/controls, set properties, then coding. Applications include coding constructs for If-Then-Else, Do-While, and Do-Until control structures; array processing; sequential and direct file processing. Introduction to VBA for office macros.

CMIS-265 VISUAL C#.NET PROGRAMMING FOR WEB APPLICATIONS (3-0) 3 S

(CMIS-164 or other programming experience)

Computer programming of Web applications for business, employing Visual C#.NET syntax and program/data structures, Visual Studio files and ADO.NET databases. Using ASP.NET for Web publishing.

CMIS-267 COBOL PROGRAMMING FOR PC/ WINDOWS APPLICATIONS (3-0) 3

(CMIS-164 or other programming experience)

Computer programming of PC/Windows business applications, employing COBOL syntax and program/data structures, subprogramming, and logic for summary/control break reporting, sequential, indexed and relative file processing, and interactive processing with SCREEN SECTION.

CMIS-360 SYSTEMS ANALYSIS METHODS (3-0) 3 F (CMIS-162), F

Steps involved in systems development: the systems life cycle. Includes a major project emphasizing structured analysis tools and system documentation.

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CMIS-361 STRUCTURED SYSTEMS DESIGN

(3-0) 3 S

(CMIS-360)

Physical design of information systems from functional specifications. Traditional and structured tools for documenting a system design; major design project. Survey of evaluation/selection methods, program development and testing, and implementation methods.

CMIS-363 ADVANCED WEB PAGE DESIGN

(3-0) 3 S-odd

(CMIS-163 and CMIS-266, or consent of the department) Advanced concepts of Web Page design including: frames and hyperlink behavior; on-line forms; Perl and CGI scripting; JavaScript programming; basic concepts of Java Applets; use of multimedia.

CMIS-364 ADVANCED VB.NET AND VBA PROGRAMMING (3-0)

(CMIS-164)

Advanced Web applications with Visual Basic.NET programming: Web forms, objects and classes, data structures, database interactivity. Visual Basic for Applications (VBA) automation of MS Office applications: Word, Excel and Access.

CMIS-368 MAINFRAME APPLICATIONS OF COBOL (3-0) 3

(CMIS-267)

Business applications with mainframe COBOL programming. Use of OS/MVS job control language and selected OS utilities. TSO/ISPF Editor features; library maintenance for source and object libraries. Sequential, VSAM file processing; DB2 and CICS interfacing.

CMIS-461 DATABASE SYSTEMS

DEVELOPMENT FOR BUSINESS (3-0) 3

(CMIS-367, CMIS-360), F-Even

Theory and practical experience in the development

of database information systems to support decision-making in business. Emphasis on the use of database management techniques, including object-oriented design and distributed database management systems. Student project in database design and implementation using a structured query language.

CMIS-463 MANAGEMENT INFORMATION SYSTEMS (3-0) 3 S-Odd

(CMIS-361 or consent of Department), S-Odd

A study of how business managers can and should be involved with information system planning, development and implementation. What information systems are available to managers for decision support and how these resources can be used at all levels of decision making in the major functional management areas. How information technology can be used to support business strategy.

CMIS-464 NETWORKS: LANs/WANs (3-0) 3

(CMIS-162 or equivalent), S-Even

Telecommunications and computer network concepts. Localarea network (LAN) components, architectures, and protocols. Practical applications with client-server and peerto-peer network operating systems. Wide-area network (WAN) configurations; intra-and internet connectivity issues.

CMIS-490 SPECIAL TOPICS: INFORMATION. TECHNOLOGY

(0-1 to 3) 1-3

COOP - Co-Operative Education

Director Miller

(Student enrolls for Co-Op Work Experience to designate an off-campus assignment in industry.)

COOP-205 CO-OP WORK EXPERIENCE I (0-0) 0 COOP-206 CO-OP WORK EXPERIENCE II (0-0) 0 COOP-207 CO-OP WORK EXPERIENCE III (0-0) 0 COOP-208 CO-OP WORK EXPERIENCE IV (0-0) 0 COOP-209 CO-OP WORK EXPERIENCE V (0-0) 0 COOP-502 CO-OP GRADUATE WORK EXPERIENCE I (0-0) 0 COOP-503 CO-OP GRADUATE WORK EXPERIENCE II (0-0) 0 COOP-504 CO-OP GRADUATE WORK EXPERIENCE II (0-0) 0

COSE-Control Systems Engineering

COSE 600 GRADUATE SEMINAR (1-0) 0 Graduate Seminar is required every semester. COSE 601 ADVANCED DIFFERENTIAL EQUATIONS (3-0) 3

Systems of linear ordinary differential equations and nonlinear equations. Linearization, approximation, and stability. Use of dynamic simulation software.

COSE-603 CONTROL SYSTEMS DESIGN (3-0) 3

Derivation of process models; compensation of single-loop and multiloop systems; measures of performance; techniques and computer tools for the design of conventional controllers; implementation issues and current trends in control theory and technology.

COSE 611 MODERN CONTROL THEORY (3-0) 3

Modern techniques for analysis and design of linear control systems. Matrix formulation; multivariable control systems; state variable concepts; linear transformation; controllability; observability; stabilization and pole assignment via state feedback; observer and controller design DAC theory.

COSE 620 DIGITAL CONTROL (3-0) 3 (COSE-611)

Classical and modern methods for analysis and design of discrete-time systems; Z transform; sampling and reconstruction; open-loop discrete systems; system time response characteristics; state variables and transition matrix; controllability and observability; pole-placement design and state estimations; optimal design.

COSE-622 MULTIVARIABLE CONTROL DESIGN (3-0) 3

(COSE 603, COSE 611)

This course builds on COSE 603 by considering multivariable control systems. Issues of stability, robust stability, performance, and robust performance in the context of unstructured and structured uncertainty are addressed. Design techniques presented are based on optimal control ideals and include LQR/LTR and H-Infinity methodology. Model Predictive Control methods are also presented.

COSE 625 STOCHASTIC AND RANDOM PROCESS II (3-0) 3

Laws of probability, random variables, probability distributions, multiple random variables and joint distributions, sequences of random variables, stochastic processes, spectral estimation, mean square estimation, filtering and prediction, Kalman filters and optimal estimators, applications to control systems.

COSE 628 ROBOTICS (3-0) 3

Study of basic components of robot systems, coordinate frame, homogeneous transformation, kinematics for manipulator, inverse kinematics, manipulator-dynamics, Jacobian, control of manipulator and robot programming.

COSE 629 NONLINEAR CONTROL (3-0) 3

(COSE 611, COSE 601)

Classical and modern methods for analysis and design of nonlinear control systems. State space models, phase plane limit cycles, stability, describing functions, relay system stabilization theory, variable structure systems and advanced topics.

COSE 630 OPTIMAL CONTROL THEORY (3-0) 3

(COSE 611; BCOSE 629)

General theory of optimal control of dynamic system, calculus of variations; Pontryagin's maximum principle; Hamilton-Jacobi theory; application of optimal control theory to design of feedback systems, dynamic programming and advanced topics.

COSE 631 ADAPTIVE CONTROL THEORY

(3-0) 3

(COSE 611)

Study of developments in the field of Adaptive Control: stability, convergence of adaptive systems, model reference, self-tuning and robust adaptive control, adaptive observer, auto-tuning and gain scheduling, and advanced topics.

COSE 632 INTELLIGENT CONTROL (3-0) 3

An alternative approach to classical model base control. Employ techniques that can sense and reason about their environment and incorporate the positive intelligent, flexible, and creative attributes of human controllers.

COSE 635 DAC THEORY AND LINEAR

ADAPTIVE CONTROL (3-0) 3

Advanced topics in modern control, in particular Theory of Disturbance Accommodating Controller (DAC), Linear Adaptive based on DAC. State model for disturbance with waveform structure, design of DAC, Philosophies of disturbance accommodating control, and linear adaptive control.

COSE 660 INDIVIDUAL STUDIES

(limit one) (3-0)

(Consent of Graduate Committee)

A current project or topic of special interest to student and professor.

COSE 680 SPECIAL TOPICS (3-0) 3

Topics will be selected depending on the interest of the students and faculty in the course.

COSE 690 PROJECT (3-0) 3

Project course to fulfill the requirements of the Project Option in the Control Systems Program. A project presentation is required.

COSE 699 MASTER THESIS (3-0) 3

Require each term student is working and receiving direction on master's thesis. Minimum of two terms and 6 hours required for M.S. student.

CSCI - Computer Science

Professors Cercone (Chair); Associate Professors Clark, and Smith

CSCI-111 COMPUTER SCIENCE FOR ENGINEERS I (3-0) 3

(BMATH 126 and MATH 128)

An introduction to and study of a high level programming language, including elementary programming techniques with an emphasis on structured programming and engineering applications. Laboratory use of micro computers will be required.

CSCI-115 DISCRETE STRUCTURES (3-0) 3

(ACT score of 23 or better or BMATH 126 and BMATH 128)

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.

CSCI-121 COMPUTER SCIENCE I (3-2) 4

(BMATH-126, BMATH-128 or Math 113 and Math 114) Problem solving methods and algorithm development; programming in a high level language-designing, coding, debugging, and documenting programs using techniques of good programming style.

CSCI-122 COMPUTER SCIENCE II (3-0) 3

(CSCI 121, BMATH 151 and grade of C or better in CSCI 121, BMATH 151 or BMATH 117)

Continuation of Computer Science I with more advanced topics including file processing, access methods, elementary data structures and their implementation in a high level language.

CSCI-210 ALGORITHM DESIGN AND ANALYSIS (3-0) 3 (CSCI 115, CSCI 122)

S semester introduction formal techniques to support the design and analysis of algorithms, focusing on both the underlying mathematical theory and practical consideration of efficiency. Topics include asymptotic complexity bounds, techniques of analysis, algorithmic strategies, and an introduction to automata theory and its application to language translation.

CSCI-221 DATA STRUCTURES (3-0) 3

(CSCI 122 and grade of C or better in CSCI 121)

Introduction to data structures with topics to include search and sort techniques, strings, arrays, stacks, trees, and list techniques. Selected examples will be implemented in a high level language such as Pascal.

CSCI-222 INTRO TO SOFTWARE ENGINEERING (3-0) 3 (CSCI 122)

Principles of Software Engineering will be discussed, including the goals of software engineering of modifiability, efficiency, reliability, and under-standability. These will be implemented using techniques in information hiding, data abstraction, and modularity. Laboratory use of the computer will be required.

CSCI 231 INTRODUCTION TO COMPUTER ORGANIZATION (3-0) 3

(CSCI 122)

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.

CSCI-251 OPERATIONS WORKSHOP I (0-3) 1

(Sophomore standing and consent of the instructor)

An introduction to network processing equipment; familiarization with network software/hardware. Introduction to the basics of a small local area network (LAN) and the basic fundamentals of systems administration for a small network. CSCI 251, CSCI 252, and CSCI 253 must be taken in consecutive semesters (excluding summer terms) with the exception of co-op students.

CSCI-252 OPERATIONS WORKSHOP II (0-3) 1 (CSCI 251)

Continuation of CSCI 251.

CSCI-261 ASCS PROJECTS (3-0) 3 (CSCI 322, 324)

(for AS degree students only - Capstone Design Course) The design, develop and implementation of a programming project related to some area of Computer Science (hardware or software). Requirements include written reports and oral presentations and a final working software project. The study

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of computing ethics, social and environmental issues will be covered as student presentations.

CSCI-263 INTRO TO NETWORKING (3-0) 3 (CSCI 122)

Students will be introduced to the study of networking. The course will focus on the TCP/IP layered model of networking. The topics included will be IP routing, TCP, UDP delivery of packets to client applications. There will be a study of server applications using various protocols for different types of services. The students will have an opportunity to implement these techniques in an UNIX environment.

CSCI-264 DATA BASE MANAGEMENT (3-0) 3 (CSCI 221)

A study of fundamentals of data base models. The primary emphasis will be the relational database model. Data base query language will be examined. The students will receive hands-on experience with a relational data base using the query language SQL.

CSCI-265 INTRO TO COMPUTER LANGUAGES (1-0) 1

(CSCI 111 OR CSCI 121)

An introductory 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.

CSCI-266 e-COMMERCE (3-0) 3

(CSCI 122) F

This course will teach the student how to write the software necessary to implement Internet E-Commerce. The student who completes this class could be employed by a small business to create the web program to sell their product over the web. This application could include, but is not limited to, a customer purchasing products from the internet store; the small business owner updating their catalog; the retrieval of orders from the internet store for shipment to the customer, and the billing of those orders. The student will be exposed to ASP and php technologies to implement Internet E-Commerce.

CSCI-321 INTRO TO NETWORKING (3-0) 3

(CSCI 122)

Students will be introduced to the study of networking. The course will focus on the TCP/IP layered model of networking. The topics included will be IP routing, TCP, UDP delivery of packets to client applications. There will be a study of server applications using various protocols for different types of services. The students will have an opportunity to implement these techniques in an Unix environment.

CSCI 322 SYSTEMS ANALYSIS AND DESIGN METHODOLOGY (3-0) 3

(CSCI-221, CSCI-222)

Introduction to systems analysis techniques. Analyzing the requirements and methods employed from the initial study through implementation; physical design of the system; evaluation of optimum techniques for maximum system independence

CSCI 323 PROGRAMMING LANGUAGE CONCEPTS (3-0) 3

(CSCI-221)

A study of the organization and implementation of programming languages. Topics include characteristics of grammars, Backus-Naur Form, language specification, data types and structures and data flow, the effect of run-time environment on the various features of programming languages, and a brief introduction to parsing. Students will be required to write programs in language such as Pascal, C, FORTRAN, ADA, LISP, and Prolog.

CSCI 324 DATA BASE MANAGEMENT (3-0) 3 (CSCI 221)

A study of fundamentals of data base models. The primary emphasis will be the relational database model. Data base query languages will be examined. The students will receive hands-on experience with a relational data base using the query language SOL.

CSCI-365 COMPUTER LANGUAGES (1-0) 1 (CSCI 221)

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.

CSCI-370 MICROCONTROLLERS (1-0) 1

(CSCI 111 OR CSCI 121 or consent)

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.

CSCI 431 COMPILER DESIGN (3-0) 3

(CSCI 231, 323 or consent)

The study, design and implementation (as a term project) of an assembler or compiler. General reading assignments, discussions and study of linkers and loaders. General overview and discussion of compilers. The student will have to write, either individually or as a team member, an assembler or compiler in some higher level language such as C++.

CSCI 432 INTRODUCTION TO OPERATING SYSTEMS (3-0) 3

(CSCI 231)

I/O and interrupt structure; batch systems; concepts of concurrent asynchronous processes with problems associated with mutual exclusion, synchronization and deadlock; job and processor scheduling; storage management and virtual storage organization; device management.

CSCI-450 ARTIFICIAL INTELLIGENCE (3-0) 3

(CSCI 122, Grade C or better in two MATH 300 level courses)

Basic introduction to Neural Networks, Fuzzy Logic, and Rough Sets with an emphasis on applications. Topics include but are not limited to Back Propagation Neural Networks, Kohonen Neural Networks, Simple Perceptron Neural Networks, Basics of Fuzzy Logic, Basics of Fuzzy Control, and an introduction to Rough Sets.

Topics selected from discrete mathematics and applied to computer science. Students will study sets, algorithms, relations, functions, order relations, trees, groups, semigroups, algebra, boolean algebra, finite state machines, and other topics.

CSCI-453 SPECIAL PROJECTS (1-3)

(Consent of instructor)

An elective computer project designed to stimulate original and creative thought.

CSCI-454 SPECIAL TOPICS (TOPIC TO BE

SPECIFIED) (1-3)

(Consent of Instructor)

CSCI-458 COMPUTER GRAPHICS (3-0) 3

(CSCI 221 or equivalent, MATH 441)

Introduction to Computer Graphics. Topics covered include but will not be limited to graphing, animation, application of linear algebra to translation, rotation and scaling, curve fitting, 3-dimensional graphing, computer art.

CSCI-461 SENIOR PROJECT (3-0) 3 (CSCI 322, 324)

The design, development and implementation of a project related to some area of Computer Science (hardware or software). Requirements include written reports and oral presentations. The study of computing ethics, social and environmental issues will be covered as student presentations.

CSCI-480 ADVANCED CS MATH (3-0) 3

(MATH 441 and MATH 448)

Topics include applied numerical methods, statistical computing techniques, data smoothing and filtering. Emphasis will place on design and implementation. Students will utilize software packages such as SAS, MatLab, or MathCad.

CTED - Career-Technical Education

Associate Professors Yocke, Summerfield (Chair); Assistant Professors Cummings, Riffle

CTED-100 Career Technical 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 vocational education for the vocational 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 vocational curriculum content. Determination of course goals and objectives. Involvement of advisory committees for vocational 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 shoporganization 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 COMPUTERS APPLICATIONS IN CAREER TECHNICAL EDUCATION (3-0) 3

This course is designed to introduce students to computerbased 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 basic skills in the 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-404 CAREER TECHNICAL GUIDANCE (3-0) 3

Theories, background, and practices of vocational guidance including; promotion, selection of occupations, training programs, placement responsibilities, and follow-up techniques. Relationships between vocational guidance programs and educational and community agencies, including vocational-technical education.

CTED-405-406-407-408 SPECIAL PROBLEMS IN CAREER TECHNICAL EDUCATION

(1 to 3) 1 to 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.

CTED-409 COORDINATION OF CAREER TECHNICAL YOUTH ACTIVITIES (3-0) 3

Purpose and scope of VICA and other youth organizations. Application of youth activities within the related classroom instruction in vocational-technical education. Current trends in the development and movement of youth activities in America.

CTED-410 CAREER EDUCATION (3-0) 3

Analysis of the role of career-technical education within the area of career education. Organizing a plan for including career-technical education. Current trends in the development and movement of youth 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 TEACHING (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-414 METRICS IN CAREER TECHNICAL EDUCATION (3-0) 3

The "SI" metric system, relationship between metric and decimal systems, metric terminology, metric applications in length, area, volume, mass, and temperature, metric to metric conversion, imperial to metric conversions, teaching the metric system, application of the metric system to career technical specializations.

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-417 PRINCIPLES AND TECHNIQUES IN CAREER TECHNICAL EDUCATION (3-0) 3

A study of the concepts of Industrial Education. The development of questioning and answering techniques in the vocational setting. The selection and correlation of teaching aids.

CTED-418 DEMONSTRATIONS FOR TEACHERS IN CAREER TECHNICAL EDUCATION (3-0) 3

The presentation of specific demonstrations to selected teachers and student in the vocational teachers 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. Observation of the industrial application of job skills in the teacher's specialization. Comparison of industrial and vocational education shops and laboratories.

CTED-420 SCHOOL-COMMUNITY RELATIONS IN CAREER TECHNICAL EDUCATION (3-0) 3

Organization and planning for a program of schoolcommunity 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 hours

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 INDUSTRIAL PROCESSES (1 hr.) CTED-424 INDUSTRIAL PROCESSES (2 hrs.) CTED-425 INDUSTRIAL PROCESSES (3 hrs.)

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/lab 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/lab methods and Techniques.

CTED-486 INTERDISCIPLINARY STUDIES SENIOR PROJECT (3-4)

(Consent of Department)

Design and completion of Interdisciplinary Project. Requires approval of faculty committee.

CVLE - Civil Engineering

Professors Leftwich (chair), Murthy; Assistant Professors Ashour, Gang, Lee, Nunoo, Zatar.

CVLE-201 CONCRETE CANOE/STEEL BRIDGE DESIGN AND CONSTRUCTION (1-0) 1

(Open to all students in Civil Engineering or Civil Engineering Technology) As needed

Students participate in the concrete canoe and/or steel bridge design and construction for competition in the annual American Society of Civil Engineers (ASCE) Virginias' Conference.

CVLE-212 STRUCTURAL ANALYSIS (4-0) 4 (GENE-243, BMATH-251) F&S

Analysis of forces and deflections in determinate and indeterminate structures; influence lines for beams and trusses; dead, live, snow, and wind loads on structures; and introduction to computer programs for structural analysis. **CVLE-241 SURVEYING (2-3) 3**

(BGPHS-120, MATH-126, MATH-128) F

The measurement of distances, directions, elevations and areas on the earth's surface; introduction to route surveying; introduction to computer programs for surveying.

CVLE-321 ENGINEERING MATERIALS (2-3) 3 (GENE-243) S

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.

CVLE-322 SOIL MECHANICS (3-3) 4

(GENE-243; PHSC-312) F

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.

CVLE-342 TRANSPORTATION ENGINEERING (3-0) 3 (CVLE-241, GENE-242) S

Introduction to transportation systems – highway, rail, water, and air transportation; organization and administration; vehicle and human characteristics; rectilinear and curvilinear vehicle motion; location and design and planning of highways, highway geometric design; earthwork; traffic studies; intersections and interchanges; aircraft characteristics; air navigation and safety; airport layout and design; inland waterways; ports and harbors; and railroad geometric design, cross sectional elements, operations, and terminals.

CVLE-413 REINFORCED CONCRETE DESIGN (2-3) 3 (BCVLE-212) S

Theory of reinforced concrete; design using ACI 318 working stress and ultimate strength methods; design of beams, one-way slabs, and columns using ultimate strength design; and development lengths and splices.

CVLE-414 STRUCTURAL STEEL DESIGN (2-3) 3 (CVLE-212) F

Design of tension members, columns, beams, beamcolumns, and connections using current AISC specifications. Introduction to the design of steel structures.

CVLE-415 ADVANCED STRUCTURAL ANALYSIS (3, 0) 3 F-Even

(CVLE-212, MATH-261, BCVLE-413 or 414)

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.

CVLE-417 TIMBER DESIGN (2-3) 3

(CVLE-212) F-Odd

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 beamcolumns; introduction to plywood and glue-laminated members; and the analysis and design of structural diaphragms and shear walls.

CVLE-421 GROUNDWATER & SEEPAGE (3-0) 3 (CVLE-322) S

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.

CVLE-425 FOUNDATION DESIGN (3-0) 3 (CVLE-322, CVLE-413) F

(CVEE-522, CVEE-415) T

Subsurface exploration; bearing capacity; settlement analysis; shallow foundations; design of square and rectangular footings; design of combined footings; analysis and design of gravity and cantilever retaining walls; introduction to deep foundations; foundation design project.

CVLE-431 HYDRAULIC ENGINEERING (3-3) 4 (GENE-331) F

Hydraulic flow in pipes: series, parallel, branched, and pipe networks, water hammer, surge tanks, pumps and turbines. Basic open channel flow. Elements of storm and sanitary sewer design. Dams and reservoirs. Laboratory experiments and report writing in several areas of fluid mechanics and hydraulics.

CVLE-432 SANITARY ENGINEERING (3-3) 4

(GENE-331, CHEM-116) S

Environmental laws; water quality and quantity; physical, chemical, and biological treatment of water and wastewater; environmental laboratory techniques.

CVLE-433 ADVANCED HYDRAULIC

ENGINEERING (3-0) 3 S (CVLE-431)

Basic open channel flow concepts; energy and momentum principles in open channel flow; flow resistance; channel controls and transitions. Hydrology: physical and quantitative; rational, SCS.

CVLE-434 ADVANCED SANITARY ENGINEERING (3-0) 3

(CVLE-432) F

Contemporary practices in sewage disposal and advanced waste treatment. Design of sedimentation units, biological treatment units, disinfection and advanced waste treatment units.

CVLE-435 SOLID WASTE MANAGEMENT (3-0) 3

(CHEM-116, CVLE-322) S

History of solid waste management. Laws and regulations retaining 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.

CVLE-443 HIGHWAY DESIGN (3-0) 3

(CVLE-241, CVLE-342) S

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.

CVLE-444 PAVEMENT DESIGN (3-0) 3 (CVLE-321, CVLE-322, CVLE-342) F

Stresses in flexible and rigid pavements; equivalent single wheel load; design for frost penetration; soil classification; strength-density-moisture considerations; bases and subbases; soil stabilization; design of flexible airport and highway pavements; design of rigid airport and highway pavements; strengthening existing pavements.

CVLE-453 CIVIL ENGINEERING PROJECTS (3-0) 3

(Senior Standing) F & S

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.

CVLE-490 SPECIAL TOPICS IN

CIVIL ENGINEERING (variable credit) (1-4) As needed

Topics to be selected depending on the interest of the student and faculty.

CVLE-491 CIVIL ENGINEERING RESEARCH

(variable credit) (1-3) As needed

(Junior standing with department chair and instructor permission)

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.

DENT - Dental Hygiene

Associate Professors France; Mallory (Chair); Assistant Professor Johnson

DENT-125 DENTAL EMBRYOLOGY, HISTOLOGY & ANATOMY (3-0) 3 F

(fIDENT 132, 141, 152; BIOL 233; CHEM 113)

This course will provide an introduction to the microscopic structures of the tissues which comprise the face, the oral cavity, and the structure within the oral cavity. This includes tooth development, enamel, dentin, cementum, pulp, periodontal ligament, alveolar bone, and the CEJ. It will include a detailed study of the morphological characteristics of the permanent and primary teeth: intra-arch relationships of the teeth and the role this relationship plays in promoting health of the dental supportive structures; eruption sequence of the permanent and primary dentitions; and numbering systems of both dentitions.

DENT-126 HEAD & NECK ANATOMY (2-0) 2 S

(DENT-125, 132, 141, 152; BIOL-233; CHEM 113) (fIDENT-134, 146, 154, 156, 158; BIOL 240) Includes identification of the extra-oral facial landmarks; and a detailed study of the intra-oral structures and tissues; bones of the skull; the muscles, blood vessels, nerves, and lymphatics of the head and neck; the salivary glands; and the temporomandibular joint.

DENT-132 DENTAL HYGIENE I (3-6) 5 F

(fIDENT-125, 141, 152; BIOL-233; CHEM-113)

Introduction to the role and function of the dental hygienist in preventive dentistry and clinical practice; relationship of general and oral health and disease and dental emergencies; laboratory and clinical hours are devoted to development of basic skills of examination, debridement, plaque removal, sterilization, and patient counseling. Meets freshman seminar objectives.

DENT-134 DENTAL HYGIENE CLINIC II (0-9) 3 S

(DENT-125, 132, 141, 152; BIOL 233; CHEM 113)

(BDENT-126, 146, 154, 156, 158; BIOL 240) Nine hours of clinical practice per week with emphasis on developing patient treatment and assessment skills.

DENT-141 RADIOLOGY (1-2) 2 F

(BDENT-125, 132, 152; BIOL-233; CHEM 113)

The lecture portion of this course will deal with the history, basic principles, biological effects, and the role of radiographs in dental treatment. The laboratory portion will deal with instruction on darkroom procedures, bisection of the angle and paralleling technique, exposing panorex and occlusal films, and the mounting and interpretation of radiographs.

DENT-146 DENTAL MATERIALS (1-2) 2 S

(DENT-125, 132, 141, 152; BIOL 233; CHEM 113)

BDENT-126, 134, 154, 156, 158; BIOL 240)

General composition, properties and manipulation of dental materials as they apply to current dental practice and theory. Laboratory devoted to observation performance and manipulation of dental materials correlated with clinical dentistry.

DENT-151 NUTRITION (2-0) 2 F

A detailed study of nutrition as applied to general health. Introduction of nutritional counseling and dietary evaluation will be included.

DENT-152 SUPPORTIVE CLINICAL SERVICES (1-0) 1 F

(BDENT-125, 132, 141; BIOL-233; CHEM 113)

A study of clinical services performed by the dental hygienist to support basic clinical care. Topics include, but not limited to, preventive dentistry, hypersensitivity control/treatment, cavitron/prophy jet and appointment/patient management.

DENT-154 PERIODONTICS (2-0) 2 S

(DENT-125, 132, 141, 152; BIOL-233; CHEM 113) (BDENT-126, 134, 146, 156, 158; BIOL-240)

This course will provide instruction in etiology of gingival and periodontal disease. A study and application of clinical services performed by dental hygienists to support clinical care. Topics include treatment of diseases and conditions of the supporting and surrounding tissues of the teeth or their implanted substitutes.

DENT-156 PHARMACOLOGY (2-0) 2 S

(DENT-125, 132, 141, 152; BIOL 233; CHEM-113)

(BDENT-126, 134, 146, 154, 158; BIOL-240)

A study of the drugs used in and concerned with the practice of dentistry, their classification, usage, methods of administration, and toxicology.

DENT-158 SPECIAL PATIENT CARE (2-0) 2 S

(DENT-125, 132, 141, 152; BIOL-233; CHEM 113)

(BDENT-126, 134, 146, 154, 156; BIOL 240)

A study of the application of dental hygiene principles in the management of patients with special needs.

DENT-225 PATHOLOGY (2-0) 2 F

(DENT-125, 132, 141, 152, 126, 134, 146, 154, 156, 158; BIOL-233, 240; CHEM 113)

(BDENT-151, 237, 240, 260)

Responses of the organism to general and oral disease conditions; abnormalities of the head, neck and periodontium; early recognition and prevention of diseases within the scope of responsibility and practice of the dental hygienist.

DENT-237 DENTAL HYGIENE CLINIC III (0-12) 4 F

(DENT-125, 132, 141, 152, 126, 134, 146, 154, 156, 158; BIOL-233, 240; CHEM 113) (BDENT-151, 225, 240, 260) Twelve hours of clinical practice per week with emphasis on strengthening clinical skills, particularly with patients demonstrating moderate to advanced periodontal disease. Extramural clinical rotations at various area clinics/health care facilities.

DENT-239 DENTAL HYGIENE CLINIC IV (0-15) 5 S

(DENT-132, 134, 237) (BDENT-258, 262)

Fifteen hours of clinical practice per week with emphasis on refining clinical skills, with particular emphasis on total patient care and treatment of patients demonstrating moderate to advanced periodontal disease. Extramural clinical rotations at various area clinics/health care facilities. **DENT-240 EXPANDED DENTAL HYGIENE**

FUNCTIONS (2-0) 2 F

(DENT-146, 134) (BDENT-237)

A study of functions which may be performed by the dental hygienist in an expanded role including, but not limited to, four handed dentistry, pulp testing, orthodontic debonding, cytology, intraoral photography and local anesthesia.

DENT-258 ETHICS & PRACTICE MANAGEMENT (2-0) 2 S

(DENT-237, BDENT-239)

A study of the ethics and legal principles involved in dental hygiene practice and preparation for employment through resume' writing and interviewing. The course also provides a review of the role of the dental hygienist

in practice management in a variety of practice settings. **DENT-260 DENTAL HEALTH EDUCATION**

(2-0) 2 F

(DENT-134, 152, 158,

(BDENT-151, 237)

A study of the planning and implementation of dental health education with emphasis on educational principles, methodologies and programs for specific populations. DENT-262 COMMUNITY HEALTH (2-2) 3

s

(DENT 260, 237, 240) (BDENT 239, 258)

A continuation of Dental Health Education. Community Health program planning and application as demonstrated by conducting programs in local schools and other area facilities.

DENT-299 SPECIAL TOPICS IN-DENTAL HYGIENE (1-4 credits) S

Independent study of topic(s) pertinent to the profession of dental hygiene or to dental hygiene practice. Designed for students who have successfully completed one year of dental hygiene.

DISL – Diesel Technology

DISL 110 DIESEL ENGINES 1 (3 -3) 4"

The foundation for this course is the fundamentals of operation and construction of two and four stroke cycle diesel engines. All the engine components and support systems will be included. Lab work stresses proper disassembly, inspection, measuring, diagnosis, parts ordering, reassembly and tune-up. Tune-up and troubleshooting procedures will be done on live engines in our lab. Students should learn the proper diagnosis and repair of support system components. Safety, care and use of hand tools and shop equipment and handling hazardous materials is included in this course.

DISL 111 DIESEL ENGINES II (3-3) 4

(DISL 110)

The foundation of this course will be complete engine overhaul. The overhaul of engine support system components will be included. Lab work will include, disassembly, cleaning, inspection, measuring and determining reusable parts. Use of OEM service procedures, specifications and torque values will be stressed. This course will also include Hydromechanical Diesel Fuel Injection systems operation. Troubleshooting and timing pumps and injectors to the engine will also be stressed.

DISL 120 SUSPENSION & STEERING () 3

The fundamentals of the chassis, including steering geometry, steering and suspension systems, geometric center-line alignment, thrust angle alignment and all wheel alignment provides the focus of this course. Proper procedures in diagnosis of steering and suspension systems for replacing components are also covered. Lab work includes steering and suspension repair and all wheel alignment on computerized alignment equipment, utilizing training aids and live vehicles. Safety, care and use of hand tools and shop equipment and handling of hazardous materials are taught in this course

DISL 220 ELECTRICAL/ELECTRONIC SYSTEMS (3-3) 4

This course will be dedicated to diesel engine and truck electrical systems and electronic management systems. It begins with a review of the fundamentals of electricity and electronics and proceeds into batteries, starting systems, charging systems, lighting, instrumentation and electronic engine controls. Fundamentals of electronic controlled fuel injection systems will be stressed. Use of electronic diagnostic service tools to troubleshoot, test and repair electronic controlled diesel engines will be covered in detail. Students will learn the proper diagnostic and testing procedures of electronic controls found on diesel engines. Lab task will include the use of digital mulitmeters, computers and software and wiring and terminal repair techniques.

DISL 230 DRIVE TRAIN (3-3) 3

In this course students will be taught the fundamentals of gearing and drive line angles, basic operation of clutches, transmissions, differentials and drive lines. Students will disassemble, measure and reassemble to factory specifications clutches, transmissions, differentials and drivelines for medium and heavy duty trucks. Students will observe all safety rules and learn the proper care and use of shop and hand tools.

DISL 240 BRAKES (3-3) 4

The foundation for this course is the operation and construction of the medium and heavy truck air and hydraulic brake system. Students will study medium and heavy-duty truck brake system, air system components, foundation brakes and brake maintenance. Upon completion of this course, students should know the theory of operation and have the skills to troubleshoot and repair truck air brake systems, hydraulic brake systems and perform proper preventive maintenance. The students will perform these skills on training aids and class seven and eight trucks. Safety, care and use of hand and shop tools and handling hazardous materials is taught in this and all courses.

DISL 250 PREVENTIVE MAINTENANCE () 3

The foundation of this course is preventive maintenance and inspection of trucks and heavy equipment. Students will study the service and preventive maintenance practices commonly found in the trucking industry as well as heavy equipment. Students will understand the benefits of a wellplanned preventive maintenance program. Upon completion of this course students should be able to do a pre-trip inspection, describe the criteria for deadlining or out-ofservice tagging a vehicle. Students will have a basic understanding of inspector qualifications and record keeping requirements. Students will select the correct lubricants and tools to service a vehicle or peace of equipment. Safety and care and use of hand and shop tools to perform preventive maintenance, as well handling hazardous materials will be taught in this and all courses. Detailed preventive maintenance of each system is covered in the individual courses of this program.

DRET - Computerized Drafting and Design Engineering Technology

Professor Javins (Chair); Associate Professor King, Fernando

DRET-120 DRAFTING I (Both 4) 2 F/S

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-121 DRAFTING II (Both 4) 2 F/S (DRET-120)

Teaches basic mechanical drafting techniques covering auxiliary views, working drawings, and tolerancing; basic descriptive geometry; and mapping. Also covers computer graphics, taking up where Drafting I leaves off.

DRET-201 ELECTRICAL AND ELECTRONIC DRAFTING (Both 4) 2 F/S (DRET-120)

Introduction to the current practices and developments in both electrical and electronic drafting. Methods used to produce technical drawings required by industry will be explored using AutoCAD. Students will learn block diagrams, control drawings, logic diagrams, schematic diagrams, printed circuit board drawings, integrated circuit drawings, ladder diagrams, and interconnecting diagrams. Current techniques to produce electrical design and working drawings will also be studied. Interaction and coordination of projects with ELET courses is encouraged with permission of instructor.

DRET-202 ARCHITECTURAL DRAFTING

(Both 6) 3 F

(DRET-121 or "fl" or higher in DRET 120 or permission of instructor)

Functional planning and design of residences and allied structures; experiences in designing, drawing, calculation costs, and preparing specifications and presentation drawings.

DRET-204 STRUCTURAL DRAFTING (Both 6) 3 S

(DRET-121) (BCIET 115)

Techniques in preparing design and working drawings for various structures in wood, concrete, and steel. Drawings

will be produced using AutoCAD. Neatness and ability to make systematic computations emphasized. Interaction and coordination of projects with CIET courses is encouraged with permission of instructor.

DRET-212 PIPING AND SHEET METAL DRAFTING (Both 6) 3 F

(DRET-121)

Design, layout and graphical treatment of piping systems. Emphasis on standard symbols and nomenclature and schematic, pictorial, multiview representation. Design and layout of patterns for fabrication from sheet materials. Emphasis on theory or developments, sheet materials, forming processes, and use of standard forming tables.

DRET-214 COMPUTER GRAPHICS (2-2) 3 F/S

(DRET-120, BDRET-121 or permission of instructor) 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.

DRET-215 ADVANCED COMPUTER-AIDED DRAFTING (2-3) 3 F

(DRET-214)

Course continues the development of skills in the use of computer graphics. It utilizes all skills learned in DRET-214 and further develops them by exposing students to more powerful software and equipment. Concentrates on AutoCAD's 3D and solid modeling applications to include wire frame modeling, surface modeling, region modeling, primitives, and Boolean operations.

DRET-216 ENGINEERING DESIGN GRAPHICS (Both 6) 3 S

(DRET-121, MEET-121, MATH-113, DRET-202, and MEET- 225 or consent of department head)

The design process, problem identification, refinement and analysis using both computer (CAD) and mechanical drafting. Implementation skills to include multiview sketching and drawing, auxiliary views, working and pictorial drawings, sections, dimensioning, tolerances; screws and fasteners, gears and cams. Design projects will be assigned throughout and oral presentation will be required.

DRET-284 MICROSTATION (2-3) 3

(DRET-214 or permission of instructor)

This course will introduce the student to the basic operation of MicroStation CAD software. Some comparisons to AutoCAD will be made. Included in this course are loading existing design files; new design file creation and setup; construction and modification within design files; cell library concepts; dimensioning; and plotting.

DRET-285 LAND & TOPOGRAPHIC DESIGN

(2-3) 3

(DRET-214)

Students are introduced to various topographic-related drawings and design principles utilizing specialized design software intended for this purpose. Emphasis is placed on conventions and practices that are used by CAD professionals working in the civil, surveying, and mapping fields.

DRET-286 PARAMETRIC MODELING

(2-3) 3

(DRET-214)

The creation of three-dimensional parametric models are used in the design process to develop solutions to design problems. Specialized design software is used to create designs and perform various analytical functions on them. Creation of engineering drawings from parametric models; assembly of components to make adaptive assemblies; and generation of presentation files for technical illustrations are studied.

DRET-287 ILLUSTRATIONS & ANIMATIONS (2-3) 3

(DRET-214)

Emphasis is place on the creation of drawings and design solutions to be used on a presentation level. Design software is used to not only create camera-ready presentation drawings, but also explore the use of animation technology to better present design solutions.

DRET-299 DRAFTING AND DESIGN PROJECTS (1-3 credits)

(Consent of the department)

Select studies in Computerized Drafting and Design Engineering Technology.

DRET-314 COMPUTER GRAPHICS (2-2) 3 F/S

(DRET-120)(BDRET-121 or consent of instructor) (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.

DRET-315 ADVANCED COMPUTER-AIDED DRAFTING (2-3) 3 F

(DRET-214) (For non-drafting majors)

Course continues the development of skills in the use of computer graphics. It utilizes all skills learned in DRET-214 and further develops them by exposing students to more powerful software and equipment. Concentrates on AutoCAD's 3D and solid modeling applications to include wire frame modeling, surface modeling, region modeling, primitives, and Boolean operations.

ECON - Economics/Labor Relations

(Department of Social Sciences) Professors J. David, (Chair), Shaaban; Associate Professor Gupta

ECON-107 CONSUMER ECONOMICS (3-0) 3

Introduction to basic topics in economics with special emphasis on current events.

ECON-231 PRINCIPLES OF ECONOMICS I (3-0) 3

National income accounting; business cycle; level of output, employment and income; fiscal policy; the banking system; stability of growth; international trade and balance of payments.

CON-232 PRINCIPLES OF ECONOMICS II (3-0) 3

(ECON-231)

Supply, demand and market price; cost of production; market structure; perfect competition, monopoly, oligopoly, imperfect competition; allocation of resources: wages, interest, rent and profit; current domestic economic problems.

ECON-235 PUBLIC FINANCE (3-0) 3 Annual

Theory and policy of financing government; principal sources of public revenues; public expenditures; probable incidences; major tax types; intergovernmental fiscal relations; public credit.

ECON-240 INTRODUCTION TO LABOR UNIONS (3-0) 3 Annual

Structure, function and activities of labor unions and labor organizations; theories of labor organizational comparative labor movements; survey of labor and industrial relations.

ECON-260 SPECIAL TOPICS IN ECONOMICS (3-0) 3

Special topics in economics and current economic problems.

318

ECON-301 INTERMEDIATE THEORY: PRICE AND MARKETS (3-0) 3

(ECON-231; ECON-232; MATH-Core) Annual

Advanced micro-economic theory; microstatics, consumer preferences and indifference maps, production costs, isoquants, growth, economics of scale, market structure models and welfare economics.

ECON-320 ECONOMIC HISTORY OF THE AMERICAN LABOR MOVEMENT (3-0) 3 Biennial

Labor in colonial America; use of slave and immigrant manpower; economic development and its effect on labor; early beginnings and development of unions; development of industrial relations.

ECON-331 MONEY, BANKING, AND FISCAL POLICY (3-0) 3

(ECON-231, ECON-232;

or consent of Department Chair)

Money and the banking system; commercial bank creation of money; Federal Reserve System; national income analysis; monetary policy and fiscal policy.

ECON-335 PUBLIC FINANCE (3-0) 3 Annual

Theory and policy of financing government; principal sources of public revenues; public expenditures; probable incidences; major tax types; intergovernmental fiscal relations; public credit.

ECON-337 INDUSTRIAL RELATIONS (3-0) 3

(ECON-231 or consent of Department Chair or Instructor)

Economic and political aspects of labor-management relationships; workers problems; union history, organization and policy; collection bargaining and settlement of labor disputes; labor legislation.

ECON-345 LABOR LAW (3-0) 3 Annual

Evolution of labor legislation in the U.S.; Sherman Act, Clayton Act, NIRA; Wagner Act, Taft-Hartley Act; Landrum-Griffin Act. Jurisdictional disputes; freedom of speech; solicitation of membership; voting rights of strikers; picketing; secondary boycotts; strike regulations; labor and anti-trust regulations; growing role of government in collective bargaining. Study and use of professional and reference materials.

ECON-346 INTERPRETING LABOR AGREEMENTS (3-0) 3 Biennial

(ECON-345 or consent of Department Chair)

This course will focus on the language, design, and structure of contracts; the function of the grievance procedure; and the understanding of contract provisions. Court and arbitration decisions will be used as case studies. Study and use of professional and reference materials.

ECON-347 Government Regulation of Economic Activity (3–0) 3

(Econ 231; Econ 232, or consent of Department Chair) Antitrust laws, relative concentration; antitrust in a single product and a multiple product context; vertical and horizontal integration; price discrimination; vertical and conglomerate mergers.

ECON-348 ARBITRATION PRACTICES AND PROCEDURES (3-0) 3 Biennial

(ECON-345 or consent of Department Chair)

Orientation toward practice and procedure in labor arbitration, including preparation and presentation of a labor arbitration case (role of representatives and arbitrator, evidence, remedies, opening statements and closing arguments, transcripts, post-hearing briefs, study and use of professional and reference materials): extensive reference to and use of the National Bituminous Coal Wage Agreement(s).

ECON-360 EMPLOYEE RELATIONS LAW

(3-0) 3 Biennial

Government regulation of personnel; equal employment opportunity; workers compensation; Occupational Safety and Health Act; unemployment compensation; Employee Retirement Income Security Act.

ECON-370 WAGE THEORY AND ADMINISTRATION (3-0) 3 Biennial

(ECON-231; ECON-232; ECON-350; or consent of Department Chair)

Development of wage theories; wage/salary determination processes; wages structures; impact of wage differentials; wage administration; meriting systems; implementation and effect of government regulations.

ECON-401 MANAGERIAL ECONOMICS (3-0) 3 (MATH-CORE)

Cost and revenue analysis; compound interest model for profitability analysis; planning working model for profitability analysis; planning working capital needs; replacement policy; inventories; linear programming; estimating demand, cost and pricing.

ECON-430 COLLECTIVE BARĞAINING (3-0) 3 Annual

(ECON-231, ECON-232; or consent of Department Chair) 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-435 HISTORY OF ECONOMIC THOUGHT

(3-0) 3 Biennial

(ECON-231; ECON-232 or consent of Department Chair) Economic thought from Plato to the present, including mercantilist, classical, marginalist, and Keynesian schools of thought.

ECON-449 GLOBAL ECONOMIC ISSUES (3-0) 3 Biennial

(ECON-231; ECON-232 or consent of Department Chair) Analysis of the nature and problems of less developed economics and various strategies for stimulating economic development; theory of international trade, the balance of payments, international capital flows, exchange rates, and commercial policies affecting trade relations.

ECON-450 READING AND RESEARCH IN ECONOMICS (1-3)

(Consent of instructor and one course in the discipline) Directed readings and research in micro, macro, labor, and applied economics, with book reviews, consultations, and projects.

ECON-460 SPECIAL TOPICS IN ECONOMICS (1-3)

Special topics in economics and current economic problems. ECON-470 SEMINAR IN CONTEMPORARY

LABOR PROBLEMS (3-0) 3

(Consent of Department Chair)

ECON-475 SEMINAR ON COMMUNITY ECONOMIC DEVELOPMENT (3-0) 3

(Consent of Department Chair)

EDUC - Education

Associate Professor Perry.

EDUC-100 EDUCATION COLLOGUIUM F

Components of and requirements for the teacher preparation program, including specializations, professional organizations, requirements for admission to the major avenues to program completion, and requirements for work with children or youth. (First offered F 1995).

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EDUC-200 PROFESSIONAL INQUIRY IN EDUCATION

(3-0) 3 (EDUC-100, ENGL-101 and 102) S

An examination of students' preconceptions about education and their socialization process relative to the following: aims and purposes of public education, students as learners, curriculum, instruction. (First offered S 1997).

EDUC-201 PSYCHOLOGY OF DEVELOPMENT (3-0) 3

Hereditary and environmental factors influencing physical, social, mental, moral and emotional development of the individual from conception through adolescence. Special emphasis on relating the middle and late childhood, and adolescence development to the Appalachian educational setting.

EDUC-301 LEARNIN IN EDUCATIONAL SETTINGS I Fall.

2 hr. (Admission to the major, grade of C or better in EDUC 200)

PSYC 1 and one course in human development. Examination and utilization (with initial emphasis upon examination) of learning models and paradigms from behavioral and cognitive perspectives; consideration of learner characteristics, attitudes, motivations, thinking processes, and subject matter content affecting student learning. (First offered F 1997).

EDUC-302 LEARNING IN EDUCATIONAL SETTINGS II (2 hr) S

(Admission to the major, grade of C or better in both EDUC-301 and EDUC-311)

Analysis and application of learning models and paradigms from behavioral and cognitive perspectives; consideration of learner characteristics, attitudes, motivations, thinking processes, and subject matter content affecting student learning.

EDUC-311 PRACTICUM I (1 hr) F

(Admission to the major, grade of C or better in EDUC 200, Conc.: EDUC-301)

Application of models and paradigms of learning in content area through tutoring of individuals and small groups in an assigned public school site.

EDUC-312 PRACTICUM II (1 hr) S

(Admission to the major. Grade of C or better in

EDUC 311) Conc; EDUC 302

Application of paradigms of learning in content area through tutoring of individuals and small groups in an assigned public school site.

EDUC-300 SCHOOL AND SOCIETY (3-0) 3

(Departmental approval required.)

American school in its cultural context. Educational aims, organization, social trends, historical traditions, financial aims, legal development and contemporary issues.

EDUC-305 PSYCHOLOGY OF LEARNING

(3-0)3

(Departmental approval required.)

Basic Learning Processes and application to instruction, Includes design of instruction consistent with principles of learning.

ELCE - Electrical and Computer Engineering

Professors Taylor (Chair), Davari, Farooq, Goodman, Ram; Assistant Professor Wu

ELCE-200 SOFTWARE TOOLS (1-3) 2

(BMATH 155)

Introduction to the principal software tools used by electrical and computer engineers, including Excel, PowerPoint, Pspice Δ and Matlab. Students will solve real-world problems using simulation tools and report their results.

ELCE-220 CIRCUITS I (3-0) 3

(C or better in MATH-156)

Definition of current, voltage, power, energy, resistance, capacitance, and inductance. 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, source transformation, Thevenin and Norton equivalent circuits, nodal analysis, and mesh analysis. Definition of average and RMS values, basic power equations for resistive and phasor circuits. Software tools: PspiceA, Matlab.

ELCE-222 CIRCUITS LAB (0-3) 1

(BELCE 220)

Electrical laboratory practice and procedures. DC and AC circuit labs demonstrating the basic laws of circuit analysis, electrical measurement instrumentation, circuits analysis software, analysis of experimental data by means of linear regression and comparison with Gaussian distributions and electrical calculations.

ELCE-223 CIRCUITS II (3-3) 4

(BMATH 261, C or better in ELCE 220 and ELCE-222) Transient response of first-and second-order systems. Balanced three-phase circuits. Mutual inductance, transformers, resonance, network functions and two Bode's Plot. Active filters with operational amplifiers. Software tools: Pspice∆, Matlab.

ELCE 225 CIRCUITS II (3-0)3

(B MATH 261, C or better in ELCE 220 and ELCE 222) Transient response of first- and second-order systems. Balanced three-phase circuits. Mutual inductance, transformers, resonance, network functions and two Bodes Plot. Active filters with operational amplifiers. Software tools: Pspice/E, Matlab.

ELCE-271 DIGITAL LOGIC DESIGN (3-3) 4

(C or better in ELCE-220 and ELCE-222)

Introduction to the design of digital networks and computers. Topics include number systems, coding, Boolean and switching algebra, logic design, minimization of logic, sequential networks and design of digital subsystems. Laboratory experiments with digital electronic circuits including number systems, design and application of modern digital circuitry for both combination and sequential logic circuits.

ELCE-306 ANALOG ELECTRONICS I (3-3) 4 (ELCE 223)

Semiconductors, p-n junction diodes, theory and application. Bipolar junction transistors, operation biasing and BJT as an amplifier. JFETs and MOSFETs theory operation and applications. Class A, B and C power amplifiers. Smallsignal low-frequency analysis and design. (Laboratory to reinforce the application of various devices).

ELCE-318 INSTRUMENTATION AND INDUSTRIAL CONTROL (3-0) 3

(ELCE-220) *Not Open to Electrical and Computer Engineering Majors for Credit

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 review of AC power concepts; instrumentation principles including standards, transducers and transmitters, interference and noise, and A/D and D/A conversion; and 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, and application examples.

ELCE-320 ELECTROMAGNETIC FIELDS (3-0) 3 (PHYS 214, MATH 251, ELCE 223.)

Transmission lines, plane waves, 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.

ELCE-321 ELECTROMAGNETIC FIELDS II (3-0)3

(ELCE-320 and MATH-261)

Survey of more advanced topics in electromagnetic theory; plane wave propagation, reflection and refraction, waveguides and optical fibers; radiation and dipole antennas; optical properties of matter and electro-optics; laser principles and holography; application of finite element methods to solve realistic problems.

ELCE-326 LINEAR SYSTEMS (3-0) 3

(C or better in both MATH-261 and ELCE-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, Fourier Series, Fourier and Laplace transforms and the concept of the transfer function. Application to circuits. The Z-transform and sampling.

ELCE-328 PROBABILITY AND RANDOM PROCESSES (3-0) 3

(BELCE 326)

Concepts of probability, random variables, probability distribution and density functions. Random processes and applications to electrical and computer engineering.

ELCE-332 INTRODUCTION TO

COMMUNICATIONS (3-0) 3

(ELCE 326 Linear systems, MATH-448 Probability and Statistics)

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.

ELCE-390 (JUNIOR SEMINAR) "(0-3) 1

(Junior Seminar)

Professional and ethical standards of practicing electrical and computer engineering are explored. Economic, environmental and societal impacts of electrical and computer engineering as well as current issues, topics and news items relating to electrical engineering are examined and discussed in Junior Seminar. Building upon both oral and written laboratory reports within the curriculum, students prepare, deliver, and evaluate oral presentations. ELCE-400 COMMUNITY SERVICE (0-0) 0

All BSEE students must complete 40 hours of community service. The successful BSEE student is expected to complete and evaluate service as a citizen of the local community.

ELCE-401 ELECTROMAGNETIC DEVICES (3-3)4

(BELCE-320 and ELCE-326)

Three-phase power, pf 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. Synchronous motor construction and performance analysis. Ratings and general design

considerations of electric machinery. Lab experiments to reinforce lecture topics.

ELCE-403 POWER SYSTEMS I (3-0) 3 (ELCE-320, ELCE-401)

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 load flow analysis for design of industrial power distribution systems using ETAP and Matlab software.

ELCE-404 POWER SYSTEMS II (3-0) 3 (ELCE-403)

Advanced topics in power distribution including: sequence impedances; symmetric and asymmetric fault analysis, network matrices-static load flow equations, Zbus, Ybus, load flow analysis. Gauss-Seidel and Newton-Raphson methods. Power flow studies in system design and operation, regulating transformers. Economic operation and environmental impact of power systems.

ELCE-405 PROTECTIVE RELAYING (3-0) 3 (BELCE-403)

General philosophy of protective relaying-relay systems, selection of circuit breakers, classification of relays, backup protection. Protection basics, relay coordination, CT/ VT selection, relay characteristics, amplitude and phase comparators, basic design concepts. Differential, directional, over-current, impedance, admittance, reactance relays, characteristics and applications. Burden calculation, protective relaying schemes for generators, transformers, busses, and transmission lines. Relay coordination for radial distribution systems.

ELCE-409 SPECIAL TOPICS IN ECE

(variable credit up to 3 hours)

(Senior Status and Departmental Approval) The study of current topics in electrical engineering.

ELCE-411 SPECIAL PROJECTS IN ECE

(variable credit up to 3 hours)

(Consent of department)

Design and fabrication of an electrical or electronic system or device. A formal report is required.

ELCE-417 DIGITAL SIGNAL PROCESSING (3-0)3

(ELCE-326 and 328 or consent of instructor.)

Analysis, design, and implementation of discrete time systems. Specific topics include FIR filters, filter realization (software and hardware), fast Fourier transforms (faster FFT algorithms), quantization and noise, power spectrum estimation, and adaptive filtering. Extensive computer usage plus some hardware design for laboratory work required.

ELCE-418 ANALOG ELECTRONICS II (3-0) 3 (ELCE-306)

Multiple transistor circuits. Difference, Darlington and Cascade amplifiers. The operational amplifier, theory, its linear and non-linear applications. Low and high frequency analysis of BJT and JFET. Feedback, frequency compensation of op-amps, and oscillators. Laboratory to reinforce device applications.

ELCE-420 MICROPROCESSORS (3-3) 4 (ELCE-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. Student 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.

ELCE-421 EMBEDDED SYSTEMS (3-3) 4 (ELCE-271)

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.

ELCE-424 AUTÔMATIC CONTROL SYSTEMS (3-0) 3

(ELCE-326, and MATH-441)

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.

ELCE-425 AUTOMATIC CONTROL LAB (0-3) 1 (BELCE 424)

Computer-aided control design and server mechanisms. Experimentation, verification and reinforcement of automatic control fundamentals for analysis and design.

ELCE-426 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, control of manipulator and robotic programming. Project required. ELCE-428 DIGITAL CONTROL (3-0) 3

(Senior Status)

Application of digital computers for real time control of dynamic systems. Topics covered include modeling and analysis of discret time systems, sampling, and Z-transform. State variable analysis and system simulations, design techniques for discrete-time systems, and digital implementations are included.

ELCE-431 ANTENNA THEORY AND DESIGN

(3-0) 3 (ELCE-320)

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-neriodic antennas.

ELCE-434 COMPUTER AND DATA NETWORKS (3-0) 3 (ELCE 332)

Digital signal encoding, optimal coding techniques, data compression and encryption. Introduction to the OSI reference model, and local and wide area networks for computers and telephones, ISDN.

ELCE-442 COMPUTER ARCHITECTURE (3-0) 3

(ELCE 271 or CSCI 231, BELCE 420 or BELCE 421)

Control, data, and command driven computer architecture. Parallel processing, pipelining, and vector processing. Structures and algorithms for array processors, systolic architectures. Design of architectures.

ELCE-452 NETWORK SYNTHESIS (3-0) 3

(ELCE 326)

Passive and active filter design using classic filter responses. Topics covered include the Butterworth, Chebyshev, and Bessel approximations. Biquadratic functions and design of filters. Sensitivity and computer programs. Design project required.

ELCE-454 VLSI DESIGN (2-3) 3 (ELCE 271)

Physics of MOS devices, basic fabrication processes, basic logical elements, and logic design methods in NMOS and CMOS. Design rules and computation of circuit parameters from layout. Delay and power computation using a simple model. Design principles of memory circuits.

ELCE-455 VHDL DESIGN (3-0) 3

(ELCE 271)

Design of digital systems using VHDL with Altera software and hardware. Students design digital systems at a high level, express the algorithms in VHDL and use the Altera platform for simulation and debugging.

ELCE-456 RF DESIGN (3-0) 3

(BELCE 332)

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.

ELCE-457 POWER ELECTRONICS (3-0) 3 (Senior Status)

Solid state motor and load control. Thyristor phase controlled converters for single and polyphase systems static control; DC-DC control; firing circuits; power devices; transistors; FETs; thyristor family.

ELCE-470 OPTICAL COMMUNICATIONS

(3-0) 3 (ELCE 320)

Optical processes in communications. Topics include light sources (lasers and LEDs), detectors, guided waves in dielectric slab guides, optical fiber characteristics, coherent and incoherent systems.

ELCE-490 SENIOR DESIGN I (1-6) 3

(Senior status and departmental approval)

The first part of the Senior Design capstone project. Student teams will apply the engineering design process and modern analytical tools in creating engineering solutions or developing useful products. Students are encouraged to find market-driven or industrial projects.

ELCE-491 SENIOR DESIGN II (1-6) 3 (ELCE-490)

(ELCE-490

Continuation of ELCE 490. Capstone projects will culminate with a final product or prototype, final technical report and formal public presentation by student design teams. Special attention will be paid to issues of professional ethics, marketability, sustainability, and the economic and environmental impacts of each design product.

ELET - Electrical Engineering Technology

Professor Minnich (Chair); Associate Professor Valentine, Assistant Professor Maxson

ELET-100 COMPUTER LITERACY (2-0) 2 F/S

(WEB Course). Computer Literacy meets the International Society, for Technology Education (ISTE) Standards This course includes an introduction to the computer, a history of computers, safety, power supplies, system unit, and basic input/output devices. Additionally, the course includes an introduction to computer operating systems, such as: DOS, Windows 9X, Windows NT, Windows XP, Unix, Linux and Mac OS. Students will also receive a basic introduction to computer networking, internet navigation, and WEB browsers. All testing will be administered on-line. The course is instructor mentored with student support through email.

ELET-105 BASIC COMPUTER REPAIR I

(2-0) 2 F/S

(WEB Course). First course of a two-course sequence designed to prepare students for the knowledge-based portion of the Aries!" Professional Computer Technician and the Comp TIA A+ certification examinations. Students enrolling in this course have 120 days to complete the required materials. The course covers history of computers, safety, basic electronics, power supplies, chip sets, motherboards, and processors. All testing will be administered on-line. The course is instructor mentored with student support through email.

ELET-106 BASIC COMPUTER REPAIR II (2-0) 2 F/S

(ELET-105 or instructor's permission)

(WEB Course). Second course of a two-semester sequence designed to prepare students for the knowledge-based portion of the Aries!" Professional Computer Technician and the Comp TIA A+ certification examinations. Students enrolling in this course have 120 days to complete the required materials. The course covers operating systems, and basic computer applications including installing and operating a peer-to-peer LAN. Includes basics of computer assembly, testing and verification of proper operations, troubleshooting and component upgrades. All testing will be administered on-line. The course is instructor mentored with student support through email.

ELET-110 COMPUTER HARDWARE SYSTEMS (Both 5) 3 F (Web available F/S)

This course is designed to prepare students for the Hardware Core portion of the Comp TIA A+ certification examination. The course covers the history of computers, safety, power supply, basic electronics, chip sets, motherboards, Pentium class processors, and cabling standards.

ELET-111 COMPUTER OPERATING SYSTEMS (Both 5) 3 S (Web available F/S))

(ELET-110 or instructor's permission)

This course is designed to prepare students for the Operating System portion of the Comp TIA A+ certification examination. This course covers operating systems (e.g., MS-DOS, Window 3.x, Window 95/98, Window 2000 Overview, Windows NT/XP Operating Systems), and basic computer operational applications including driver installation and setup and operation of a peer-to-peer LAN.

ELET-121 INTERNETWORKING I (Both 6) 4 F/S

Networking Basics is the first of four courses designed to prepare students to attain the Cisco Certified Network Associate (CCNA) designation. Networking Basics introduces students to the networking field. This course focuses on the following: Network terminology, Network protocols; Local-area networks (LANS); Wide-area networks.

ELET-122 INTERNETWORKING II (Both 6) 4 F/S (ELET-121)

Routers and Routing Basics is the second of four CCNA courses designed to prepare students to attain the Cisco Certified Network Associate (CCNA) designation. Routers and Routing Basics focuses on initial router configuration, Cisco IOS Software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Students will learn how to configure a router, manage Cisco IOS software, configure routing protocols on routers, and set access lists to control traffic patterns through routers.

ELET-171 DC CIRCUIT ANALYSIS (3-3) 4

F/S (BMATH-113)

An introductory course in DC circuits analysis including resistor, capacitor, and inductor circuits. Computer simulation and laboratory experiments are used to verify circuit theorems and theory. Use of testing and troubleshooting instruments in a laboratory environment is emphasized. An introduction to computer circuit analysis simulation software such as Electronic Workbench is included.

ELET-172 AC CIRCUIT ANALYSIS (3-3) 4 F/S

(ELET-171, MATH 113, MATH-114)

A study of the steady-state sinusoidal response of electrical circuits through the utilization of the phasor method of network analysis. This course covers sinusoidal waveforms; phase relations; reactances and impedances; fundamental methods of analyzing series, parallel, and series - parallel AC circuits; circuit theorems in the complex frequency domain; real, apparent and reactive power; basic resonant circuit analysis; and system frequency response. Computer simulation and laboratory experiments are used to verify circuit theorems and theory. Use of testing and troubleshooting instruments in a laboratory environment is emphasized. Use of computer circuit analysis simulation software such as Electronics Workbench is included.

ELET-181 ANALOG DEVICES (3-3) 4

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(ELET-171, MATH 113, MATH 114)

A study of electronic devices including basic semiconductor theory; characteristics and application of diodes and other two-terminal semiconductor devices; theory of operation and DC biasing of bipolar-junction and field-effect transistors; and an introduction to AC applications and device modeling. Use of computer circuit analysis simulation software such as Electronics Workbench is included.

ELET-210 NETWORK COMMUNICATION SYSTEMS

(Both 3-0) 3 F/S

(Web course) This course is designed to prepare students for the CompTIA Net+ certification by introducing them to a vendor neutral study of networking, ,concepts of telecommunications, interconnectivity, data communications, wireless communication, networking installation and wiring closet design, and protocols. The course includes an introduction network oprating systems such as UNIX, Linux, Windows 2003 Server, and Novell Netware.

ELET-211 NETWORK OPERATING SYSTEMS (Both 5) 3 F

(ELET-111 or A+ Certification or Permission of entry) Students learn about the installation, configuration, and administration of network operating systems such as Linux and Windows 2000/2003 Server, Internet Information Server, and Linux. The student will also be introduced to advanced hardware topics, network security, and network management tools. This course completes student preparation for the Microsoft MCPS certification examination as well as preparing the student for the CompTIA Server+ certification examination.

ELET-212 NETWORK SECURITY FUNDAMENTALS (Both 5-3) S

(ELET-111, ELET-121 or Department Chair Permission) Network Security Fundamentals is a comprehensive overview of network security. The course covers five areas of network security: 1) General Security Concepts such as authentication methods along with common network attacks
and how to safeguard against them; 2) Communication Security which includes remote access, e-mail, the Web, directory and file transfer, and wireless data; 3) Infrastructure Security explores various network devices and media, and the proper use of perimeter topologies such as DMZs, Extranets, and Intranets to establish network security; 4) Cryptography basics are provided, including the differences between asymmetric and symmetric algorithms, and the different types of PKI certificates and their usage; and 5) Operational/Organizational Security is covered as it relates to physical security, disaster recovery, and business continuity, as well as coverage of computer forensics and how it relates to further avenues of specialization for the security student. The course prepares students for the CompTIA's Security+ Certification Exam.

ELET-213 COMPUTER FORENSICS AND INVESTIGATIONS (Both 5) 3 As needed

(ELET-110, ELET-111 or Department Head Permission)

This course is a comprehensive study of computer forensics and investigative tools and techniques. Topics include what computer forensics and investigation is as a profession and an introduction to the overall investigative process. The IBM-based personal computer operating system architectures and disk structures will be discussed. The requirements of how to set up an investigator's office and laboratory are covered, as well as what computer forensic hardware and software tools are available. The importance of digital evidence controls is taught along with how to process crime and incident scenes. Finally, the details of data acquisition, computer forensic analysis, e-mail investigations, image file recovery, investigative report writing, and expert witness requirements are studied. This course provides a range of laboratory and hands-on assignments that teach you about theory as well as the practical application of computer forensic investigation. This course will prepare students to the International Association of Computer Investigative Specialists (IACIS) certification.

ELET-214 DISASTER RECOVERY (Both 5) 3 As needed

(ELET-212 or CMIS-165, or Department Chair Permission)

This course presents methods to identity vulnerabilities and take appropriate countermeasures to prevent and mitigate failure risks for an organization. This course provides the networking professional with a foundation in disaster recovery principles, including preparation of a disaster recovery plan, assessment of risks in the enterprise, development of policies and procedures, an understanding of the roles and relationships of various members of an organization, implementation of the plan, testing and rehearsal of the plan, and actually recovering from a disaster. The course takes an enterprise-wide approach to developing a disaster recovery plan. Students will learn how to create a secure network by putting policies and procedures in place, and how to restore a network in the event of a disaster. A collaborative laboratory is included for the hands-on Recovery Plan Development component of the course.

ELET-221 INTERNETWORKING III (Both 6) 4 F (ELET-122)

Switching Basics and Intermediate Routing is the third of four courses leading to the Cisco Certified Network Associate (CCNA) designation. Switching Basics and Intermediate Routing introduces Cisco Networking Academy Program students to the basics of switching and intermediate routing skills. The course focuses on the following: introduction to classless routing; single area OSPF; EIGRP; switching concepts; switches; switch configuration; spanning-tree protocol; virtual LANS; and VLAN Trunking Protocol.

ELET-222 INTERNETWORKING IV (Both 6) 4 S (ELET-221)

WAN Technologies is the fourth of four courses leading to the Cisco Certified Network Associate (CCNA) designation. WAN Technologies introduces Cisco Networking Academy students to WAN technologies. The course focuses on the following: Network Address Translation (NAT) and Port Address Translation (PAT); WAN technologies, Point-to-Point Protocol (PPP); Integrated Services Digital Network (ISDN); Dial-on-Demand Routing (DDR); frame relay, and network management.

ELET-223 FUNDAMENTALS OF WIRELESS LANs (Both 6-4) As needed

(ELET-221 or Department Head Permission)

This is an introductory course in Wireless LANs that focuses on the design, planning, implementation, operation, and troubleshooting of wireless networks. It covers a comprehensive overview of technologies, operation, and troubleshooting of wireless networks. It also covers a comprehensive overview of technologies, security, and design best practices with particular emphasis on hands-on skills in wireless LAN setup and troubleshooting; 802.11a and 802.11b technologies, products, and solutions; site surveys; resilient WLAN design, installation, and configuration; WLAN security—802.1x EAP, LEAP, WEP, SSID; and vendor interoperability strategies. This course will prepare students for the Cisco Wireless LANSupport Specialist designation.

ELET-231 FUNDAMENTALS OF UNIX

(Both 5-3) As needed

(Basic Computer Literacy)

Fundamental command-line features of the Unix environment, including file system navigation, file permission, the "vi" text editor, command shells, and basic network use. Students will learn to: long-in and log-out of Unix and CDE systems; navigate the Solaris environment file system; manipulate text files; create files and directories; change permissions of files and directories; use the "vi" text editor, identify and modify initialization files; employ shell features to streamline command execution; use basic network commands; and use commands to search directories and files.

ELET-232 OPEN SYSTEMS OS I

(Both 5-3)

Open Systems are developed under the GNU General Public License. These operating systems are freely available. This course is the first course available in the Red Hat Linux Academy course of study. Computing Essentials to include a quick tour of the Linux operating system, filesystem basics, users and groups, file ownerships and permissions, the Linux filesystem, the Bash Shell, standard input/output and redirection, regular expressions, process management, the Linux graphical environment, network applications, and system tools are studied. This is a performance based course with extensive hands on exercises and grading assessments. Successful completion of this course prepares the student for the next course in the Red Hat Linux Academy program covering Core System Administration.

ELET-233 OPEN SYSTEMS OS II (Both 5-3)

(ELET-232 or Department Head Permission)

This is the second course available under the Red Hat Linux Academy course of study. Core System Administration covers the topics of Red Hat Linux Installation, hardware and device configuration, filesystem management, system initialization and services, user and group administration, network configuration, system administration tools, the Red Hat Package Manager (RPM), kernel services and configuration, the X window system, and system troubleshooting. This is a performance based course with extensive hands on exercises and grading assessments. Successful completion of this course prepares the student for the Red Hat Linux Certified Technician exam (RHCT).

ELET-234 FUNDAMENTALS OF JAVA PROGRAMMING (Both 5-3) As needed

(GNET 108, previous programming language course)

This course provides a conceptual understanding of Object Oriented programming. The course also teaches students how to use the JAVA language's object oriented technologies to solve business problems. Students will learn how to create classes, objects, and applications using the language. Topics also include the Java language fundamentals and API (application programming interface). Additionally, the course will address preparation for the Sun Certified Programmer for the Java 2 Platform.

ELET-236 PLCs

(Both 5-3) F

(MATH-117, BELET-274/275, or consent)

This course covers topics central to programmable logic control (PLC) applications including ladder rung logic,, PLC software, basic machine control functions, timers, cournters, basic machine control, and an introduction to graphic display systems. Hands-on laboratory exercises and simulations augment the classroom environment.

ELET-241 FUNDAMENTALS OF WEB DESIGN (Both 5-3) S

(Basic Computer Literacy)

This course focuses on the overall production processes, with particular emphasis on design elements involving layout, navigation, and interactivity. Course topics include: Web site architecture, work flow and production processes; principles of graphic and content creation for online media, fundamental online graphic design principles including appropriate interactivity, content sensitive navigation schemes, and user interface criteria; task-appropriate software tool selection; distinctive attributes of the Web as a unique medium; Web animation techniques; Web site accessibility; Web site implementation and hosting; and media skills necessary to become a web designer, either as an employee or freelance designer. Hands-on Web design exercises will be taught using current commercial Web Development software.

ELET-274 ELECTRICAL CONTROL SYSTEMS (2-3) 3 S

(ELET-171) (For non-EET majors)

The course provides introduction to the principles of operation of motors, generators, transformers and motor controls, both the fundamental and practical applications. The course is organized in three main sections. The first section describes the rules governing the behavior of electricity and magnetism. The second section will deal with the machines and devices that generate, transform, and use electrical power. The third section is devoted to the control and protection of motors. Both electro-mechanical and solid state electronic control devices and systems are covered in some detail.

ELET-275 POWER SYSTEMS AND INDUSTRIAL DEVICES (3-3) 4 S

(ELET-172)

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

ELET-282 ANALOG DEVICES II (3-3) 4 F (ELET-172, ELET 181)

A continuation of ELET-181. Topics include: transistor AC models; small-signal analysis; multistage characteristics and response; power amplifiers; construction, characteristics, and applications of linear integrated circuits (including operational amplifiers); and the computer analysis of amplifiers.

ELET-290 DIGITAL DEVICES (3-3) 4 S (ELET-181)

The analysis of digital systems through the study of number systems, logic gates, specific design Techniques using simple logic gates and commercially available digital devices such as flip-flops, counters, shift registers, etc., with emphasis on application of present and future digital integrated circuits; introduction to micro-processors.

ELET-291 EET PRACTICUM (1-3 credits) As needed

Special assignment in the Electrical Engineering Technology field to correlate with the AS EET program. Students must have a designated field supervisor and a faculty coordinator. Final approval granted by the student's department head.

ELET-292 COMMUNICATION SYSTEMS I (3-3) 4 F

(BELET-282)

Introduction to frequency spectrum analysis of sinusoidal waveforms, response analysis, and noise effects. Analog modulation techniques to include AM, FM, etc. Frequency domain; real, apparent and reactive power, basic resonant circuit analysis, and system frequency response. Introduction to communication systems (AM/FM radio, TV, microwave, satellite), transmission lines, fiber optics, and atmospheric and free space propagation, Use of computer circuit simulation software such as Electronics Workbench. Students are required to complete a design project as part of the final grade. The project includes a formal report and oral presentation.

ELET-295 BIOMEDICAL EQUIPMENT TECHNOLOGY (3-3) 4 As needed

An introduction to the use, maintenance, and repair of biomedical equipment. Other topics include electrical safety, radiology, and nuclear medicine, and the use of computers in biomedical equipment.

ELET-299 ELECTRICAL ENGINEERING TECHNOLOGY PROJECTS (1-4 credits) As needed

As needed

(Consent of the department)

Selected studies in Electrical Engineering Technology. ELET-312 ROUTER BASED NETWORK SECURITY (Both 5) 3 As needed

(ELET-212, ELET 221)

This course will teach students to design and implement router based security solutions that will reduce the risk of revenue loss and network vulnerability. This course emphasizes security policy design and management; security technologies, products, and solutions; secure router design, installation, configuration, and maintenance; AAA implementation using routers; and VPN implementation. This course will prepare students for the Securing Cisco IOS Networks exam (SECUR, formerly MCNS).

ELET-313 FIREWALL BASED NETWORK SECURITY (Both 5) 3 As needed (ELET-312)

This course will teach students to design and implement firewall based security solutions that will reduce the risk of revenue loss and network vulnerability. There will be emphasis on security policy design and management; security technologies, products, and solutions; firewall design, installation, configuration, and maintenance; AAA implementation using firewalls; and VPN implementation using firewalls. This course will prepare students for the Cisco Secure PIX Firewall Advanced exam (CSPFA). This exam and the SECUR exam will also count toward the CCSPTM (Cisco Certified Security Professional) certification. Successful completion of these two exams will earn students the Cisco Firewall Specialist designation.

ELET-315 ELECTRONIC MEASUREMENT AND INSTRUMENTATION (3-3) 4 F

(MATH-117, ELET-282, or permission of instructor)

The application of electrical and electronic circuits-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 techniques.

ELET-321 INTERNETWORKING V (Both 6) 4 As needed

(CCNA certification; ELET 222; or equivalent work experience, with department head approval)

Advanced instruction in internetworking. Work with linkstate and hybrid routing protocols, CIDR and VLSM are introduced and used throughout the semester. Students learn about complex network configurations and how to diagnose and troubleshoot network problems. BGP implementation and scaling are introduced along with internet filtering. Students who successfully complete the advanced curriculum are eligible to earn Cisco Routing (exam 640-503 or 640-900) certification leading to Certified Network Professional (CCNP) certification.

ELET-322 INTERNETWORKING VI (Both 6)4 As needed

(CCNA certification; ELET 222; or equivalent work experience, with department head approval)

Advanced instruction in remote access systems. Work with asynchronous dial-up (ISDN, X.25, and Frame Relay technologies. Students learn about complex remote-access network configurations and how to diagnose and troubleshoot network problems. Students are introduced to AAA networking processes. Students who successfully complete the advanced curriculum are eligible to earn Cisco Remote Access (exam 640-505) certification leading to Certified Network Professional (CCNP) certification.

ELET-337 COMMUNICATION SYSTEMS II

(3-3) 4 S

(Junior Status BSEET, ELET-292, ELET-290,

MATH-315 or permission of the instructor)

An introduction to digital modulation techniques, error detection/correction, and communications systems, Analog and digital voice and data transmission, copper and fiber optic transmission media, and network (LAN/WAN) topology and protocols. Use of computer circuit analysis simulation software such as Microsim Pspice, MATLAB, SysView, or Electronics Workbench.

ELET-371 DC CIRCUIT ANALYSIS (3-3) 4 F/S

(MATH-113; for Industrial Technology and BSET majors)

An introductory course in DC circuits analysis including resistor, capacitor, and inductor circuits. Computer simulation and laboratory experiments are used to verify circuit theorems and theory. Use of testing and troubleshooting instruments in a laboratory environment is emphasized. An introduction to computer circuit analysis simulation software such as Electronic Workbench is included.

ELET-372 AC CIRCUIT ANALYSIS (3-3) 4 F/S

(ELET-371, MATH 113, MATH-114; for Industrial Technology and BSET majors)

A study of the steady-state sinusoidal response of electrical circuits through the utilization of the phasor method of network analysis. This course covers sinusoidal waveforms; phase relations; reactances and impedances; fundamental methods of analyzing series, parallel, and series - parallel AC circuits; circuit theorems in the complex frequency domain; real, apparent and reactive power; basic resonant circuit analysis; and system frequency response. Computer simulation and laboratory experiments are used to verify circuit theorems and theory. Use of testing and troubleshooting instruments in a laboratory environment is emphasized. Use of computer circuit analysis simulation software such as Electronics Workbench is included.

ELET-375 POWER SYSTEMS AND INDUSTRIAL DEVICES (3-3) 4 F

(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-381 ANALOG DEVICES I (3-3) 4 F/S

(ELET-371, MATH 113, MATH-114 for Industrial Technology and BSET majors)

A study of electronic devices including basic semiconductor theory; characteristics and application of diodes and other two-terminal semiconductor devices; theory of operation and DC biasing of bipolar-junction and field-effect transistors; and an introduction to AC applications and device modeling. Use of computer circuit analysis simulation software such as Electronics Workbench is included.

ELET-410 CONTROL SYSTEMS TECHNOLOGY (3-0) 3 F

(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 F (ELET-290)

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 miltiplexers 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-421 INTERNETWORKING VII (Both 6) 4 As needed

(CCNA certification; ELET 222; or equivalent work experience, with department head approval)

Advanced instruction in switching theory and operation. Work with layer-two (Catylist 2900 series) and a layer-three (Catylist 4000 series) switching configurations. Trunking and VLAN implementation covered extensively. Students who successfully complete the advanced curriculum are eligible to earn Cisco Switching (exam 640-504) certification leading to Certified Network Professional (CCNP) certification.

ELET-422 INTERNETWORKING VIII

(Both 6) 4

As needed

(ELET 321, ELET-322, ELET-423; or equivalent work experience or certifications, with department head approval) Capstone course for the advanced internetworking series of courses. Advanced instruction in internetwork support services and troubleshooting. Introduction to advanced troubleshooting methods and tools to detect and correct networking problems. Advanced diagnostics are introduced and developed in a hands-on internetworking environment that ranges across LAN and WAN implementations. Students who successfully complete the advanced curriculum are eligible to earn Cisco Troubleshooting Support (exam 640-506) certification leading to Certified Network Professional (CCNP) certification.

ELET-426 MICROPROCESSOR-BASED DATA ACQUISITION AND CONTROL (3-3) 4 S

(ELET-410, ELET-420, or permission of instructor) 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 lab exercises. PC based data acquisition boards and high level visual programming environments are introduced through lab exercises.

ELET-430 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-431 MICROCOMPUTER OPERATING SYSTEMS (3-3) 4 As needed

(ELET-420 or equivalent)

Microcomputer operating systems, assembly languages, application of software to the solution of technical problems. ELET-432 PROCESS INSTRUMENTATION

(3-3) 4 As needed

(ELET-320 or equivalent)

Application of physical principles to the measurement of flow, temperature, pressure, level, etc. Signal conditioning for digital and computer readout and controllers.

ELET-433 PROCESS CONTROL SYSTEMS TECHNOLOGY (3-3) 4 As needed

(ELET-410 & ELET-420 or consent of the instructor)

An introduction to the process control loop and its composite elements: process concepts and characteristics; devices for measuring process variables such as temperature, level, flow, pressure, etc.; controllers; control valves; and process computers. There is extensive investigation of computer simulation tools in the process control area. Laboratory experiments illustrate device applications and control loop performance.

ELET-436 POWER SYSTEMS & PLC'S (3-3) 4 F

(Junior Status, ELET-236, or consent)

A coverage of power systems used in typical industrial applications including transformers, breaker and wire sizing using the National Electric Code, metering, power rectifiers, and applications of PLC controllers and their connection to external components.

ELET-499 ELECTRONICS ENGINEERING TECHNOLOGY PROJECTS (1-4 credits)

(Senior status & consent of Department)

Selected projects and/or research for senior BSEET students in current topics. Projects must be approved by faculty before registration.

ENGL - English

Professors Bellue, Eisenstat, Harris, Kihn, Waters; Assistant Professor Dangerfield.

Placement in entry-level freshman writing courses is determined primarily by ACT or SAT scores (see below) and verified by a writing sample together with the Nelson-Denny reading test, which will be administered during the first week of the semester.

ENGL-092 FUNDAMENTAL WRITING (5-0) 5 F/S

(Students with ACT English scores of 13 or below or SAT scores of 200-439 in English are required to take this course. Students may not withdraw. Credit not applicable to degree requirements. Basic composition with an emphasis on writing paragraphs, use of the dictionary and handbook. **ENGL-093 FUNDAMENTAL READING (2-0) 2** F/S

(For students with ACT Reading Score of 16 or below or SAT Verbal Score of 439 or below. Must be taken during student's first semester. Credit not applicable toward graduation. Students required to take this course may not withdraw.) A course designed to improve reading speed and comprehension of those deficient in language skills.

ENGL-095 BASIC COMPOSITION AND READING (3-0) 3 F/S

(For students with ACT English scores 14-17 or SAT 440-449 scores in English, ENGL-092 with "C" or better or with departmental approval.)

Basic expository composition and reading; the use of the dictionary and handbook; training in proofreading and editing; reading for comprehension and appreciation.

ENGL-101 ENGLISH COMPOSITION I (3-0) 3 F/S

(For students with ACT scores of 18 or better or SAT of 450 or better in English, or with departmental approval.)

Basic expository composition and reading; the use of the dictionary and handbook; training in proofreading and editing; reading for comprehension and appreciation.

ENGL-102 ENGLISH COMPOSITION II (3-0) 3 F/S

(ENGL 101 with "C" or better; students with an ACT score of 25 or above or SAT of 492 or above in English or with

departmental approval may opt for a freshman English sequence of ENGL-102 and any 100 + literature level course).

Emphasis on the rhetorical modes; writing longer compositions; advanced reading; editing and proof-reading; the methods of the research paper; individual writing projects.

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

ENGL-104 INTRO TO JOURNALISTIC WRITING (2-2) 3

(ENGL-101)

For students interested in writing for campus publications. An introduction to the writing of human interest stories, character sketches, profiles, news releases, and related writing.

ENGL-111 CREATIVE WRITING (3-0) 3

(ENGL-102 as needed for the program)

Creative writing (poetry, short story, essay); reviewing; professional writing (feature articles, reports); basic publication production skills.

ENGL-131 POETRY AND DRAMA (3-0) 3

Understanding and appreciation of literature; reading and criticism of selected works in poetry and drama by British and American authors; world literature.

ENGL-132 SHORT AND LONG FICTION (3-0) 3

Understanding and appreciation of literature; reading and criticism of selected works in short and long fiction by British and American authors; world literature.

ENGL-201 ADVANCED COMPOSITION (3-0) 3 (ENGL-102 as requested)

Composition for students who wish to develop their expository and argumentative writing skills further.

ENGL-202 BUSINESS AND PROFESSIONAL

WRITING (3-0) 3

F/S (ENGL-101 or consent of department)

Principles and practices in preparation of business and technical communications, including oral and written communication. Written assignments include memos and technical reports appropriate to the student's major. Oral communication includes evaluated presentations and principles of group communications.

ENGL-221 ENGLISH LANGUAGE (3-0) 3

(ENGL-101)

Study of the structure of contemporary English and how it works; the sound system and word-formation and sentenceformation systems and how they interact to create meaning. ENGL-225 WORLD LITERATURE

(3-0) 3

(ENGL-102 or consent of department)

Great literature from outside the United States and Great Britain; includes both Western and Non-Western literature.

ENGL-232 POETRY (3-0) 3

(ENGL 102 or consent of department) An examination of the works of selected British and American poets.

ENGL-233 SHORT STORY (3-0) 3

(ENGL-102 or consent of department)

Origin and development of short story in America; European short story writers.

ENGL-234 DRAMA (3-0) 3

(ENGL-102 or consent of department)

A literary study of the great plays of the Western World. ENGL-235 NOVEL (3-0) 3

ENGL-233 NUVEL (3-0) 3

(ENGL-102 or consent of department)

A study of outstanding examples of the novel as a major art form.

ENGL-241 AMERICAN LITERATURE (3-0) 3

(ENGL-102 or consent of department) American literature from colonial times to Civil War. ENGL-242 AMERICAN LITERATURE (3-0) 3 (ENGL-102 or consent of department)

American literature from Civil War to present.

ENGL-259 LITERATURE OF YOUTH (3-0) 3 (As needed for program)

Overview of contemporary adolescent literature for language arts instruction.

ENGL-261 ENGLISH LITERATURE I (3-0) 3

(ENGL-102 or consent of department) English literature from Beowulf through Johnson. ENGL-262 ENGLISH LITERATURE II (3-0) 3

(ENGL-102 or consent of department)

English literature from Blake to present.

ENGL-263 SHAKESPEARE I (3-0) 3

(consent of department)

An introduction to the range and depth of Shakespeare's dramatic art, and the universality of his subject matter, through a study of selected comedies, tragedies, histories, and romances from different periods of his development.

ENGL-272 MODERN LITERATURE (3-0) 3

(consent of department)

A study of those styles, ideas, and purposes which distinguish modern writers from their predecessors.

ENGL-293 GOVERNOR'S PORTFOLIO 3

Required course for students in the Board of Governors program who seek to petition credits based on training, and/ or work experiences. Students will learn the basics of writing and assembling a portfolio.

ENGL-304 TOPICS IN JOURNALISTIC WRITING (1-2) 2

(ENGL-102 or consent of department)

For students working regularly and actively on campus publications. Individualized instruction in reporting, feature writing, or copy reading and editing. The course may be taken for a maximum of three semesters and six hours credit. ENGL-305 SCIENTIFIC/ TECHNICAL

WRITING (3-0) 3 F/S

(ENGL-102 or consent of department)

Report writing; technical correspondence; technical articles. One-third of course devoted to oral communication.

ENGL-326 WORKSHOP IN PERFORMANCE

(2-2) 3 Alternate semesters

(Consent of instructor)

Detailed study and practical application of techniques used in all aspects of play production including performance, stage design, technology, and theatre crafts.

ENGL-327 WORKSHOP IN PRODUCTION

(2-2) 3 Alternate Semesters

(Consent of instructor)

This class focuses on analysis of production elements as they come together in play presentation.

ENGL-329 TOPICS IN THE ENGLISH

LANGUAGE

(3-0) 3 As needed for program Structural and transformational-generative grammars with emphasis on phonology, morphology, syntax, dialect geography, and usage.

ENGL-352 TOPICS IN APPALACHIAN STUDIES

(3-0) 3 (ENGL-102 or consent of department) A study of the major genres dealing with Appalachian life and culture, including fiction, screen and stage drama, and poetry, plus the oral tradition of folklore and tales.

ENGL-390-01 DRAMA LAB (1-0) F/S

Participation in scheduled drama productions. Maxi-

mum credit 2 hours in one semester, 3 hours in one academic year to maximum of 6 credit hours.

ENGL-493 SPECIAL TOPICS (1-3) As requested

(ENGL-102 or consent of department)

Selected topics in the study of literature or language for analysis, research, and discussion under the direction of the departmental staff.

ENGL-496 INTERDISCIPLINARY STUDIES SENIOR PROJECT 3-4 As requested

(Consent of department)

Design and completion of Interdisciplinary Project. Requires approval of faculty committee.

FINC-FINANCE

Associate Professors Gupta, Sarin

FINC-321 PERSONAL FINANCE (3-0) 3

Every other S 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.

FINC-325 FINANCIAL MANAGEMENT I (3-0) 3

(ACCT-202; ECON-232) F/S

MATH-124)

Nature of financial management; financial environment; some fundamental concepts of financial managementfinancial ratios; financial analysis, planning and control; time value of monev. Capital budgeting. Risk-return analysis.

FINC-326 FINANCIAL MANAGEMENT II (3-0) 3 S (FINC-325; MGMT-386)

Continues the discussion of fundamentals of financial management begun in FINC-325. Management of working capital; international finance; cost of capital; financial leverage; long-term finance. Use is made of the case studies method.

FINC-327 SECURITIES INVESTMENT (3-0) 3

(FINC 325) Every other S

Discusses both institutional and theoretical aspects of investment in securities. How to evaluate and select stocks and bonds for investment (securities analysis). How to manage a portfolio of total investment (portfolio analysis). FINC-328 FINANCIAL STATEMENT ANALYSIS

(3-0) 3 (Cross listed as ACCT 348)

S

(ACCT-342; FINC-325; or consent of Department)

This course will include an in-depth review of the balance sheet, income statement, statement of retained earnings, and the statement of cash flows; financial ratios related to shortterm liquidity, long-term debt paying ability, profitability, and other investment decisions; industry average comparisons; financial services and library sources; and expanded utility of ratios.

FINC-329 INTERNATIONAL FINANCE (3-0) 3

(FINC-325) As needed

Concepts and issues related to the international financial environment. Some of the major topics included are: international monetary fund; foreign exchange markets; international capital markets and capital flows; and multinational managerial finance.

GENE - General Engineering

GENE-100 ENGINEERING ORIENTATION (1-0) 1

College regulations; effective study habits; use of library; adjustment to college; engineering as a profession.

Engineering ethics and introductory topics to different majors in engineering

GENE-111 SOFTWARE TOOLS FOR ENGINEERS (3-0) 3

(Prerequisite or concurrent: MATH-125 or MATH-126 and MATH-128) F & S

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.

GENE-121 STATICS-(3-0) 3

(MATH-155) F & S

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.

GENE-242 DYNAMICS (3-0) 3 (GENE-121, MATH-156) F & S

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.

GENE-243 MECHANICS OF MATERIALS

(3-0) 3 F & S

(GENE-121, 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.

GENE-331 FLUID MECHANICS (3-0) 3

(GENE-242, MATH-156) F & S

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.

GENE-401 SENIOR ENGINEERING SEMINAR

(1-0) 1 F & S

(Senior Status)

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.

GENE-490 SPECIAL TOPICS IN ENGINEERING (Variable credit) (1-3) As Needed

GEOG - Geography

Professor S. Brown

GEOG-102 WORLD REGIONS (3-0) 3

World geography and its influence on economy; life, political structure, and culture of peoples; significance of major geographical regions; geography as it relates to world history and contemporary problems.

GEOG-343 GEOGRAPHY OF NORTH AMERICA (3-0) 3

A Study of regional divisions of the United States and Canada with emphasis on agricultural, industrial, and urban development, multicultural population patterns, environmental and ecological problems, and economic prospects.

GNET - General Engineering Technology

GNET-100 TECHNOLOGY ORIENTATION

(1-0) 1 F/S

(For all Engineering Technology majors).

Study habits; use of library; exploration of technical courses; adjustment to college life.

GNET-102 CAREER EXPLORATION (2-0) 2 F/S

Exploration of personal values, attitudes, interests, aptitudes and skills, and the application of these variables toward work and career plans. Discussion of emerging workforce opportunities and requirements. Stresses career planning and goal setting.

GNET-108 BASIC COMPUTER

APPLICATIONS (2-3) 3 F/S

(MATH-030 or ACT Math score 16

(OTEC-100 & OTEC-280 helpful for students with less than one year of high school keyboarding experience.)

The course is designed to familiarize students with technical applications of microcomputers. Students will have brief exposure to word-processing and presentation software. Application of spreadsheet programs in technical problem solving will be emphasized.

GNET-299 ENGINEERING TECHNOLOGY PROJECTS (1-4 credits) (Consent of the Advisor)

To provide for supervised independent study or projects in Engineering Technology.

GNET-308 ADVANCED COMPUTER

APPLICATIONS (2-3) 3 S

(MATH 117, GNET-108, or permission of instructor)

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 311 SOFTWARE TOOLS FOR ENGINEERING TECHNOLOGY (3-0)3 (CNET 102, MATH 117)

(GNET 108, MATH 117)

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 numeric methods and software applications. Laboratory practice is required.

GNET-410 C++ PROGRAMMING FOR TECHNOLOGY (2-3) 3 F

(GNET-108 and Junior Status, or permission of instructor) 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

(For Juniors and Seniors)

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-490 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, lifelong 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-499 ENGINEERING TECHNOLOGY

PROJECTS (1-4 credits) As needed

(Consent of the Advisor)

To provide for supervised independent study or projects in Engineering Technology.

GPHS-Graphics

Professor Javins (Chair); Associate Professors King, Fernando

GPHS-120 GRAPHICS I (Both 4) 2 (F/S)

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.

HIST-History

Professor Kihn (Interim Chair); Assistant Professors Dean, Rakes, McMains

HIST-100 HUMANITIES ORIENTATION (1-0) 1

(For students in the Humanities and Sciences) College regulations and adjustment, effective study habits, use of library, career opportunities.

HIST-101 WORLD CIVILIZATION (3-0) 3 F/S

World civilization to the Reformation. Middle Eastern empires; Greece, Rome, China and India; medieval Europe and the Christian Church; revival of commerce; formation of the national states.

HIST-102 WORLD CIVILIZATION (3-0) 3 F/S

Nationalism, democracy, and socialism; World Wars I and II; the post-war world; economic, scientific, and cultural developments.

HIST-152 UNITED STATES HISTORY TO 1865 (3-0) 3 F/S

Colonial period; beginnings of the American institutions; American Revolution; formation of the national government; westward movement; political, social, and economic ferment in early 1800's; slavery and sectional conflict.

HIST-153 UNITED STATES HISTORY SINCE 1865 (3-0) 3 F/S

Problems following Civil War; industrial, transportation changes; the U.S. as a new world power; social and cultural

developments; two world wars; from isolationism to internationalism.

HIST-301 SPECIAL TOPICS IN HISTORY 1-3

Readings, research, and discussion of events and problems of past eras or of contemporary world situations as viewed in historical perspective.

HIST-350 WEST VIRGINIA AND ITS APPALACHIAN SETTING (3-0) 3

A study of West Virginia and the Appalachian region, with attention to its history, geography, political and economic development, social conditions, and the interactions of these forces.

HIST-351 HISTORY OF EARLY AMERICA (3-0) 3

"European backgrounds; discovery and settlement; colonial institutions, society, and culture; economic and political relations with Great Britain; causes, events, and results of the American Revolution; Confederation period, and the making of the Constitution."

HIST-352 HISTORY OF THE SOUTH (3-0) 3

The colonial South; origins of sectionalism; Southern nationalism; Civil War and Reconstruction; the New South; the contemporary South; central theme of Southern history. S-Odd

HIST-354 AMERICAN FRONTIER (3-0) 3

Westward movement before 1890; the American character; Appalachian frontier; the Great Plains and American expansion; the fur trade, farming, and mining frontiers; Manifest Destiny; Turner thesis. F-Odd

HIST-355 THE AFRICAN-AMERICAN EXPERIENCE (3-0) 3

African homeland; origins of slavery in America; slavery during the American Revolution; pre-Civil War South; Reconstruction's meaning for Blacks in the South; Jim Crowism and disfranchisement; Black America in the two World Wars; the Civil Rights Movement.

HIST-359 RECENT AMERICAN HISTORY (3-0)

Overview of the Great Depression and World War II; Post-War America; Cold War era; New Frontier, Great Society; Vietnam; Nixon and Watergate; Grassroots Movements; End of the Cold War; Collapse of New Deal liberalism and rise of conservatism; America and globalization. F-Even

HIST-367 HISTORY OF ENGLAND (3-0) 3

England under Celtic, Roman, and Anglo-Saxon rule; the Norman conquests; the Tudor Monarchy; Elizabethan and Stuart England; England in the Ageof 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. S-Even

HIST-377 NINETEENTH CENTURY EUROPE

"Congress of Vienna and Concert of Europe; conservative resistance to ethnic nationalism; the Industrial Revolution and agrarian traditions; ideological conflicts of liberalism, democracy, socialism, and nationalism; unification of Germany and Italy; European econocic and cultural imperialism in Africa and Asia; World War I origins." F-Even

HIST-378 TWENTIETH CENTURY EUROPE

(3-0) 3 S-Odd

"Paris Peace Conference and new European map; European mandates in the Middle East; world impact of Russian Communism; rise of totalitarianism in Japan, Italy, Spain, and Germany; World War II; Cold War tensions; decline of Soviet Union; recent trends."

HIST-388 HISTORY OF TECHNOLOGY (3-0) 3

Man's early technology; scientific and technological advances in the Western World from early modern times to the present; the Industrial Revolution in Europe and America and its extension to other parts of the world; the impact of technological changes on economic, political, and cultural developments; technology and human concerns.

HIST-455 CULTURAL AND INTELLECTUAL HISTORY OF THE UNITED STATES (3-0) 3

Age of Enlightenment and Great Awakening; Revolutionary

spirit and triumph of common man; science, Technology, industrialization, and urbanization; American ideals in literature and the arts.

HIST-456 AMERICA AND THE WORLD (3-0) 3

Colonial origins; Revolution; War of 1812; expansion policies; Monroe Doctrine and other principles; America as a world power; two World Wars; from isolation to world leadership. S-Even

HIST-470 HISTORY OF RUSSIA (3-0) 3

Non-slavic cultures; the Kievan state; the appanage period; the Muscovite state; imperial Russia; Communist Revolution; the Communist state; Russia in the contemporary world. F-Odd

HIST-471 HISTORY OF LATIN AMERICA (3-0) 3

Colonial period; wars for independence; 19th century problems; internal confusion and political immaturity; relations with the U.S.; Latin America in the contemporary world.

HIST-472 MODERN FAR EAST (3-0) 3

Far East since 1850 with emphasis upon China, Japan, and India; western influences; Japan as a world power; rise of nationalism; World Wars I and II; decline of colonialism; current problems.

HIST-480 READINGS IN HISTORY (1 to 3)

Directed readings in history with book reviews and consultations.

HIST-485 INTERDISCIPLINARY STUDIES SENIOR PROJECT (3 to 4)

(Consent of department)

Design and completion of Interdisciplinary Project. Requires approval of faculty committee.

HIST-490 SEMINAR IN HISTORY (3)

(Only for seniors in History and Government)

Capstone course, with emphasis on research and writing in history. American historiography; colonial, national, and imperial schools of history; regional approach to American history; major American historians; techniques of research and writing; reading from sources and major historians; community service.

HLTH - Health

HLTH-102 LIFETIME HEALTH (2-0) 2

Designed to acquaint students with concepts of health including total fitness and wellness evaluation. Special emphasis is placed on computerized fitness profile, nutritional analysis, cardiovascular exercise prescription, and exercise log. Required of all students in four year programs except those majoring in Physical Education.

HLTH-425 SPECIAL HEALTH TOPICS (1 to3)

(Prerequisite: Instructor's consent)

An opportunity to analyze a current health problem on an individual basis in a supervised situation. The analysis will include both the school and community viewpoints. The purpose of the course is to permit in-depth exploration, through research and discussion, of a specific local, national and/or worldwide health problem.

332 HLSC - Health Sciences

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.

HLSČ 204 PHARMACOLOGY (3-0) 3

(BIOL-232 or 233)

This course focuses on the study of pharmacology and its implications for health care of individuals across the lifespan. Legal and ethical pharmacological issues relevant to pharmacotherapeutics are discussed.

HLSC 414 SPECIAL TOPICS (1 to 4)

(Consent of Department)

Topics of special interest in Health Sciences. May be repeated to maximum of 6 hours.

HLSC 485 INTERDISCIPLINARY STUDIES

SENIOR PROJECT (3 to 4)

(Consent of Department)

Design and completion of Interdisciplinary Project. Requires approval of faculty committee.

HUMS - Human Services

Professors David (Chair), Flick

HUMS-100 COMMUNITY SERVICE (0-1 to 3) 3

Arranged field placement in community service for variable pass -fail credit. Work hours will vary by credit and project. HUMS-210 INTRODUCTION TO SOCIAL

WELFARE (3-0) 3 Annual

A basic course in social work that includes an introduction to the concept of welfare, history of welfare in the U.S., institutional aspects of welfare, basic social work methods, and some techniques of community organization.

HUMS-220 PUBLIC ADMINISTRATION (3-0) 3 Annual

Introduction to the basic concepts of public administration, including organizational theory, organizational authority and communications, personnel and financial administration, administrative responsibility in the public sector.

HUMS-280 Grant Writing and Documentation (3-0) 3

This is a 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 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-250 SPECIAL TOPICS IN HEALTH ADMINISTRATION (3-0) 3

Special topics in health administration and current health problems.

HUMS-290 PRACTICUM INTERNSHIP

(0-3-6) 3-6 Annual

(Consent of Department Chair)

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. (300 work hours are minimum and more is recommended)

HUMS-300 INTRODUCTION TO HEALTH CARE ORGANIZATIONS (2-0) 3

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 Annual

Introduction to the basic concepts of public administration, including organizational theory, organizational authority and communications, personnel and financial administration, administrative responsibility in the public sector.

HUMS-340 INTRODUCTION TO RESEARCH AND STATISTICS (3-0) 3 Annual

An introduction to basic research methods and statistical tools in the social sciences, Research design, Comparative research methods, including both quantitative and qualitative. Coverage of statistics will include measures of central tendency and dispersion, probability including the normal distribution, use of correlation and time-series analysis. Practical applications.

HUMS-400 HEALTH SERVICES LAW AND LEGISLATION (2-0) 2 Annual

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 legal 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 Annual

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

MICROHEALTHCARE FINANCE (3-0) 3 Annual

A critical study of healthcare finance at the department and sub-department level. The course will continue the3 study of financial information, decision making in the healthcare 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 CARE FINANCE (3-0) 3 Annual

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 Annual

Philosophical and sociological investigation of complex moral problems in medicine and health care delivery, topics include euthanasia, abortion, allocation of scarce medical responses, accessibility problems, AIDS, research and human experimentation, among others.

HUMS-450 Special Topics in Health Services Administration (3-0) 3.

HUMS-460 READINGS AND RESEARCH IN HEALTH SERVICES ADMINISTRATION (1 to 3)

(Consent of instructor and one course in the discipline) Directed readings and research in health services administration.

HUMS-470 HEALTH SERVICES PLANNING (3-0) 3 Introduction to the history and development of health planning; introductory overview of planning techniques and familiarity with general quantitative methodology; legal, political, social and economic factors in health care planning with emphasis on policy formulation and implementation.

HUMS-475 SEMINAR IN PUBLIC SERVICE

(3-0) 3 (Consent of Department Chair)

Special topics in Public Service and current social problems HUMS 480 GRANT WRITING AND

DOCUMENTATION

(3-0) 3

This is a 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 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-490 PRACTICUM CAPSTONE INTERNSHIP (0-3-12) 3-12

(Consent of Department Chair)

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. 300 work hours are minimum and more is recommended.

INDT - Industrial Technology

Professor Javins (Chair), Associate Professor Fernando, Isaacs, Keller, King

INDT-100 INTRODUCTION TO TECHNOLOGY

(2-3) 3 As needed

This course is a survey of current Technology in the areas of communications, manufacturing and materials, construction, energy, power and transportation systems. Tools, machinery and equipment related to these systems will be used to further the students knowledge and skills.

INDT-212 PROJECT MANAGEMENT (3-0) 3

(2-3) 3 As needed F

(Permission of Instructor)

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.

INDT-220 CONSTRUCTION TECHNOLOGY

(2-0) 2 (Permission of Instructor)

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, lieht commercial, and industrial construction.

INDT-256 CAD/CAM SYSTEMS (2-3) 3

(MEET-121, DRET 214)

Utilization of skills developed in drafting and manufacturing courses to take advantage of AutoCAD LISP capability to build Numeric Control (NC) code directly from a CAD drawing. Students develop skills in the use of NC programmer software that can develop NC code and download through a post processor for operation of NC equipment. Various arrangements and applications of these systems are studied.

INDT-302 INDUSTRIAL SAFETY (3-0) 3 F

(For Juniors and Seniors)

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

(MEET-121, GNET-108, MATH-041, or BMATH-114, or permission of instructor)

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-352 POWER AND TRANSPORTATION TECHNOLOGY (3-3) 4 As needed (For Juniors and Seniors)

(For Juniors and Semons

Principles of operation and application of the generation, control, transmission, and utilization of power with emphasis on internal and external combustion engines; simple machines and mechanical power transmission devices; fluid power; electrical theory and power; and transportation devices.

INDT-354 INDUSTRIAL MATERIALS (2-3) 3 S (For Juniors and Seniors)

Introduction to types of materials-metals, ceramics, polymers, composites, and semiconductors; environmental degradation of materials, and material selection.

INDT-356 CAD/CAM SYSTEMS (2-3) 3 S (MEET-121, DRET-214, INDT-308)

Utilization of skills developed in drafting and manufacturing courses to take advantage of Autocad LISP capability to build Numeric Control (NC) code directly from a CAD drawing. Students develop skills in the use of NC programmer software that can develop NC code and download through a post processor for operation of NC equipment. Various arrangements and applications of these systems are studied.

INDT-360 WOOD TECHNOLOGY (Both 6) 3

As needed (For Juniors and Seniors)

The wood and wood products industries are adapted to the classroom and laboratory experiences. Emphasis on the development of process skills, manufacturing setup, and other basics of wood product manufacturing to include understanding wood and wood properties, methods of fabrication, design, and future trends. Forest products, adhesives, lamination, and finishing.

INDT-384 ROBOTICS I (2-3) 3 F

(Junior status, ELET-171)

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 S

(Junior status, MATH-113, MATH 114, or permission of instructor)

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-413 INDUSTRIAL TECHNOLOGY PRACTICUM (1 to 3) As needed

(For Juniors and Seniors)

(Must be enrolled in a four-year technology program.) Special assignment in industry to correlate with the Industrial Technology program. Students must have a designated industrial supervisor and a faculty coordinator. Final approval granted by the student's department head.

INDT-420 CONSTRUCTION TECHNOLOGY

(Both 6) 3 S (INDT-354 or CIET-131, or Permission of Instructor)

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 II (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-499 INDUSTRIAL TECHNOLOGY PROJECTS (1-4 credits) As needed

(For Juniors and Seniors)

Selected projects or internships in Industrial Technology. Projects, or internships, must be approved by faculty before registration.

MATH - Mathematics

Tech Faculty:

Professors Cavalier (Chair), Munasinghe, Urbanski, B.Yang, C. Yang, Barton; Assistant Professor Svidersky, CTC at WVU Tech Faculty: (Technical & Developmental Math) Associate Professor Cercone; Assistant Professor Breeden (Chair)

Note: Students cannot receive credit for a math course with a lower number than the number of the last math course passed. This applies through MATH-251. Exceptions, however, can be made when specialized courses are required.

MATH-020 PRE-ALGEBRA (3-0) 3

(For students with ACT score of 0-13) F/S

Operations on integers, signed numbers, fractions, and decimals; percents; geometric formulas; introduction to Real Numbers; ratio and proportions; introduction to exponents and polynomials. Credit not applicable toward degree requirements.

MATH-030 ELEMENTARY ALGEBRA (3-0) 3

(For students with an ACT score of 14-16, or a "C" or better in MATH-020) F/S (Web availability)

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-040 INTERMEDIATE ALGEBRA (3-0) 3

F/S (Web availability)

(For students with an ACT score of 17-18 or a "C" or better in MATH-030)

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-035 MATHEMATICS LABORATORY 030 F/S (0-2) 1

Intensive group study and practice relevant to MATH-030. Passkey tutorial software utilized. Designed to supplement the lecture class, this laboratory class must be taken concurrently with the mathematics class 030. Laboratory, two hours per week per credit. Admission only by consent of the instructor. Pass/fail only.

MATH-036 MATHEMATICS LABORATORY 040 (0-2) 1

Intensive group study and practice relevant to MATH 040. Passkey tutorial software utilized. Designed to supplement the lecture class, this laboratory class must be taken concurrently with the mathematics class 040. Laboratory, two hours per week per credit. Admission only by consent of the instructor. Pass/fail only.

MATH-041 INTRODUCTION TO TRIGONOMETRY (1-0) 1 F/S

(For students enrolled in MATH-040)

The purpose of this course is to give the student the background necessary for MATH-114 or MATH-128. The course is designed to give students an introduction to trigonometry. Topics to be covered include trig functions, the values of trig functions for any angle, and right triangles and the trig functions. (Credit not applicable toward degree requirements.)

MATH-045 INTRODUCTION TO FINITE MATH (3-0) 3 F/S

(For students with an ACT score of 17-18 or a "C" or better in MATH-030 in a degree program that requires MATH-124 Finite Math.)

The purpose of this course is to give the student the background necessary for MATH-124. Topics to be covered include Cartesian coordinate system, linear equations, functions and systems, matrices, inequalities, business formulas, sets, permutations and combinations, and probability. (Credit not applicable toward degree requirements.)

MATH-113 TECHNICAL ALGEBRA (3-0) 3 F/S

(A grade of C or higher in MATH-040 or one unit each of high school geometry and algebra and ACT math score of 19 or more)

Fundamental Algebraic operations; functions and graphs; systems of linear equations; factoring; quadratic equations; exponents and radicals; higher degree equations; determinants; inequalities; systems of nonlinear equations; equations in quadratic form and equations with radicals.

MATH-114 TECHNICAL TRIGONOMETRY (3-0) 3 F/S

(A grade of C or higher in MATH-040 and MATH-041, or one unit each of high school geometry and algebra and ACT math score of 19 or more)

Analytical trigonometry; right and oblique triangles; vectors and vector algebra; radian measure; applications of radian measures; calculator solutions to triangles; formulas; identities; trigonometric equations; logarithms; graph of trigonometric functions and complex numbers.

MATH-117 TECHNICAL CALCULUS (3-0) 3 F/S

(Grade of C or higher in MATH-113 and MATH 114; or a grade of C or higher in MATH-125 and MATH-128; or a grade of C or higher in MATH-126 and MATH-128) (This course may not be used as credit toward a math major or minor).

Linear functions; conic sections; differentiation and integration of basic forms; some applications of derivatives. MATH-121 BASIC MATH I (3-0) 3 F

(Grade of C or better in MATH-040 or a math ACT of 19 or more and 1 unit of high school algebra)

Addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals. Ratio and proportion, square roots and percent. Perimeters, areas and volumes of

MATH-124 FINITE MATH I (3-0) 3 F/S

(Grade of C or better in MATH-045, 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 125 BASIC COLLEGE ALGEBRA (5-0) 5 F/S

(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; or a "C" or higher in Math 040) (3 credits applicable toward degree requirements.) (SEG MATH 126 for Topics)

MATH-126 COLLEGE ALGEBRA (3-0) 3 F/S

(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-040 must register for Math-125 and not Math-126.

Polynomials and rational expressions; exponents and radicals; equations and inequalities; systems of equations; relations and functions; matrices and determinants; theory of polynomial equations.

MATH-128 TRIGONOMETRY (3-0) 3 F/S

(Grade of C or better in MATH-040 and 041; or 2 units of high school algebra, 1 unit of high school geometry and ACT math score of 19 or higher)

Functions and graphs, trigonometric functions; applications of right triangles; vectors and oblique triangles; logarithms; graphs of the trigonometric functions; basic trigonometric identities; inverse trigonometric functions; trigonometric equations; complex numbers; exponential and logarithmic functions.

MATH-155 CALCULUS I (4-0) 4 F/S

(Grade of C or better in MATH-125 and MATH-128; or a grade of C or better in MATH-126 and MATH-128; or a grade of B or better in MATH-113 and MATH-114; or ACT math score of 30 or higher).

Limits; derivatives; differentiation of algebraic, trigonometric, exponential and logarithmic functions; applications of derivatives; integration; applications of integrals to area, volume and work.

MATH-156 CALCULUS II (4-0) 4 F/S

(Grade of C or better in MATH-155)

Inverse trigonometric functions; hyperbolic functions, indeterminate forms; methods of integration; approximate integration; additional applications of integrals; parametric equations, conic sections and polar coordinates; infinite sequences and series.

MATH-218 HISTORY OF MATHEMATICS

(3-0) 3 Offered as needed

Evolution of the number system; development of mathematics; lives and contributions of distinguished mathematicians; solution of famous problems.

MATH-236 FINITE MATH II (3-0) 3

S

(Grade of C or better in MATH-124)

An extension of MATH-136 to include limits, elements of differential calculus and applications, and integral calculus and multivariate calculus applications.

MATH-238 MODERN GEOMETRY FOR TEACHERS (3-0) 3 S

(MATH-251)

An axiomatic development of geometries emphasizing the similarities and differences between Euclidean and non-Euclidean geometries.

MATH-251 MULTIVARIABLE CALCULUS

(4-0) 4 F/S

(Grade of C or better in MATH-156) Three dimensional analytic geometry and vectors; partial

derivatives; multiple integrals; vector calculus. MATH-261 ELEMENTARY DIFFERENTIAL EQUATIONS (4-0) 4 F/S

(MATH-251; Grade B or better in MATH-315) Ordinary differential equations, Laplace transforms, partial differential equations, Fourier series, applications.

MATHEMATICS (3-0) 3 F

(MATH-156)

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

(Offered only in F Semester)

(Grade of C or better in MATH-117; This course may not be used as credit toward a math major or minor.)

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 Intro. to Algebra Structures (3-0) 3 (MATH-441) S

Sets; axiomatic treatment of number systems; factorization and decomposition of integers; congruences and equivalence classes; diophantine problems; introduction to algebraic structures; isomorphisms.

MATH-378 DISCRETE MATHEMATICS (3-0) 3

(MATH-251) Same as CSCI 350 (Offered only in S Semester)

Topics selected from discrete mathematics and applied to computer science. Students will study sets, algorithms, relations, functions, order relations, trees, groups, semigroups, algebra, Boolean algebra, finite state machines, and other topics.

MATH-381 TOPOLOGY (3-0) 3

(MATH-441) Offered when needed

Metric and topological spaces; sequences; open, bounded, and connected sets; limit points and closed sets; compactness. Continuous functions; mappings and subspaces; Euclidian spaces; topology of the real line.

MATH-420 NUMERICAL ANALYSIS (3-0) 3

(MATH-261 or MATH 441, Programming ability

required) Same as CSCI 456 (Offered only in S Semester) Numerical methods; applications to industry, engineering and computers; finite differences; interpolation formulas; numerical differentiation and integration; method of least squares; numerical differential equations.

MATH-441 APPLIED LINEAR ALGEBRA (3-0) 3 (MATH-251) F/S

Matrices; algebra of matrices; determinants; vector spaces; linear transformations; inner products; eigenvalues and eigenvectors; applications.

MATH-448 PROBABILITY AND STATISTICS (3-0) 3 F/S

(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 INTRO TO REAL ANALYSIS I (3-0) 3

(MATH-261) F

The real number system and a review of calculus from the standpoint of rigorous proof.

MATH-452 INTRO TO REAL ANALYSIS II

(3-0) 3 (MATH-451) S

A continuation of MATH-451.

MATH-456 INTRODUCTION TO COMPLEX ANALYSIS AND APPLICATIONS (3-0) 3

(MATH 251 and at least junior standing)

Brief review of complex algebra; the complex plane;

functions, limits, and continuity; extension of elementary functions to complex values; differentiability and the Cauchy-Riemann equations; conformal mapping; the idea of analytic function; the Cauchy integral theorems and theorems of Morera, Liouville, Rouche and Weierstrass; the residue theorem; applications to Fourier and Laplace transforms.

MATH-493 SPECIAL TOPICS (1to 4)

Topics designated as offered. (Consent of the department) MATH-465 MATHEMATICS SENIOR SEMINAR (1-0) 1

(Admission only to declared, senior rank, mathematics majors. Pass/fail grade).

Designed to review, supplement, and measure previous learning in mathematics. Topics will involve algebra, analysis, geometry, and their applications. An oral presentation component is required.

MECE - Mechanical Engineering

Professors: Puttaiah (Chair), Steranka, Yu; Assistant Professor: Bettig

MECE-201 APPLIED ENGINEERING

ANALYSIS (3-0) 3

(GENE 111, MATH 156) S

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.

MECE-240 MANUFACTURING PROCESSES (2-3) 3

(GPHS-120) 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.

MECE-304 KINEMATICS AND DYNAMICS OF MACHINERY (3-0) 3

(GENE-242) F

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.

MECE-318 MECHATRONICS & MEASUREMENT SYSTEMS (3-0) 3 As needed

(GENE-242, MATH 156, ELCE 220 or Consent of Instructor)

Circuits and electronics, sensors, and actuators. Analysis and synthesis of mechatronic systems, electromechanical system coupling, actuating devices, real time interfacing and case studies.

MECE-332 THERMODYNAMICS I (3-0) 3 (MATH-156) S 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.

MECE-333 MECHANICAL MEASUREMENTS (0-3) 1

(MECE-332, MECE-201) F

Laboratory measurements of physical quantities relevant to the mechanical engineering practice. Probability and statistical analysis of experimental data. Calibration of instruments. Sensors and transducers for temperature, pressure, strain, and fluid flow measurements. Technical report writing.

MECE-334 THERMODYNAMICS II (3-0) 3

(MECE-332) (Continuation of Thermo I) F

Irreversibility and availability; power and refrigeration cycles, thermodynamic relations; mixtures and solutions; chemical reaction; phase and chemical equilibrium; flow through nozzles and blade passages.

MECE-335 EXPERIMENTAL METHODS (0-3) (BMECE-334, MECE-201) S

Methodology of experimental investigation; common properties of electrical, mechanical, thermal, and fluid systems, statistical analysis of data.

MECE-336 HEAT AND MASS TRANSFER (3-3) 4 (CHEE-202 or MECE-332) S

Steady-state and transient conduction; one-, two-, and threedimensional conduction; free and forced convection; radiation; heat exchangers; heat and mass transfer by analytical, numerical, analogical, and experimental methods.

MECE-340 VIBRATIONS (3-0) 3

(MATH-261, GENE-242) S

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.

MECE-404 DESIGN OF MACHINE ELEMENTS (2-3) 3

(GENE-243; BMECE-304) F

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.

MECE-405 SENIOR MECHANICAL ENGINEERING LAB (0-3) 1

(MECE 335, 336, MECE 201) F & S

Analysis and testing of selected thermal or mechanical systems, such as, turbines, fans, pumps, air conditioning, vibration, and internal combustion engines, statistical analysis.

MECE-407 POWER PLANT ENGINEERING (3-0) 3 As needed in F

(MECE-334; MECE-336 or consent of instructor)

Fuels and combustion, steam generators, superheaters, reheaters; condensers, economizers; feedwater heaters; air preheaters, draft systems; introduction to nuclear power plant systems; aspects of environmental pollution, alternative energy systems including hydroelectric plants; field trips.

MECE-408 REFRIGERATION AND AIR CONDITIONING (3-0) 3 As needed in S

(MECE-334, MECE 336 or consent of instructor)

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.

MECE-410 MATERIALS SCIENCE (3-3) 4

(CHEM-115; GENE-243, Senior Status) S

Metals, microstructure, chemical composition, heat treatment, plastic deformation, fracture, fatigue, creep, and wear; introduce preparation and microscopic examination of specimens; advanced materials testing.

MECE-430 INTERNAL COMBUSTION ENGINEERING (3-0) 3 As needed in F (MECE-334)

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.

MECE-434 AERODYNAMICS (3-0) 3

(GENE-331; MECE-334) As needed in F

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.

MECE-435 THEORY OF TURBOMACHINES (3-0)3

(MECE-334, GENE-331) As needed

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.

MECE-439 INDUSTRIAL HYDRAULICS: **COMPONENTS AND CIRCUITS DESIGN (2-3) 3**

(GENE-243, GENE-331 or consent of instructor) As needed in F

Basic laws of fluid power. Fluids and auxiliaries. Energy input, energy control and energy output devices. Hydraulic circuits, symbology, operation, analysis and design practices. Component selection and performance analysis.

MECE-440 AUTOMATIC CONTROLS (3-0) 3

(ELCE-220; MATH-261) S

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.

MECE-445 COMPUTER APPLICATIONS IN ENGINEERING (3-0) 3

(GENE-111, MATH-251) As needed in F

Use of spreadsheets for engineering applications. Graphics, drawing and plotting packages. Mathematical packages for equation solving and symbolic algebra. Overview of MATHCAD, MAPLE, MATLAB, 3-D solid modeling using I-DEAS and AUTODESK INVENTOR, Computational Fluid Dynamics Modeling, Visualization and Postprocessing.

MECE-449 EXPERIMENTAL STRESS ANALYSIS (2-3)3

(MECE-404) As needed

Mechanical, optical, electrical, grid, Moire fringe and brittle coating methods; strain gauge circuitry; photoelasticity; strain indicators; recorders, reflection and circular nolariscones

MECE-455 CADD (2-3) 3

(MECE 201, MECE-304 & Senior Status

or consent of instructor) F

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.

MECE-456 FINITE ELEMENT METHOD (2-3) 3

(BMECE 336, MATH-251, MECE-404, MECE 455) S Finite element formulation of boundary value problems in engineering. Design and application of one - and twodimensional 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.

MECE-465 ADVANCED MACHINE DESIGN (3-0)3

(MECE-404, MECE-201) As needed in S

Theories of failure in 2-D and 3-D stress systems. Fatigue failure modes and their analysis. Fatigue life estimation techniques. Plasticity of metals and applications. Creep behavior of engineering materials. Shock, wear, corrosion, and other modes of failure. Thermal stresses.

MECE-470 MECHANICAL ENGINEERING PROJECTS (1 to 4)

(Junior or senior status) As needed

An investigation of analytical or experimental nature; design, construction and testing of an experimental apparatus.

MECE-476 ADVANCED VIBRATIONS (3-0) 3

(MECE-340) As needed

Three-dimensional kinematics and kinetics of particles and rigid bodies. Lagrangian mechanics; Hamiltonian methods; Equations of motion for strings, membranes, prismatical bars, and plates for various boundary conditions; approximate methods for complicated shapes.

MECE-480 SPECIAL TOPICS IN **MECHANICAL ENGINEERING 1 to 3** MECE-490 MECHANICAL ENGINEERING SYSTEMS DESIGN I (3-0) 3 F

(MECE-404 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 MECE 491

MECE-491 MECHANICAL ENGINEERING SYSTEMS DESIGN II (3-0) 3 (MECE-490) S

A semester-long design project in which students normally work in teams. Formal report required at the end of the semester.

MEET - Mechanical Engineering Technology

Associate Professors Isaacs; Keller (Chair)

MEET-121 MANUFACTURING PROCESSES I

(2-3) 3 F/S

(BDRET-120; BMATH 040/041 or ACT Math 18)

An introductory course combining the machine tool field with the welding and casting fields. A basic working knowledge of the terminology and processes used in both machine tools and welding fields. Laboratory experience on lathes, grinders, milling machines, shapers, and drills in the machine tool area; and welding and casting. Special projects are produced in both lab and class.

MEET-122 MANUFACTURING PROCESSES II (2-3) 3 S

(MEET-121, DRET 120) (BMATH-113)

An advanced course in the production and manufacturing systems, process capability, quality control; Computer Numerical Control machines, casting processes, milling machines, ferrous and non-ferrous metallurgy, heat and 338

surface treatment of metals, inspection, and safety are also covered. Special class and lab projects incorporate production operations.

MEET-225 MECHANICAL DESIGN I (2-2) 3 F

(DRET-120, MATH-113, MATH 114, MEET 121 or permission of instructor)

(BCIET 115)

A course in mechanical component terminology, specification, and integration. The following will be covered; couplings, clearance and interference fits, V-Belts, HTD drives, keys and keyways, sprocket drive systems, gears, and bearings.

MEET-226 MECHANICAL DESIGN II (2-2) 3 S

(MEET-225, DRET-121, CIET-115, MEET 240)

The primary focus of this course is system integration. Design projects will be assigned throughout and oral presentations will be required. This course also covers the following: centrifugal pumps, eccentric loading, bolts and fasteners, welded connections, sleeve bearings, mechanical seals, alignment, economic analysis, maintainability, and other related topics.

MEET-240 FLUID POWER (2-2) 3 F

(MATH 113)

An applied hydraulics course with special emphasis on factory or industrial hydraulic systems. Introduction to fluid mechanics, and mobile equipment and mining machinery. Subject matter includes types of hydraulic pumps and motors, cylinders, directional valves, sequence and counterbalance valves, volume controls, pressure-reducing valves, specifications for piping and filtration, etc. Selected computer application software is introduced.

MEET-250 CLIMATE CONTROL (3-3) 4 S

(MATH-113, PHYS-201)

This course begins with an overview of fundamental concepts of thermodynamics including energy equations, gas laws energy cycles, and vapor cycles. The course then moves to heating, cooling, and ventilation fundamentals including the design of heating and cooling installations. Humidity calculations using psychometric charts, electrical control systems, solar heating, and design fundamentals are also covered. Selected computer application software is introduced

MEET-299 MECHANICAL ENGINEERING TECHNOLOGY PROJECTS (1-4 credits) As needed

(Consent of the Advisor)

To provide for supervised independent study or projects in Mechanical Engineering Technology.

MEET-316 DYNAMICS (3-0) 3 F-Odd

(CIET-114, MATH-117)

A study of mass moment of inertia; rectilinear, angular, and planar motion; work, energy, and power; and inpulse and momentum as applied to technology.

MEET-435 ENERGY CONVERSION SYSTEMS

(3-0) 3 S-Odd

(MATH-117, PHYS-201, 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-499 ADVANCED MECHANICAL PROJECTS (1-4 credits)

As needed

(Consent of the Advisor)

To provide for supervised independent study or projects in Mechanical Engineering Technology.

MGMT - Management

Associate Professors A. Cavalier, Marshburn, McCormick (Interim Chair)

MGMT-125 CAREER DEVELOPMENT AND **OPPORTUNITIES IN BUSINESS (3-0) 3 S**

Introduction to careers in marketing, finance, computer information systems, management science, accounting, economics, and human resource administration. The student will be made aware of job opportunities in the public and private sectors and perform self-assessments to help plan his/her career.

MGMT-310 SMALL BUSINESS MANAGEMENT (3-0) 3 S Even

The characteristics of a small business and the managerial problems of beginning a small business; selling and marketing, financial controls; management of human resources; franchising; governmental interaction.

MGMT-381 FUNDAMENTALS OF

MANAGEMENT (3-0) 3

Historical perspective of management, managerial functions, ethics and social responsibility, and an introduction to management science.

MGMT-382 OPERATIONS MANAGEMENT (3-0) 3

(MATH-124; MGMT-381, layout, and control in production organizations. Application of linear programming, critical path analysis, PERT., value analysis, and other operations research techniques to production problems.

MGMT-386 BUSINESS STATISTICS (3-0) 3 (MATH-124)

Elementary principles of collecting and presenting statistical data; frequency distribution; grouping averages; dispersion and skewness; sampling processes; statistical inference; simple correlation: series analysis.

MGMT-387 INTRODUCTION TO

INTERNATIONAL BUSINESS (3-0) 3 F-Odd (MGMT-381)

This course is a broad survey of the field of international business. It examines the theory and the environment of international business as well as the nature of international business operations. Such topics as the basis for international trade and capital flows, foreign-exchange, marketing and exporting/importing, and managerial strategy and organization are considered.

MGMT-388 INTERNATIONAL

BUSINESS MANAGEMENT (3-0) 3 S-Even (MGMT-387)

This course focuses on the management challenges associated with business activity across national boundaries. Such topics as the scope and pattern of international business, international management and the multinational enterprise and the management of international political relationships and international social issues are discussed. MGMT-480 MANAGEMENT SCIENCE I (3-0) 3

(MGMT-381; MATH-124) F

Theory and application of deterministic management science models such as linear programming, trans-portation, assignment, integer programming, network analysis, and inventory control. Computer applications.

MGMT-481 MANAGEMENT SCIENCE II (3-0) 3 (MGMT-480) S

Theory and application of probabilistic models in management science. Decision theory under risk and uncertainty. Design and use of computer models to solve problems in dynamic programming, queueing systems, simulation, game theory, and decision theory.

MGMT-482 HUMAN RESOURCE MANAGEMENT (3-0) 3

Personnel administration; selection, training, testing, wage and salary policy and administration, promotion and transfer, maintenance of morale, personnel records and reports.

MGMT-483 QUALITY MANAGEMENT (3-0) 3

(MGMT-381; MGMT-386) S-Odd

Current quality management approaches. Statistical techniques useful in quality control of manufactured products and services including process control charts; process capability analysis; and acceptance sampling by attributes and variables. Studies of successful quality management programs.

MGMT-485 BUSINESS SIMULATION (3-0) 3

(ACCT 202; MGMT-381; ACCT-202; MKTG-304) S Business games that provide students with simulated realworld managerial decision-making experiences. The simulation provides students with the opportunities to make decisions that cross over functional lines.

MGMT-487 ORGANIZATIONAL BEHAVIOR

(3-0) 3 F

(MGMT-381)

Behavioral aspects of managerial decision making process. Individual, formal and informal organizations; specializations; incentives; authority; decision-making; and executive functions, and responsibilities.

MGMT-488 Strategic Management (3-0) 3

(MGMT 381; BFINC-325) S

Comprehensive business problems including the impact of business decisions on society.

Case study method is used.

MGMT-489 MANAGEMENT INTERNSHIP (1-6)

(Junior or Senior standing; consent of the Faculty of the Department of Management and Computer Information Systems or Printing)

Directed work assignments in private or public organizations. Student work experience and credit hours to be determined in advance by the supervising instructor and the cooperating organization, with specific academic assignments that are relevant to the intern's work experiences. Assignments in business management, computer information systems, industrial management, and printing management areas.

MILS - Military Science

MILS-101 INTRODUCTION OF MILITARY SCIENCE (2)

A topical survey of military science that introduces the student to the organization of the U.S. Army, contrasting and comparing it with civilian organizations; introduces the student to the basic concepts of drill and ceremony; provides basic techniques to refine a student's listening, writing, and speaking abilities; examines the nature of military law; explains the evolution of military heritage and standards of professional behavior; provides an overview of training management principles; and throughout the course concentrates on building student self-discipline and selfconfidence. This class meets two times each week. The Military Science lab (MS-103) is required to be taken in conjunction with this course. Participation in a physical fitness class and a weekend field training exercise is optional but highly encouraged.

MILS-102 INTRODUCTION TO LEADERSHIP (2)

(A continuation of MS-101)

Learn/apply principles of affective leading. Reinforce selfconfidence through participation in physically and mentally challenging exercises with upper division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader. This class meets two times each week. The Military Science Lab (MS-103) is required to be taken in conjunction with this course participation in a physical fitness class and a weekend field training exercise is optional, but highly encouraged.

MILS-201 INTRODUCTION TO SMALL UNIT LEADERSHIP (2)

Students learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams. Course focuses on the development skills in oral and written communications, planning events, coordination of group efforts, advanced first aid, land navigation and basic military tactics. This class meets two times each week. The Military Science Lab (MS-203) and participation in our physical fitness course. Participation in a weekend field training exercise is optional, but highly encouraged. Prerequisite MS 101 and 102, or the permission of the Professor of Military Science.

MILS-202 PRACTICUM IN MILITARY TRAINING AND TACTICS (2)

Introduction to individual and team aspects of military tactics in small unit operations. The class compares the actions of small organizations in the process of developing strategy, and tactics, while taking into account theory, political, economic, and physical factors. Continues development of leadership and critical skills. The Military Science Lab (MS-203) and participation in our physical fitness (MS-203) and participation in our physical fitness (MS-199, 299) courses are required in conjunction with this class. Participation in a weekend field training exercise is optional but highly encouraged. Prerequisite: MS-101, 102, prior military training, permission of the instructor.

MILS-103-203 MILITARY SCIENCE LEADERSHIP LABORATORY (1)

Open only to (and required of) students in the associated Military Science course (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-199-299 BASIC CONDITIONING AND FITNESS (1)

Open to all students, but required of students enrolled in MS-201 and 202. 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.

MILS-210 CAMP CHALLENGE

A six-week summer camp conducted at an Army post. The student receives pay. Travel, lodging and most meal costs are defrayed by the Army. The environment is rigorous and is similar to Army Basic Training. No military obligation incurred. Open only to students who have not taken all four of MS-101, 102, 201 and 202, and who pass a physical examination (paid for by ROTC). Completion of MS 210 qualifies a student for entry into the Advanced Course. Three different training cycles are offered during the summer, but spaces are limited by the army. Candidates can apply for a space any time during the school year prior to the summer. Students are eligible to compete for ROTC scholarships during the summer camp.

The Advanced course consists of the courses MS-301, 302, 310, 401 and 402. It is open only to students who have completed the Basic Course or earned placement credit for it (various methods). The Advanced Course is designed to qualify a student for a commission as an officer in the United States Army. Students must complete MS-310, a six week Advanced Camp during the summer, usually between the junior and senior years. The courses must be taken in sequence unless other wise approved by the Professor of Military Science. Students receive \$150 per month during the school year.

MILS-301 LEADING SMALL

ORGANIZATIONS I (2)

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 (MS-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 LEADING SMALL

ORGANIZATIONS II (2)

Continues methodology of MS-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, MS-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 optional. MILS-310 ROTC ADVANCED CAMP

A six-week camp conducted at an Army post. Only open to (and required of) students who have completed MS-301 and 302. The student receives pay. Travel, lodging and most meal costs are defrayed by the U.S. Army. The advanced Camp environment is highly structured and demanding, stressing leadership at small unit levels under varying, challenging conditions. Individual leadership and basic skills performance are evaluated throughout the camp. Although this course is graded on a Pass/Fail basis only, the leadership and skills evaluations at the camp weigh heavily in the subsequent selection process that determines the type commission and job opportunities given to the student upon graduation from ROTC and the university.

MILS-401 LEADERSHIP CHALLENGES AND **GOAL-SETTING** (2)

Plan, conduct and evaluate activities of the ROTC cadet organization. Articulate goals and put plans into action to attain them. Assess organizational cohesion and develop strategies to improve it. Develop confidence in skills to lead people and manage resources. Learn/apply various Army policies and programs in this effort. The Military Science leadership lab, (MS-403), 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-402 TRANSITION TO LIEUTENANT (2)

Continues the methodology from MS-401. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques. Examines aspects of tradition and law as relate

to leading as an officer in the Army. Prepare for a future as a successful Army lieutenant. The Military Science leadership lab, (MS-403), 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-303-403 ADVANCED COURSE

LEADERSHIP LABORATORIES (1)

Open only to students in the associated Military Science course. Different leadership roles are designed for students at difference 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-399-499 ADVANCED PHYSICAL FITNESS AND CONDITIONING (1)

Only offered to (and required of) students in MS-301, 302, 401 and 402. Students will participate in and learn to plan and lead physical fitness programs. Develops the physical fitness required of an officer in the Army. Emphasis on the development of an individual fitness program and the role of exercise and fitness in one's life.

MILS-490 PRACTICUM IN MILITARY **LEADERSHIP - DIRECTED STUDIES (1to3)**

(Prerequisites: Junior or senior standing and the permission of the Professor of Military Science.)

These seminars will include classes, directed readings, and presentations (both written and oral) on such topics as logistic management, national security, military law, ethics , and analytical models for decision making.

MKTG - Marketing

Associate Professor A. Russell

MKTG-305 ADVERTISING (3-0) 3

(MKTG-330) S

Basic principles of advertising; market research; components of the advertisement; registration and copyright laws and their effect; types of media; the completed campaign.

MKTG-306 RETAIL MERCHANDISING (3-0) 3

(MKTG-330 or consent of instructor) S

Store policies, location, equipment, layout, and organization; merchandise control; retail pricing, buying, and selling; advertising and display; store system; customer services; personnel management; retail accounting.

MKTG-309 SALES MANAGEMENT (3-0) 3

(MKTG-330 or consent of department) F

Market and distribution research; sales organization, contracts, and conventions; salesmen's compensation, equipment, standards, incentives, records, routes, guotas, budgeting, foreign sales.

MKTG-330 MARKETING (3-0) 3

(ECON-231)

The marketing concept; philosophy, establishment, and qualification. Relationships between marketing and the behavioral sciences. Investigation of marketing's functional areas. Introduction to international marketing.

MKTG-401 MARKETING RESEARCH (3-0) 3 (MGMT-386; MKTG-330) S-Even

The role of marketing research in modern organizations; information collecting methods; analysis of data; and application and presentation of research results.

MKTG-402 CONSUMER BEHAVIOR(3-0) 3

(MKTG-330, PSYC-221) S-Odd

Designed to integrate theories of consumer behavior that impact upon an organization's marketing activities. Explores individual and group behavior factors. Includes attitudechange strategies and consumer decision making.

MKTG-403 INTERNATIONAL MARKETING

(3-0) 3 F-Even

(MKTG-330, MGMT-387)

This course considers global/environmental issues and concepts which are important in international marketing. Such topics as the cultural environment of global marketing assessing global market opportunities and the marketing strategies for planning and organizing global marketing are addressed.

MUSC - Music Professor Meyer

MUSC-110 APPLIED VOICE (Arr.) 1 MUSC-120 APPLIED PIANO (Arr.) 1 MUSC-130 APPLIED FLUTE (Arr.) 1 MUSC-140 APPLIED OBOE (Arr.) 1 MUSC-150 APPLIED CLARINET (Arr.) 1 MUSC-160 APPLIED SAXOPHONE (Arr.) 1 MUSC-170 APPLIED BASSOON (Arr.) 1 MUSC-190 APPLIED FRENCH HORN (Arr.) 1 MUSC-195 APPLIED TRUMPET (Arr.) 1 MUSC-100 APPLIED TROMBONE (Arr.) 1 MUSC-100 APPLIED TROMBONE (Arr.) 1 MUSC-105 APPLIED TROMBONE (Arr.) 1 MUSC-105 APPLIED TUBA (Arr.) 1 MUSC-125 APPLIED PERCUSSION (Arr.) 1 MUSC-100 to MUSC-195 APPLIED MUSIC

Students taking applied music need to check with the individual instructor before enrolling. Development of performance techniques for personal musical expression and as an aid to one's teaching techniques. Exploration of pedagogical literature. An individual goal for all applied music majors is the senior recital. Participation and attendance at student recitals.

MUSC-142 SURVEY OF MUSIC (3-0) 3 F/S

A discussion of well-known musicians and musical compositions from classic and jazz idioms; elements of music notation, musical instruments, jazz artists, experimentation with creative aspects of music.

MUSC-161 PIANO CLASS (1-0) 1

Keyboard playing, reading music in treble and bass clef; easy piano literature; scales and melody harmonization for music majors only.

MUSC-201 PEP BAND (1-0) 1

Performance at football, basketball games, parades, and certain civic events; for enrichment of college life.

MUSC-202 CAMPUS BAND (1-0) 1 F/S

(Open to all qualified students with consent of department) May be used to substitute for PHED 101.

Transcriptions for symphonic band; compositions written especially for band, wind ensemble, and stage band. For enjoyment of members and to enrich college life.

MUSC-205 CHORUS (1-0) 1 F/S

(Open to all qualified students with consent of department) Performance of choral music on campus, in the community, and on tour. Concerts by Concert Choir and Tech Singers, the select touring chorus.

MUSC-250 FUNDAMENTALS OF MUSIC (3-0) 3

Elements of music, terminology, notation, simple rhythms, melody writing and basic ear training.

MUSC-301 SPECIAL TOPICS (Field Experience) (1 to 3)

(Permission of department)

Periodic offering of a variety of musical educational experiences such as field experience in music education, 20th Century music, as faculty and demand may permit.

MUSC-312 WVU TECH SINGERS (1-0) 1

Open to students with permission of department. Sing choral music with emphasis on pops music. Members are invited to sing by the conductor. Previous vocal and/or choral experience is recommended.

MUSC-318 JAZZ (0-1) 1

Rehearsal and performance of jazz music for campus and community events.

MUSC-441 MUSIC HISTORY (3-0) 3

(MUSC 142 or previous music experience is recommended before taking this course).

Goal and emphasis on listening skills. Recognize and distinguish between the basic style periods of music history. Composers and music of Classic, Romantic, and Impressionistic periods are covered biographically and in terms of their individual construction techniques.

MUSC-442 MUSIC HISTORY (3-0) 3

Exploration of music of Medieval, Renaissance, Baroque, and Contemporary Periods. Techniques of composition, biographical information and important compositions. Emphasis on listening skills. MUSC 142 or previous music experience is recommended before taking this course.

MUSC-443 FOLK MUSIC (3-0) 3

(Music 142 or permission of the instructor)

A study of music from Asia, South America, and West Virginia, especially music of India, Pakistan, China, Korea, Japan, Tibet, Iran, and Turkey. Representative South American music is from Mexico, Ecuador, and Brazil. Music from West Virginia will feature dulcimer players, fiddlers, and singers. Two class projects will be assigned.

NURS - Nursing

Associate Professor: F. Snodgrass (Chair); Assistant Professors: B. Douglas, E. Klocke, M. Harris, P. Lambert; Instructors Wilson, Whelan

NURS-110 HEALTH AND THE CARING PROFESSIONS (3)

Health promotion and risk reduction; data collection; cultural diversity; values that contribute to health; interpersonal communication in promoting professional relationships.

NURS-221 CONCEPTS: NURSING 1 (3PR: NSG 110 and BNSG 225)

(Sophomore standing or consent)

Human responses that promote health throughout the life span; individual health assessment.

NURS-225 NURSING INTERVENTIONS 1 (3 BNSG 221; PR: Sophomore standing or consent.)

Critical thinking in application of the nursing process in individuals with altered mobility, comfort, or potential infection; health protection, promotion and maintenance interventions.

NURS-241 CONCEPTS: NURSING 2 (3 PR: NSG 221 and NSG 225. BNSG 245)

Enhances student understanding of human responses to minor deviations in health throughout the life span; professional role in health restoration; family health assessment.

NURS-245 NURSING INTERVENTIONS 2"(3 PR: NSG 221 and NSG 225 BNSG 241)

Critical thinking in the application of the nursing process to individuals with minor deviations in health protection, health restoration, and health promotion/maintenance.

NURS-322 CONCEPTS: PEDIATRIC HEALTH (2)

NURS-325 INTERVENTIONS: PEDIATRIC (2 PR: NSG 361 or consent; BNSG 332.

Nursing interventions specific to human responses to pediatric problems. Emphasis on advanced independent and collaborative nursing activities.

NURS-334 CONCEPTS: ADULT HEALTH (2 PR: NSG 361 or consent; BNSG 335.)

The focus is on the human response to physiological system dysfunction. The emphasis is on the professional nursing role in complex physiological health restoration

NURS-333 W. ETHICS IN NURSING (3 PR: NSG 243 or consent)

Managing individual/family/group systems. Focus on ethical decision making in health care situations.

NURS-335 INTERVENTIONS: MEDICAL

SURGICAL (2 PR: NSG 361 or consent; BNSG 332

Nursing interventions specific to human responses to multiple physiological system dysfunction. Emphasis on advanced independent and collaborative nursing activities. NURS-340 PROFESSIONAL ROLE TRANSITION-

RN (3)

The course focuses on concepts and principles of professional nursing inherent in the curriculum of the School of Nursing. Emphasis is placed on how these concepts and principles affect nursing role.

NURS-345 INTERVENTIONS: PSYCHOSOCIAL

(2 Prereq: NSG 361 or consent; BNSG 356)

Nursing interventions specific to human response to multiple psychosocial system dysfunctions. Emphasis on advanced independent and collaborative nursing activities.

NURS-351 CONCEPTS: MATERNAL CHILD

(2 PR: NSG 361 or consent; BNSG 355.)

Human response to adaptations of the childbearing family. Emphasis on professional role in caring for childbearing families.

NURS-355 INTERVENTIONS: MATERNAL CHILD (2 PR NSG 361 or consent. BNSG 351.)

Nursing interventions specific to human response related to individuals and families experiencing child-bearing adaptation. Emphasis on advanced independent and collaborative nursing activities.

NURS-356 CONCEPTS: PSYCHOSOCIAL

(3 PR: PSYC 241. BNSG 351, NSG 355.)

Normal psychosocial functions change as a result of altered health; integration of developmental changes and preventive aspects of health.

NURS-361 HEALTH ASSESSMENT

(3 PR: NSG 225 or consent)

Comprehensive, in-depth assessment of the client's health status, health patterns, physical examination and health history. Interviewing techniques including taped interactions and accurate recording of data for clients across the life span. NURS-376 CLINICAL NURSING

PHARMACOLOGY (3 PR: Junior standing; BNSG 332.)

Principle of pharmacology emphasizing nursing role in accurate drug administration and patient assessment. Pharmacological management is analyzed with Pathophysiology. Particular emphasis is on patient/family teaching of pharmacological goals in order to maximize health potential.

NURS-421 CONCEPTS: CRITICAL CARE (3 PR) Senior standing in NSG or consent. BNSG)

NURS-423 LEADSHIP IN NURSING (2 PR: NSG 353 or consent)

Professional role in creating and managing the health care milieu. Focus is on the nurse teacher/manager roles and interventions in support of the client/family experiencing acute or long term health problems.

NURS-425 INTERVENTIONS: LEADERSHIP/ CRITICAL CURE. (6 PR: Senior standing in Nursing

or consent BNSG 421)

Emphasis on professional nursing role in supporting individual/family/group responses to acute life threatening situation involving vulnerable populations; focus is on nursing role in providing care to unstable individuals/ families/groups. Professional nursing role in supporting human responses to acute, life-threatening situations involving identified vulnerable populations; focus is on therapeutic nursing interventions specific to aid human responses of individuals with physiologic instability and their families.

NURS-433 SEMINAR: PROFESSIONAL ROLE SYNTHESIS-RN (3 PR: NSG 343)

Emphasis is on implementation of the professional nursing role within a changing health care system. Focuses on analysis of societal, institutional, and economic factors that affect the delivery of health care.

NURS-441 CONCEPTS COMMUNITY (3 PR:)

(Senior standing in nursing or consent BNSG 445) Community Health Nursing processes, with emphasis on the professional nursing role in the assessment of community health needs and identification of health action potential.

NURS-442 REVIEW CLINICAL PROBLEMS (2 PR Senior status.)

Professional nursing role in dealing with advanced clinical problems in health promotion and disease prevention in vulnerable population groups. Emphasis is on intradisciplinary and multidisciplinary approaches to problem solving in health care.

NURS-445 INTERVENTIONS: COMMUNITY (5 PR: Senior standing in nursing or consent. BNSG 441.

Emphasis on the collaborative role of the nurse in assisting communities to develop and implement plans for health promotion/risk reduction across the life span. Focus is on vulnerable populations.

NURS-455 INTERVENTIONS: CAPSTONE. (1) NURS-476 INTRODUCTION TO NURSING RESEARCH (3 hr PR; Stat 211 or consent.)

Theory, concepts and methods of the research process intended to provide a basic understanding that is necessary for intelligent consumership of research findings.

NURS-486 NCLEX REVIEW (1 PR: Senior status.) 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.

OTEC - Office Technology Management

Professors Fox (chair), Harris; Assistant Professor Grose OTEC-100 OFFICE KEYBOARDING (Both 5) 2 (Fall)

(For students with less than one year of high school typing) Emphasis on technique, touch operation, keyboard mastery, skill building, and problem typing of letters and reports. Minimum speed attainment of 30 wpm with 95 percent accuracy.

OTEC-144 BUSINESS GRAMMAR (2-0) 2 (Fall)

Written and oral grammar review. Punctuation, spelling, plurals, possessives, capitalization, numbers, word usage, similar words, proofreading. Proper use of office reference manual.

OTEC-170 INTRODUCTION TO OFFICE TECHNOLOGY MANAGEMENT (Both 2) 1 (Fall)

An overview of program and career expectations and opportunities; review of basic office procedures, ethics and professionalism. Orientation to campus life.

OTEC-171 BASIC FORMATTING (Both 4) 2 (OTEC 100 or equivalent)

Computer concepts, terminology, and applications. Emphasis on letter formatting styles, manuscript formatting, tables, envelopes, and business forms. Minimum speed attainment of 45 wpm with 95 percent accuracy.

OTEC 172 DISCOVERING COMPUTERS (both 4) 3 (Fall/Spring) (Web)

Fundamentals of computers and computer nomenclature; upto-date technology; in-depth understanding of why computers are essential; how to access information on the World Wide Web; strategies for purchasing, installing, and maintaining a desktop computer, a notebook, a Tablet PC, and a PDA; assist in planning a career and getting certified in the computer field.

OTEC 174 VOICE RECOGNITION SOFTWARE INTRODUCTION (both 2) 1

(Spring)

Voice typing/dictating of phrases, sentences, paragraphs using computer digital dictating and phonetic recognition software. Create user speech files and basic functions, commands, and formatting. Covers enunciating, error correction, creating symbols and special characters, navigating documents.

OTEC 175 VOICE RECOGNITION SOFTWARE INTERMEDIATE (both 2) 1

(Spring)

Voice typing/dictating of phrases, sentences, paragraphs using computer digital dictating and phonetic recognition software. Developing proficiency in preparing business documents and forms. Adding words to voice vocabulary.

OTEC 176 ETHICS (1, 0) 1

(Spring)

Philosophical, sociological, and cyber investigation of complex moral problems in biomedicine and business/ management. Ethical, historical, political, and economic factors affecting decision making.

OTEC 177 LEGAL CONCEPTS IN HEALTH CARE (2, 0) 2

(Spring)

Legal guidelines & requirements for health care; risk management; informed consent; confidentiality, including impact of HIPAA; proper and complete documentation; importance of maintaining medical records, OSHA rules & regulation.

OTEC-181 RECORDS MANAGEMENT (1-0) 1

(Fall)

Alphabetic and numeric filing theory and practice. Record storage and retrieval systems; foundation for database management.

OTEC-182 BUSINESS MATH (3-0) 3

(Spring)

Basic business applications principles and applications with emphasis on inventory, depreciation, banking (check writing, statement reconciliation), basic accounting functions (accounts payable/receivable, billing and collection, post adjustments, process credit balance & refunds, post NSF checks), interest, taxes, payroll, sinking funds, and annuities. Use of touch control method on electronic calculators.

OTEC-183 MEDICAL ANATOMY AND TERMINOLOGY (3-0) 3 (Fall/Spring) (Web)

An introduction to essential components in building a medical vocabulary. Anatomic roots for words denoting body structure and fluids, prefixes, suffixes, and Greek and Latin verbal and adjectival derivatives. Basic introductory course for medical and allied health professions.

OTEC-184 COMPUTERS FOR HEALTH CARE MAJORS (Both 4) 3 (OTEC-100 or equivalent) (Fall)

Use of Windows, word processing programs, spreadsheets, and presentation graphics. Emphasis placed on use in medical or dental offices.

OTEC 185 Bookkeeping Basics (Both 1) (Spring)

Basic theory and practice; Analyze/interpret business transactions/reports including balance sheet, accounts receivable/payable, aged analysis, income statement, etc; T-accounts; Record keeping and reporting including withholdings; Budgeting principles; Payroll; B&O taxes; collection agencies; credit card purchases.

OTEC 186 Concepts in Human Resources (Both 1) (Spring)

Selecting and training employees; Employee orientation; Wage determination; Employee evaluation/appraisals; Employment law including Wage and Hour; Motivation; Job descriptions; Confidentiality; Accommodating employees with special needs; Policy and Procedure Manuals; Dealing with co-worker complaints, unions, grievances.

OTEC-187 WORD PROCESSING (Both 4) 3 (Corequisite OTEC 171 or equivalent) (Fall)

Extensive, in-depth, hands-on approach to word processing functions (merges, labels, pagination, headers/footers, macros, math, equations, search/replace, outlines and tables), graphics, and introduction to desktop publishing.

OTEC 188 MARKETING OVERVIEW (Both 1) Spring

Marketing mix; investigation/research demographic audiences; collection/analysis/ implementation of results to provide better services within target area; Tracking advertising dollars; Utilization of media; Participation in Open Houses/Community Fairs/Booths; Practice Brochures.

OTEC-199/299 SPECIAL TOPICS IN OFFICE TECHNOLOGY MANAGEMENT

(1-3 credits) (Consent of instructor) (Fall/Spring)

Specific topics presented in seminar and/or research in business and office education involving library and/or laboratory research, supervised work experience, model office or internship or combination thereof. May be repeated to maximum of six hours.

OTEC 270 TRANSCRIPTION INTRODUCTION (both 2) 1 (OTEC 171, 187)

(Fall)

Transcription of documents & records using transcribing equipment/computer. Production measurement and terminology review.

OTEC 271 TRANSCRIPTION INTERMEDIATE (SPECIALIZED) (both 2) 1

(OTEC 171, Medical: 183, 270) (Fall)

Transcription of specialized medical, legal, and/or executive documents (based on emphasis major).

OTEC 272 TRANSCRIPTION ADVANCED (SPECIALIZED) (both 4) 2

(OTEC 271) (Spring)

Apply knowledge of terminology, English grammar, punctuation, and spelling rules to the transcription of dictation from people with various ethnic backgrounds; transcribe accurately dictation from medical/legal specialties and sub-specialties; transcribe letters, information for a white paper, progress notes from clinic settings, and other medical reports correctly (medical); format reports/document according to AAMT/NALS guidelines; proofread and edit reports/document meticulously; identify and evaluate inconsistencies and/or inaccuracies in dictation and edit/ revise them accurately while retaining the meaning of the dictation; identify and appropriately mark items that require the supervisor and/or dictatorls attention; research and/or apply patient/client information for accuracy; apply research skills to patient/client information for accuracy; use appropriate reference materials efficiently for accurate completion of reports/documents; apply pertinent medicolegal/legal policies and procedures when necessary in the transcription process; design appropriate forms and templates. Achievement of exit transcription speed required.

OTEC 273 FUNDAMENTALS CLINICAL PROCEDURES (both 4) 2

(Fall)

Basic sterilization techniques, including universal precautions and PPE; prepare and maintain treatment areas, instruments, and equipment; maintain inventory; vital signs; patient histories; maintain medication and immunization records; patient education and instruction.

OTEC 274 CLINICAL TECHNIQUES & PROCEDURES (both 6) 2

(Spring)

Specimen collection and processing; diagnostic testing, including EKG and respiratory; venipuncture and capillary puncture; prepare patients and assist with exams and procedures, including preparing and administering medications; relay screening and follow-up testing results to patients. Students are required to complete CPR and first aid training independently.

OTEC 275 CLAIMS PROCESSING (both 2) 2 (OTEC 183, Co-requisite OTEC 284)

(Spring)

Basic insurance claims processing, data entry, superbills, insurance forms, EOBs. Incorporate ICD-9-CM & CPT coding systems for reimbursement of claims, utilizing Medical Manager software

OTEC 276 VOICE RECOGNITION SOFTWARE ADVANCED (both 2) 1

(Spring)

Developing proficiency in preparing medical, dental, legal and executive documents and forms. Addressing trouble spots, improving recognition accuracy, and managing and expanding voice vocabulary.

OTEC-280 SOFTWARE APPLICATIONS (Both 1) 1 (OTEC 100 or equivalent)

(Fall/Spring)

Databases, Spreadsheets, Internet, Web Page Development, Word Processing, Financial, Presentation Graphics, Medical/ Legal Packages, and E-commerce.

Five-week courses that provide hands-on experience with database, spreadsheet, web page development or word processing packages. Software incorporated will vary each semester, reflecting demands of the workplace.

OTEC-281 DESKTOP PUBLISHING (Both 2) 2 (OTEC 187)

(Spring)

Hands-on application of software used to prepare brochures, newsletters, graphic media and other published documents. Involves use of digital camera and scanner.

OTEC-282 INTERPERSONAL RELATIONS (Both 1) Leadership Development (1-0) (Fall/Spring)

A five-week course covering meeting management, problem solving, delegation, motivation, communication skills, conflict resolution, and negotiation skills. Students will design and implement a community service project applying leadership and teamwork principles.

Interviewing Strategies (1-0) (Fall/Spring)

A five-week course in which the student prepares for the job search by composing resumes and letters of application. SWOT analysis, salary research, statement of worth; includes building a professional portfolio and participating in a mock interview.

Professional Etiquette (1-0) (Fall/Spring)

A five-week course emphasizing essential professional courtesies, introductions, gift giving, meeting arrangements, dining tips. Emphasis on both American and international cultures.

Customer Service: Electronic (both 2) 1 (Spring)

Professional telephone and electronic communication skills. Includes both verbal and non-verbal signals. Covers telephone skills needed in the business world, including the use of phone technology, techniques, and etiquette. Cover difficult calls, effective messages, voice mail, customer service skills, and call screening techniques.

Customer Service: Face-To-Face (both 2) 1 (Spring)

Professional interpersonal communication skills. Includes both verbal and non-verbal signals. Meeting organization goals; attracting and retaining customers; diffusing angry clients; dealing with difficult situations; and working with diverse personalities, age groups, backgrounds, nationalities, abilities and cultures. Importance of attitude.

Group Dynamics (both 1) 1 (Spring)

Working in groups; stages of group development; communication; gender differences in conversational strategies, active listening; problem solving, guiding discussion; being an effective follower; social dimension; building a cohesive group; managing conflict.

OTEC-283 SPECIALIZED PROCEDURES (Both 4) 3 (OTEC-187) (Fall)

Procedures and terminology relating to specialized office environmentsÜmedical, legal, or executive (dependent on emphasis major). Use of specialized software application programs and/or office simulations. Includes a supervised work experience in actual and simulated environments; involves correspondence. Emphasis on attitude, professionalism, dress, punctuality, telephone courtesy, business etiquette, effective communication skills, and quality hands-on work production.

OTEC-284 MEDICAL CODING MANAGEMENT (3-0) 3 (OTEC-183 or equivalent)

(Spring)

Study of diagnosis and procedure codes used by healthcare providers. Use of ICD-9-CM and CPT-HCPCS codes for in-patient and ambulatory care coding; reimbursement codes.

OTEC-286 ADVANCED FORMATTING (Both 4) 3 (OTEC 171 and 187 or equivalents)

(Spring)

Capstone course covering advanced computer concepts and applications with emphasis on productivity. Compilation of manuals and reports, tables of contents/authorities, tracking documents, master/sub documents, electronic form preparation; digital signatures, document versions, electronic mail, and production of specialized technical, medical, and legal documents. Minimum production rate of 45 wpm; minimum straight copy rate of 60 wpm with 95 percent accuracy.

OTEC-287 OFFICE MANAGEMENT (3-0) 3

(Spring)

Basic concepts in administrative office management, leadership and motivation theory. Selection, orientation, training, appraisal, and promotion of employees. Office job analysis, salary administration, employee benefits. Management of office space, effective floorplans and design, ergonomics.

OTEC-299 SPECIAL TOPICS: OFFICE SIMULATION (0-3) 1 (OTEC-171 or equivalent) (Fall/Spring)

Supervised work experiences in actual and simulated environments; involves correspondence and work from various contributing academic departments. Emphasis on attitude, professionalism, dress, punctuality, telephone courtesy, business etiquette, effective communication skills, and quality hands-on work production. Pass/Fail course.

OTEC-299 SPECIAL TOPICS: EXTERNSHIP (0-15) 3 (Medical/Legal: OTEC 283, 285, Computer: ELET 110/111, 122 and OTEC 270) (Fall/Sprng)

Supervised on-the-job training totaling 150 clock hours in an executive, medical, or legal office (dependent on emphasis major) under the supervision of a cooperating professional in the public or private sector. Pass/Fail course.

OTEC-299/199 SPECIAL TOPICS IN OFFICE TECHNOLOGY MANAGEMENT

(1-3 credits) (Consent of instructor)

Specific topics presented in seminar and/or research in business and office education involving library and/or

laboratory research, supervised work experience, model office or internship or combination thereof. May be repeated to maximum of six hours.

PHED - Physical Education

Professor Elmore (Chair); Visiting Assistant Professor Smith; Visiting Instructors, Beatty, Briggs, Corrick, Gill, Williams, Lagmay

PHED-100 TOTAL ATHLETE (3-0) 3 S only

Encompasses all aspects of the athlete in sport. Drugs, gambling, agents, violence in sports, women in sports, personal growth, etc. are presented

PHED-101 LIFETIME ACTIVITIES (0-2) 1

Health and Physical Education concepts includes carry over skills and techniques in a broad and varied list of elective activities. Maybe repeated to maximum of six hours.

PHED 103 COACHING SP OLYMPICS (3-0) 3

An in-depth look into the techniques and methods used in coaching Special Olympics.

PHED-104 BASKETBALL SKILLS (0-2) 1 F only

Performance based on skills and basic techniques. Offenses and defenses presented

PHED-105 NUTRITION FOR ATHLETES (3-0) 3 F only

The study of normal and therapeutic nutrition and its implications in health care during one's lifespan. Principles of normal nutritional needs of children, adolescents, and older adults are studied with an emphasis on sports participation. Nutrients provided by the four basic food groups are investigated during the season of participation and off season conditioning.

PHED-106 INTRODUCTION TO SPORTS (3-0) 3 F only

Historical and philosophical basis, major issues, current trends in sport, and professional practices in sport.

PHED-107 CREW (1-3) 3

Introduction to crew; techniques of sweep oar rowing; safety factors related to racing shells; rowing terminology; and basic care of the scull.

PHED-121 ATHLETIC INJURY, TREATMENT AND REHABILITATION (3-0) 3 S only

Provide students with basic knowledge and skills necessary to recognize, treat, and rehabilitate common athletic related injuries

PHED-125 TRACK SKILLS (0-2) 1 F only

Performance based on skills and basic techniques. Offenses and defenses presented.

PHED-130 FOOTBALL SKILLS (0-2) 1 S only

Performance based on skills and basic techniques. Offenses and defenses presented.

PHED-157 BASEBALL/SOFTBALL SKILLS

(0-2) 1 F only

Performance based on skills and basic techniques. Offenses and defenses presented.

PHED-159 SOCCER SKILLS (0-2) 1 S only

Performance based on skills and basic techniques. Offenses and defenses presented.

PHED-161 TENNIS SKILLS (0-2) 1 S only

Performance based on skills and basic techniques. Offenses and defenses presented.

PHED 164 WEIGHT TRAINING (0-2) 1

Weight training program designed for athletes.

PHED 165 CONDITIONING (0-2) 1

Conditioning program designed for athletes

PHED-167 INTRODUCTION TO SPORT MANAGEMENT (3-0) 3

An introduction and foundation to the field of Sport Management. Focuses on theoretical foundations and applied areas of Sport as it presents an overview to career possibilities.

PHED-168 THEORY, PRACTICE, AND

OFFICIATING TEAM SPORTS (1-2) 2

All aspects of selected team sports with emphasis on participation and skill development.

PHED-170 VOLLEYBALL SKILLS (0-2) 1 S only

Performance based on skills and basic techniques. Offenses and defenses presented.

PHED-172 CPR/First Aid for Coaches (3-0) 3 F only

Practicum and certification for First Aid and CPR.

PHED-174 INTERMEDIATE SWIMMING (0-2) 1

An intermediate swimming class that allow non-swimmers to participate.

PHED-175 LIFEGUARD TRAINING (0-2) 1

(PHED-176, or passing a swimming test prior to registration) Lifesaving and water safety techniques; organizing and teaching a lifesaving program; techniques of skin and scuba diving. (Completion of course enables certification as American Red Cross Lifeguard.)

PHED-176 ADVANCED SWIMMING (0-2) 1

(PHED-174 or passing a swimming test prior to registration) Advanced swimming. Competitive and basic strokes; physiological, psychological, and kinesiological principles; development of aquatic skills and an understanding of the teaching of these skills.

PHED-179 SCUBA DIVING (0-2) 1

(PHED 174)

Self-contained underwater breathing apparatus techniques and the scientific laws pertaining to that activity. Nationally recognized association diver's certification can be earned in this class

PHED-187 GOLF SKILLS (0-2) 1 F only Performance based on skills and basic techniques. PHED-256 PRINCIPLES AND PROBLEMS OF COACHING (3-0) 3 F only

Junior standing or consent of department. Designed to present principles and problems of interscholastic athletic coaching.

PHED-271 SOCIOLOGY OF SPORT (0-3) 3 F only Socio-cultural investigation of sport in American society.

PHED-272 PSYCHOLOGY OF COACHING

(3-0) 3 S only

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.

PHED-324 WATER SAFETY INSTRUCTOR (0-3)2

(PHED-178; Current Advanced Lifesaving Certificate) Leads to certification in American Red Cross-Water Safety Instruction. Strong swimming skills are extremely important. Swimming strokes and lifesaving techniques are analyzed. Opportunity to qualify as a waterfront safety instructor.

PHED-330 COACHING TENNIS (3-0) 2

(PHED-161 and 256)

Designed for students to gain coaching theories and athletic coaching experience in tennis through a supervised on-site experience with an athletic team.

(Laboratory work included.) PHED-361 COACHING SOCCER (3-0) 2 (PHED-159 AND 256)

Designed for students to gain coaching theories and athletic coaching experience in soccer through a supervised on-site experience with an athletic team.

(Laboratory work included.)

PHED-362 COACHING BASKETBALL (3-0) 2 (PHED-104 and 256)

Designed for students to gain coaching theories and athletic coaching experience in basketball through a supervised onsite experience with an athletic team. (Laboratory work included).

PHED-364 COACHING FOOTBALL (3-0) 2 (PHED-130 and 256)

Designed for students to gain coaching theories and athletic coaching experience in football through a supervised onsite experience with an athletic team. (Laboratory work included)

PHED-365 COACHING BASEBALL/SOFTBALL

(3-0) 2 (PHED-157 and 256)

Designed for students to gain coaching theories and athletic coaching experience in baseball and softball through a supervised on-site experience with an athletic team. (Laboratory work included).

PHED-366 COACHING VOLLEYBALL (3-0) 2 (PHED-170 and 256)

Designed for students to gain coaching theories and athletic coaching experience in volleyball through a supervised onsite experience with an athletic team. (Laboratory work included)

PHED-380 HISTORY AND FOUNDATION OF SPORT (3-0) 3

Goals and principles of sport from its beginnings to the present

PHED-415 ORGANIZATION AND

ADMINISTRATION OF SPORT (3-0) 3

Techniques, practices, and policies governing the establishment, administration, and evaluation of sport programs.

PHED-421 EXERCISE PHYSIOLOGY (3-0) 3

(BIO-111 or PHSC-105) F only

Designed to provide the necessary scientific background for an understanding of physiological responses associated with muscular activity.

PHED-422 KINESIOLOGY (3-0) 3

(BIOL-211 or PHSC-105) S only

Principles of bodily movement in relation to anatomical structure with application of physical activity.

PHED-425 FACILITIES PLANNING (3-0) 3

A study of the organizational and administration of sport and recreational facilities and the unique problems associated with these special areas. Course will include a one hour supervised practicum experiences in planning, implementation and supervision in facilities management.

PHED-426 SPORT LAW (3-0) 3 F only

Provide students with basic knowledge of risk management, labor relations, contract law, tort law, taxation, and the court system as it relates specifically to the area of sport.

PHED-485 INTERDISCIPLINARY STUDIES SENIOR PROJECT (3-4-0) 3-4

(Consent of department) Design and completion of Interdisciplinary Project. Requires approval of faculty committee.

PHED-488 SENIOR SEMINAR (3-0) 3

(Consent of department)

(Only for last semester seniors) Integration of sport management theories and concepts with the overall field experiences.

PHED-489 INTERNSHIP IN SPORT MANAGEMENT (0-3-12) 3-12

(Consent of department)

Observation, participation and hands-on experience in a suitable sport agency. A qualified administrator will be available to enhance the student learning opportunities, 300 work hours are minimum, more is recommended.

PHED 491 INTERNSHIP IN SPORT (0-1-12) 1-12

(Senior standing or consent of department chair)

A student internship in selected sport related areas. PHED-493 SPECIAL TOPICS (1-3-0) 1-3

(Consent of department chair)

(Consent of department chair)

In-depth analysis of sport subject-matter areas through an innovative course of research or field experiences not included in the major curriculum but as an adjunct to the curriculum.

PHED-494 SENIOR SEMINAR (3-0) 3 S only

(Consent of department chair)

An In-depth independent study relating to sport specific areas.

PHED 495 INDEPENDENT STUDIES"(1-6-0) 1-6

Independent Course work in coaching strategies, research, and/or chair's consent.

PHED-499 SPECIAL TOPICS (1-3-0) 1-3

(Permission of the department)

In-depth study of a particular area of sports management at an advanced level.

PHIL - Philosophy

Professor Hissom

PHIL-301 INTRODUCTION TO PHILOSOPHY

(3-0) 3 As Requested

The development of philosophical thought from the time of the Pre-Socratics. Selections from the writings of the principal thinkers of ancient and medieval periods.

PHIL-302 INTRODUCTION TO PHILOSOPHY

(3-0) 3 As Requested

A continuation of PHIL-301, with emphasis on modern thought.

PHIL-305 INTRODUCTION TO CRITICAL REASONING (3-0) 3 As Requested

An elementary study of critical thinking and reasoning. For students who want to improve their skills in recognizing fallacious patterns of reasoning, constructing acceptable arguments, and criticizing faulty lines of reasoning.

PHIL-321 SOCIAL ETHICS (3-0) 3 As Requested

A philosophical analysis of social problems selected by the student to examine the role of philosophy in clarifying, justifying, and implementing social reforms.

PHSC - Physical Science

Professors Honey, Carlson; Instructor Fox

PHSC-104 PHYSICAL GEOLOGY (2-3) 3

Origin and development of the earth. Emphasis on earth materials and earth processes. Study of regional geology with emphasis on the formation of coal, gas, and oil along with the role of man in his geologic environment. Laboratory exercises include earth material recognition and properties, aerial photographs and topographic and geologic map study, and selected geologic projects.

PHSC-105 PHYSICAL SCIENCE I (3-3) 4

(MATH-124 or B)

Current theories and concepts of physical science; fundamental laws and concepts of physics, chemistry, astronomy, and geology.

PHSC-106 PHYSICAL SCIENCE II (3-3) 4 (PHSC-105)

Continuation of PHSC-105.

PHSC-311 ASTRONOMY (3-0) 3

(MATH-124) F

Current theories and concepts of astronomy; structure and composition of 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.

PHSC-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 and mapping and a one-day field trip.

PHYS - Physics

Professors Honey, Carlson; Instructor Fox

PHYS-201 COLLEGE PHYSICS I (3-3) 4

(MATH-126, 128 or MATH-113, ßMATH-114) Mechanics; properties of solids, liquids and gases; properties of heat; wave motion, including sound and applications. PHYS-202 COLLEGE PHYSICS II (3-3) 4

(PHYS-201)

Continuation of PHYS-201. Electricity and magnetism; basic electronics; properties of light; lenses and mirrors; optical phenomena; introduction to modern physics.

PHYS-213 PHYSICS FOR SCIENTISTS AND ENGINEERS I (3-3) 4

(GENE-121 or MATH-155)

Kinematics and dynamics; linear and angular momentum; Newton's laws of motion and gravitation; work and potential and kinetic energy; conservation laws; rotational dynamics; simple harmonic motion; waves; sound; hydrostatics and hydrodynamics; temperature and thermal energy; heat transfer; thermal properties of matter; laws of thermodynamics.

PHYS-214 PHYSICS FOR SCIENTISTS AND ENGINEERS II (3-3) 4

(PHYS-213; MATH-156)

Electrostatics; DC and AC circuits; electric and magnetic fields; electromagnetic induction; magnetic materials; Maxwell's equations; electromagnetic waves; lenses and mirrors; interference and diffraction; polarization; special relativity; photons, electrons, atoms, molecules, and solids; nuclear physics.

PHYS-221 INTRODUCTION TO PHOTOGRAPHY (2-3) 3

This course will provide an introduction to the basic principles and techniques of photography. Laboratory experience will develop skills working with monochrome materials.

PHYS-351 MODERN PHYSICS (3-0) 3

(PHYS-214; MATH-251)

Kinetic theory of matter; particle aspects of radiation; wave properties of particles; nuclear and atomic physics; Schroedinger's equation; molecular structure; properties of solids; quantum statistics; elementary particles.

PHYS-396 SPECIAL TOPICS IN PHYSICS

(1, 2, or 3)

(Permission of the department)

In-depth study of a particular area of physics at an advanced level. Topics may include, but are not limited to: Dynamics, Electromagnetism, Optics, Advanced Laboratory, Solid State, Quantum Physics, Relativity, Solar System Astrophysics, and Stellar Astrophysics.

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PHYS-496 SPECIAL TOPICS IN PHYSICS

(1, 2, or 3)

(Permission of the department)

In-depth study of a particular area of physics at an advanced level. Topics may include, but are not limited to: Dynamics, Electromagnetism, Optics, Advanced Laboratory, Solid State, Quantum Physics, Relativity, Solar System Astrophysics, and Stellar Astrophysics.

PMGT - Printing Management

Professors Nuckols, Arnold

PMGT-310 MULTIMEDIA PRESENTATIONS

(2-3) 3 F

The course is designed as an introductory level course in multimedia basics using a combination of interactive scripting, high quality photo capturing, and art manipulation that will be used to create effective management presentations.

PMGT-401 PRINTING ESTIMATING I (3-0) 3 F

(All printing courses at the 100, 200, and 300 levels) Printers' mathematics. Paper stock: sizes, basic and

substance weights, finishes, grades. Elements of cost estimating; classes of composition and presswork and bindery operation.

PMGT-402 PRINTING ESTIMATING II (3-0) 3 S (PMGT-401)

Continuation of PMGT-401. Cost centers in the commercial plant; using computers to estimate costs; planning economical printing production.

PMGT-403 PRINTING PLANT MANAGEMENT (3-0) 3 F

(All printing courses at the 100, 200, and 300 levels. Beginning level business courses MGMT-381 and MGMT-382 are recommended)

Organization, supervision, and operation of all printing plant departments; industrial relations; management problems and practices; methods of cost and production control; independent documentary research; problems in equipment and personnel selection; plant site selection and layout.

PMGT-420 PRINTING MANAGEMENT SEMINAR (1-0) 1 S

(Only for last semester seniors)

POLS - Political Science

Professors J. David (Chair), Harrison

POLS-102 AMERICAN FEDERAL GOVERNMENT (3-0) 3

U.S. government under the Constitution; powers and duties of the executive, legislative, and judicial branches; relationships between federal and state and local governments; expansion of federal power; federal agencies; foreign affairs.

POLS-212 STATE AND LOCAL GOVERNMENT

(3-0) 3

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-240 Introduction to Non-Profit Organization (3-0) 3.

A examination of the broad institutional and organizational components of non-profit organizations.

POLS-250 SPECIAL TOPICS IN GOVERNMENT (3-0) 3

(Consent of instructor of chair)

Readings or research on special topics in politics and government.

POLS-312 STATE AND LOCAL GOVERNMENT

(3-0) 3

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-316 COMPARATIVE GOVERNMENT (3-0) 3 Annual

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-340 CONSTITUTIONAL LAW (3-0) 3 (POLS-102) Annual

A survey of the major rules of federal constitutional law that focuses on the rules pronounced by the Supreme Court. While the case study method is utilized, the emphasis is on the rules of the constitutional law derived from those cases. **POLS-450 SPECIAL TOPICS IN GOVERNMENT**

POLS-450 SPECIAL TOPICS IN GOVERNMEN (3-0) 3

(POLS-102; POLS-312; or consent of Department Chair) Readings or research on special topics in politics and government.

POLS-460 READINGS AND RESEARCH IN POLITICAL SCIENCE (1-3)

(Consent of instructor)

Directed readings and research in political science and government.

POLS 480 Seminar in Non-Profit Administration (3-0) 3.

Special topics in the area of non-profit administration and current social problems.

PRNT - Printing Technology

Professors Arnold, Nuckols (chair); Associate Professor Ditchen, Assistant Professor Potter

PRNT-111 INTRODUCTION TO PRINTING PROCESSES (3-3) 4 F

The study of the history of printing, current aspects of the industry, and career opportunities. Comparison of lithographic, flexography, gravure, and screen printing processes. Lab projects and demonstrations including basic typography, layout and design, composition and page makeup, image reproduction, platemaking, printing, and finishing operations.

PRNT-112 PAPER AND INK (2-3) 3 F

Investigating paper manufacturing, properties and terminology, as well as paper cutting practices, paper

finishes and pricing; A study of ink manufacturing, components and characteristics; Lab devoted to testing papers and inks.

PRNT-114 INTRO. TO COMPUTERS (1-3) 1 F

A five week course on the basics of personal computers used in the printing. Overview of components, operating system and application software, networking and file-sharing, file formats, and basic troubleshooting, Labs will emphasize specific use of lab computer equipment and facilities.

PRNT-115 TEXT AND TYPE (1-3) 1 F

A five week course on the introduction to typography, including classification and design of fonts, and type utilities used with personal computers. Techniques used in word processing and page layout applications. Text formatting including indents, tabs, and use of style menus, and basics of design with type.

PRNT-116 INTRO. TO PAGE LAYOUT (1-3) 1 F

A five week course on the introduction to basic software used to create pages and publications for printing. Topics will include document creation, importing of text and graphics, basic introduction to graphic design, and output to PostScript language devices.

PRNT-125 DIGITAL PHOTOGRAPHY (1-3) 1 F

The course introduces students to the basics of producing digital images through hands-on activities and experiences operating a digital camera and basic imaging software to improve photos. During the class the student will define and use digital imaging terminology including file formats, identify features of different types of digital cameras, manipulate and organize images transferred from digital cameras, transfer images to computer software, and produce a variety of different digital photographs such as landscapes, portraits, action shots and product pictures.

PRNT-126 ELECTRONIC IMAGE CAPTURE

(1-3) 1 F

A five week course using flatbed scanners and digital camera to capture inages. Converting color images into grayscale, simple tone manipulation involving setting highlight, shadow and Unsharp Masking. An overview of file formats and image resolution appropriate for traditional and electronic image publication.

PRNT-127 IMAGE REPRODUCTION (1-3) 1 F

A five week course designed for the creation of image carries for offset lithography and fundamental use of offset presses to reproduce single and two color images.

PRNT-131 SHEETFED PRESS (3-3) 4 S

Study of various offset systems principles, and characteristics; operation of small and medium size sheet-fed offset presses with emphasis on multi-color work. Safety, maintenance, and quality control.

PRNT-134 GRAPHICS CREATION (1-3) 1

S (PRNT-125)

A five week course in the basics of bitmap and vector graphics applications used in the printing industry. File formats, image resolutions issues, and repurposing of images will be emphasized.

PRNT-135 PAGE LAYOUT II (1-3) 1 S

A five week advanced course in the use of page layout software, preflighting of files for production, digital workflow, and PostScript output issues.

PRNT-136 ACROBAT and PDF BASICS (1-3) 1 S

A five week course covering the creation of Portable Document Format files using Adobe Acrobat from PostScript language files, preparation of PDFs for print, on-line placement, and multimedia aspects.

PRNT-141 COLOR MODELS and USAGE (1-3) 1 S

A five week course covering color model usage for image capture, image reproduction and will include RGB, CMYK, L*A*B*, Munsell and Pantone. Physiological factors related to how humans perceive color and theories related to the use of color.

PRNT-142 INTRO. TO ADOBE PHOTOSHOP

(1-3) 1 S (PRNT-141)

A five week course covering the use of tools and pull down menus of Adobe PhotoShop. Also, image re-sizing, tone manipulation, unsharp masking, use of layers and channels to optimize color images.

PRNT-143 COLOR WORKFLOW MANAGEMENT (1-3) 1 S (PRNT-141)

A five week course using ICC color profiles to control color reproduction, compensation and modification of the originals for the printing process.

PRNT-145 SAFETY/ENVIRONMENTAL ISSUES

(2-0) 2 S

(Only for last semester Printing Technology majors) Examination of safety and environmental issues as they pertains to the commercial and newspaper industries. Specific emphasis on OSHA and EPA regulation will be covered. A research topic with report/presentation will also be required.

PRNT-216 WEBFED PRESS (3-3) 4 F (PRNT-116)

Imposition, web press systems, (including infeed, tension, ink, dampening, paster, safety systems), and waste control relating to commercial and newspaper web presses. Safety, maintenance and quality control.

PRNT-217 COLOR REPRODUCTION (3-3) 4 F (PRNT-117)

Electronic color separation using desktop color systems. Projects will include the creation and manipulation of electronic color images and assembly of electronic pages using current software.

PRNT-231 FLEXOGRAPHY (2-3) 3 S (PRNT-131)

An introduction to all aspects of Flexographic printing that will include design, film prep, plate making, presswork and finishing.

PRNT-235 DATABASES FOR PRINTERS (1-0) 1 S (4th Semester Printing Technology Majors)

An introduction to database creation of spreadsheets, modification and usages. Projects and assignments will be directly related to the printing industry. Types of projects will include file management, databases for publication distribution, tagged files for page creation and the use of databases a quality control instrument for the printing industry.

PRNT-238 BINDERY AND FINISHING (2-3) 3 S (PRNT-116, 211)

Various methods of stitching, drilling, die-cutting, perforating and trimming; imposition for hardbound, perfect and mechanical binding. Safety, maintenance and quality control.

PRNT-241 NEWSPAPER OPERATIONS (2-0) 2 S (PRNT-120)

Composition, editing, page make-up and pagination, print production, and distribution of modern newspapers. Current trends in the newspaper industry; management, journalistic and ethical considerations. Labs will concentrate on actual production of a newspaper.

PRNT-245 SCREEN PRINTING (2-4) 3 F

(PRNT-120, 125)(Third Semester Majors)

Concentrated use of the equipment in the area of screen reproduction; special projects and lab work to obtain higher degree of proficiency in screen printing. Two formal labs and one lecture.

PRNT-251 PRINTING SPECIALIZATION-Color (2-3) 3 S

(Fourth semester Majors; C or Higher in PRNT-217)

advanced concepts, principles and skills of electronic color separation and related technology. Two lectures, one lab working on desktop systems.

PRNT-255 PRINTING SPECIALIZATION– Webfed Press (2-3) 3 S

(Fourth semester Majors; C or Higher in PRNT-216) Concentrated use of offset web fed press equipment. Special projects will relate to both newspaper and commercial work. **PRNT-299 PROJECTS (1-3)**

(By consent of Faculty and Chair)

Selected studies in Printing Technology

PSYC-221 GENERAL PSYCHOLOGY (3-0) 3

F/S

Introduction to the scientific study of human and animal behavior; origins, growth, and development of behavior; language; conditioning and learning; states of awareness, emotion; behavior disorders and treatment; social psychology.

PSYC-241 LIFE-SPAN DEVELOPMENT (3-0) 3 S

(PSYC 221 must be passed with a grade of "C" or better) This course examines developmental change over the entire human life span. Based on psychological theory and research, it includes practical application. Emphasis is on normal physical, cognitive, and socioemotional growth. Developmental change is charted and described. Underlying psychological processes and biological and environmental influences are analyzed.

PSYC-322 SOCIAL PSYCHOLOGY (3-0) 3 S

(PSYC 221 must be passed with a grade "C" or better) (ENGL 100 or ENGL 101)

Introduction to social determinants of human behavior. Surveys the relationship of conformity, prejudice, social structure, and other group phenomena to individual behavior.

PSYC-323 INDUSTRIAL/ORGANIZATIONAL

PSYCHOLOGY (3-0) 3

(ENGL 100 or ENGL 101) F

Psychology as applied science. Application to: personnel selection, training, evaluation; factors influencing job performance including job design, physical setting, motivation; organizational characteristics, leadership, change.

PSYC-493 SPECIAL TOPICS IN PSYCHOLOGY

1-3 credits (Consent of instructor)

Specific topics presented in seminar and/or research on psychological phenomena involving library and/or laboratory research. May be repeated to maximum of six hours.

RESP - Respiratory Therapy

Program Coordinator: Bibbee

Instructors: will be taught by Carver Career and Technical Education Center faculty.

RESP-101, 102, 103, 201, 202, CLINICAL

ROTATIONS (0) 0 (F/S in sequence)

Clinical rotations provide opportunities for students to apply theory and skills in the work environment. Clinical rotations must be completed in sequence.

RESP-105 PATIENT ASSESSMENT (6-3) 7 F

A modular course designed to begin learning the terminology, diagnostics, and techniques used by the respiratory therapist. Preparatory information is covered to begin assessment and treatment of the acute or chronically impaired patient.

RESP-107 CP PHARMACOLOGY (3-0) 3 F (RESP-105)

Course designed to instruct the student in the physiology of pharmaceuticals used by the advanced level respiratory therapist. The pharmaceutical, pharmacokinetic, and pharmacodynamic phases of therapy are studied in depth along with the autonomic nervous system. Drug classifications are studied as they pertain to the respiratory patient. Calculation of intravenous medications and gram/ solution strength will be covered.

RESP-111 RESPIRATORY SKILLS I (4-3) 5 F (RESP-105) The theory and application of respiratory therapy equipment and techniques being used in the health care setting today. Modalities to be covered include: Basic Life Support (CPR); Respiratory Math and Physics; Gas Administration Devices and Therapy; Aerosol and Humidity Therapy.

RESP-112 RESPIRATORY SKILLS II (2-3) 3 S (RESP-111)

A continuation of RT Skills I in studying the theory and application of respiratory therapy equipment and techniques being used in health care. Modalities to be covered include: Airway Management; Infection Control and Microbiology; Lung Inflation Therapy.

RESP-115 PATHOLOGY (2-0) 2 S

(RESP-105, 111)

The course covers etiology and symptoms of various diseases encountered by the respiratory therapist. Emphasis is on assessment and critical thinking skills during the treatment of both acute and chronic illness.

RESP-205 NEONATES/PEDIATRICS (3-3) 4 S (RESP-220)

Special topics that relate to the treatment of the pediatric and neonatal infant. Assessment, therapy, and ventilatory differences will be stressed.

RESP-207 ALTERNATE HEALTH CARE (3-0) 3 F

(RESP-220, 210) (S)

Attention is given to the continuum of health care outside the acute hospital setting. Areas include DME companies, home care, skilled nursing units, and rehabilitation programs. Medicare and Medicaid regulations concerning reimbursement will be introduced to increase awareness of the legal and ethical considerations involved for the licensed respiratory therapist.

RESP-209 CLINICAL SIMULATIONS (1-3) 2 S (RESP-221, 210)

Information gathering and decision making training to prepare the student for the national board exams. The course is a compilation of the therapist's training acquired from all previous work.

RESP-210 CARDIOPULMONARY DIAGNOSTICS I (2-3) 3 F

(RESP-220)

An in-depth study of laboratory results and hemodynamics as they relate to the assessment and treatment of the cardiopulmonary patient.

RESP-211 CARDIOPULMONARY DIAGNOSTICS II—(2-3) 3 S

(RESP-210)

A continuation of Cardiopulmonary Diagnostics I as an indepth study of chest x-rays, EKG, and pulmonary function testing is highlighted. Also how they relate to the overall assessment and treatment of the cardiopulmonary patient. Critical thinking skills are emphasized.

RESP-215 REVIEW SEMINAR (1-3) 2 S (RESP-205, 211, 209)

The capstone course in respiratory care presented by Kettering National Seminars. The review covers respiratory care from beginning to end to prepare the student for the national board exam.

RESP-217 PROFESSIONAL ISSUES (3-0) 3 S (RESP-221, 210) (S)

Legal and ethical issues involved in respiratory care. Course will also cover professional behavior and characteristics and job seeking skills.

RESP-220 MECHANICAL VENTILATION I (2-3) 3 Summer

(RESP-112, 115)

Current modes of ventilation, types of ventilators, and mathematical calculations involved in their physiologic use. Application based on laboratory results and assessment techniques will be emphasized.

RESP-221 MECHANICAL VENTILATION II

(4-3) 5 F

(RESP-220)

Advanced techniques of ventilator support. Emphasis on assessment and care of the ventilator patient throughout the continuum of care.

REST - Restaurant Management

Restaurant courses taught at Carver Career & Technical Education Center.

REST-101 INTRODUCTION TO RESTAURANT MANAGEMENT (3-0) As needed

Overview of restaurant operations, career opportunities, legal aspects of restaurant and hospitality management, customer service, and management of foodservice operations.

REST-122 OPERATIONS MANAGEMENT (3-0) 3 As needed

Presenting service, menu management. Nutrition for the foodservice manager.

REST-131 COST CONTROL (3-0) 3 As needed

Financial management in food service, labor issues, food cost and food sales controls, analysis of financial data, managing security, production management, inventory.

REST-220 RISK MANAGEMENT (3-0) 3 As needed

Utilizing safe food handling and storage, purchasing and receiving safe food, cleaning and sanitizing, protecting food during preparation and service, understanding food safety regulations.

REST-221 OPERATIONS MANAGEMENT II

(2-3) 3 As needed

Managing quantity food operations, purchasing, catering operations, and food service facilities and equipment. Minimum 45 clock hours practicum.

REST-231 OPERATIONS MANAGEMENT III

(1-6) 3 As needed

Principles of professional cooking and baking. Bar and beverage service. Laboratory and minimum 90 clock hours practicum in off-site location.

REST-250 INTERNSHIP (Variable credit, dependent upon experience) (3-9) As needed

On-the-job apprenticeship training in approved site for a minimum of 300 clock hours. Can be divided among semesters.

SOCI - Sociology

Professor J. David, (Chair); Assistant Professor Rezek

SOCI-101 PRINCIPLES OF SOCIOLOGY (3-0) 3

Sociological principles and human society; comparison of cultures; the family, social groups, classes, castes, races, and nations; human ecology; the community; education and religion; conflict and cooperation; social change.

SOCI-222 SOCIAL PROBLEMS (3-0) 3 Annual

(SOCI-101 or consent of Department Chair)

Survey of major social problems of individuals, groups man's relations to the environment and international problems; analysis of programs of solution and social control.

SOCI-230 WORLD RELIGIONS (3-0) 3

Introduction to major religious traditions of the world. Through lectures, speakers, assigned readings, field trips, and occasional videos students will gain a broad basis knowledge of the major religions.

SOCI-233 JUVENILE JUSTICE (3-0) 3 (as needed)

The history, philosophy and process of the juvenile court system are studied. Students are familiarized with the juvenile facilities utilized by the State of West Virginia. The differences between adult and juvenile offenders is emphasized along with the differences in the roles of correctional officers and staff in these locations. Current court cases and juvenile laws are examined in depth.

SOCI-240 CORRECTIONAL COUNSELING (3-0) 3 As needed

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.

SOCI-250 COMMUNITY BASED CORRECTIONS (3-0) 3 As needed

The history, philosophy, types and current trends in community based corrections is studies 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 of the court system are studied in depth.

SOCI-260 SPECIAL TOPICS IN SOCIOLOGY (3-0) 3

(Consent of instructor or chair)

Special topic, readings, and research in sociology.

SOCI-301 MEDICAL SOCIOLOGY (3-0) 3

This course is a survey of issues related to medicine as an institution in industrial society. Some attention is given to alternative health systems but primary thrust is oriented around social inequality. The socio-economic variables in the health care delivery system, socio-psychological factors surrounding the patient, and the roots of the current health care crisis.

SOCI-305 SOCIAL STRATIFICATION AND SOCIAL POWER IN AMERICAN SOCIETY (3-0) 3 (SOCI 10) account of Destructure (Nair)

(SOCI-101 or consent of Department Chair)

The course will focus on patterns of wealth, prestige, and power in American society. The contemporary configurations of social class will be analyzed in the light of historical patterns as well as future developments. The impact of social class status on the individual and socialpsychological patterns of class behavior will be studied. Philosophic arguments regarding the ethics of inequality will be considered.

SOCI-310 SOCIOLOGY OF THE FAMILY (3-0) 3 Annual

An examination of the family as a social institutionhistorical and cultural basis; changing definitions of family roles and functions; the family in relationship to economic, political, and social change.

SOCI-312 DEATH AND DYING (3-0) 3 Annual

The 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.

SOCI-321 SOCIAL PROBLEMS (3-0) 3 Annual (SOCI-101 or consent of Department Chair)

Survey of major social problems of individuals, groups, man's relationship to the environment and international problems; analysis of programs of solution and social control

SOCI-322 CULTURAL ANTHROPOLOGY (3-0) 3 Annual

(SOCI-101 or consent of Department Chair)

Culture: its content, patterns, growth, and change; institutions and value systems of preliterate and folk peoples; culture milieu's impact on socialization and personality development; acculturation and applying anthropology to the contemporary world.

SOCI-325 CRIMINOLOGY (3-0) 3 Annual

The nature and causes of crime, social and personal factors involved in patterns of criminal behavior; methods of prevention and societal responses to crime.

SOCI-327 APPALACHIAN CULTURE (3-0) 3 Annual

Overview of Appalachian culture and development from settlement to the present. The course draws on the folk culture, culture of poverty, regional development, and colonial models to offer perspectives on Appalachian cultural diversity, social problems, power relationships, and development.

SOCI-330 INDUSTRIAL SOCIOLOGY (3-0) 3

(SOCI-101 or consent of Department Chair) Annual

Industry, society, and community, analysis of power and performance within the firm; management and labor unions as organizations.

SOCI-343 CULTURAL DIVERSITY (3-0) 3 Annual

Analysis of the nature of diversity in American society, with specific attention to the social problems associated with intolerance and ethnocentrism. The historical contribution of diverse populations. Current issues related to multiculturalism and diverse population characteristics.

SOCI-345 SOCIOLOGY OF WOMEN (3-0) 3 Annual

An analysis of the role of women in traditional and modern societies with special emphasis on socialization, education, occupational and work roles, family, marriage and parent roles, legal and political status, and movements for civil and personal rights.

SOCI-430 WORLD RELIGIONS (3-0) 3

Introduction to major religious traditions of the world. Through lectures, speakers, assigned readings, field trips, and occasional videos students will gain a broad basis knowledge of the major religions.

SOCI-450 SPECIAL TOPICS IN SOCIOLOGY (3-0) 3

(SOCI-101 or permission of instructor/Department Chair) Special topics, readings, and research in sociology. SOCI-455 READINGS AND RESEARCH IN

SOCIOLOGY (1 to 3)

(Consent of instructor and one course in the discipline) Directed readings and research in sociology and social work.

SPAN - Spanish

SPAN-101 ELEMENTARY SPANISH (3-2) 3

Alternate Semesters

Spanish pronunciation, vocabulary, grammar, structural concepts, spelling, and conversation. Modern language laboratory for pronunciation, accent, and speech patterns. Follow-up live monitoring of student's performance.

SPAN-102 ELEMENTARY SPANISH (3-2) 3

Alternate Semesters

(SPAN-101; or 1 unit of high school Spanish) Continuation of SPAN-101 with graded selections of Spanish prose.

SPAN-203 INTERMEDIATE SPANISH (3-2) 3

(SPAN-102; or 2 units of high school Spanish) Representative works of Spanish fiction. Background information on modern Spanish history and literature. Grammar and conversation review 2 hours per week.

SPAN-204 INTERMEDIATE SPANISH (3-2) 3

(SPAN-203; or 3 units of high school Spanish)

Continuation of SPAN-203. Reading comprehension of contemporary fiction and nonfiction. Oral drills; selected translations; grammatical analysis.

SPCH - Speech

Professor Kihn; Assistant Professor Tabit

SPCH-250 SPEECH COMMUNICATIONS (3-0) 3 F/S

(ENGL-102 and ENGL-202)

Principles of both formal and informal speeches; grammar in oral efforts; logical thinking and organization; listening techniques. Assignments in types of speech situations.

SPCH-471 ORAL INTERPRETATION (3-0) 3

As needed for program

(SPCH-250 or consent of department)

Oral performance, interpretation of prose, poetry, and drama; for aiding prospective teachers in oral communication and literature.

STAT - Statistics

Professor Urbanski

STAT-211 STATISTICS FOR THE HEALTH SCIENCES (3-0) 3

(MATH 124 or MATH 125 or MATH 113 or MATH 126 and permission of the instructor)

This course may not be used as credit toward a math major or minor.

Statistical inference, selecting appropriate statistical methods for data sets, interpreting results from commonly used statistical tests, evaluating reported statistical analysis in medical and health care literature, statistical calculations, interpreting SAS and SPSS output from commonly used procedures.

353 **Register**

Register HIGHER EDUCATION POLICY COMMISSION

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William McDermott, B.S. App. System Analysis Prg. Sr. Charles Amey, B.S. App. Systems Analysis Prg. Sr. Amos Jarrett Information Systems Technician

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TECH FOUNDATION, INC.

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COMMUNITY AND TECHNICAL COLLEGE at WVU TECH

Beverly Jo Harris, Ed.D. President, Community and Technical College at WVU Tech
Mallory, Kristin, Ed.D.
Vice President for Academic Affairs, Community and Technical College at WVU Tech
Tammy Bibbee, M.S.
Director, Transfer and Collaborative Programs
Suzette Breeden, B.S.
Chair, General Studies & Developmental Mathematics
Connie Fox, M.S.
Chair, Office Technology Management Assistant Director, Workforce Development: Business & Health Thomas Minnich, M.S.E.E. Director, Division of Engineering Technology & Industrial Technology Thomas Isaacs, M.S. Chair, Mechanical Engineering Technology William Javins, M.S. Chair, Drafting & Design Engineering Technology & Industrial Technology Melissa C. France, M.S., R.D.H. Acting Chair, Dental Hygiene Earl Waytowich, M.S. Chair, Civil Engineering Technology Michael Maxson, M.S. Acting Chair, Electrical & Electronic Engineering Technology Jack W. Nuckols, M.S. Chair, Printing Technology Director, Business, Health, Printing, and Transfer Programs Jacqueline Perry, Ph.D., CPA Liaison, Business Technology James Cercone, Ph.D., P.E.

Liason, Computer Science A.S.

FACULTY

(Date listed is the year the individual joined the faculty.)

COLLEGE OF BUSINESS, HUMANITIES AND SCIENCES

Abatjoglou, Anthony G., Ph.D.
University of Notre Dame, Associate Professor of Chemistry
2002
Amin, Md. Nurul, ABD, M.A., M.B.A., CPA
University of Illinois, Champaign; Associate Professor of Accounting
1994
Barton, Susan M., Ph.D.
Cornell University, Professor of Mathematics 1994
Bays, Beverly, M.S.N.
West Virginia University, Clinical Assistant Professor of Nursing
2006
Beatty, Shane, M.S.
Central Missouri State University, Lecturer, Department of Physical
Education 2005
Bellue, John V., Ph.D.
Wayne State University, Professor of English 1977
Beutler, Deborah., Ph.D.
Washington State University, Assistant Professor of Biology . 2000
Brown, Stephen W., Ph.D.
West Virginia University, Dean, College of Business, Humanities &
Sciences, and Professor of History 1973
Carlson, George T., Ph.D.
University of South Carolina, Professor of Physics 1988
Cavalier, D. Anne Cavalier, Ed. D.
Virginia Polytechnic Institute and State University, Associate Professor
of Management and Computer Information Systems 1987
Cavalier, John F., Ph.D.
Virginia Polytechnic Institute and State University 1969
Curry, Heather, M.S.N.
Marshall University, Clinical Instructor of Nursing 2006
Dangerfield, Debra Ann, M.A.

Marshall University, Assistant Professor of English 1981

West Virginia University, Professor of Economics and Labor Stud	lies,
Chair, Department of Social Sciences 1	971
Dean, William, Ph.D.	
West Virginia University, Assistant Professor of History 2	.003
Eisenstat, Donna, Ph.D.	
University of Michigan, Professor of English 1	998
Elmore, Sandra J., Ed.D.	
West Virginia University, Associate Professor and Chair of Phys	sical
Education 1	989
Ferrara, Lisa A., Ph.D.	
Rutgers University Professor and Chair of Biology	989
Flick Charlotte MS MPA	,0,
University of Nebraska Assistant Professor of Health Serv	ices
Administration 7	005
Fowler Amenda M S	.005
Solam University Lectures Deportment of Division Education 2	004
Salem University, Lecturer, Department of Physical Education 2	.000
Gupta, Kajenura K., M.A.	
Administration and Economics, Associate Professor of Busin	ness 002
Administration and Economics 1	983
Harris, Mindy L., MSN	000
Marshall University, Assistant Professor of Nursing 1	998
Harris, Peter G., Ph.D.	
Texas Tech University, Professor of English 1	989
Harrison, Barry, PhD.	
West Virginia University, Associate Professor of Political Science	ce
2	2002
Howells, Annette, Ph.D.	
Case Western Reserve University, Visiting Assistant Professo	r of
Chemistry 2	.006
Hurst, Scott, Ph.D.	
Loyola University of Chicago, Associate Professor of Chemistry	y
1	996
Janeksela, Galan, PhD.	
Iowa State University, Provost and Vice President for Acade	mic
Affairs, and Professor of Social Sciences 2	
Jones, Mark, M.S.	.003
	003
Indiana State University, Lecturer, Department of Physical Educa	003 tion
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Indiana State University, Lecturer, Department of Physical Educa 2 Kihn, Patricia L., Ph.D.	:003 ition :006
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 Indiana State University, Lecturer, Department of Physical Educa 2 Kihn, Patricia L., Ph.D. Wayne State University, Professor of English and Drama, Inte Chair, Department of History, English & Creative Arts 1 	2003 ation 2006 erim 991
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Indiana State University, Lecturer, Department of Physical Educa 2 Kihn, Patricia L., Ph.D. Wayne State University, Professor of English and Drama, Intu Chair, Department of History, English & Creative Arts 1 Kirk, Kelli T., MSN Mountain State University, Clinical Instructor of Nursing 2	2003 ation 2006 erim 991
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McCormick, Anna, M.B.A.
Virginia Polytechnic Institute, Associate Professor Interim Chair,
Department of Management 1988
Melton, Paul D., M.B.A., CPA, CFE
Ashland University, Associate Professor of Accounting 1990
Munasinghe, Ranjith, Ph.D.
University of Wyoming, Professor of Mathematics 1992
Oxendale, Lucia, M.S.
West Virginia College of Graduate Studies, Associate Professor of
Management Information Systems
Virginia Polytechnic Institute and State University Associate
Professor Accounting and Teacher Education 1008
Poves Alberto M Ir PhD
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Education 2004
Polyag Bayl H. Dh. D
Wast Vincinia University Accistent Declasson of History 2002
west Virginia University, Assistant Professor of History 2002
Kezek, Janis, M.A.
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University of Arkansas, Visiting Assistant Professor of Career
Technical Education 2001
Russell, Angelia R., M.B.A.
Marshall University Associate Professor of Marketing 1975
Santos, Nimfa, M.S.N.
St. Louis University, Philippines, Clinical Assistant Professor of
Nursing 2006
Sarin, Madhuri, M.A., M.B.A., CMA, CFM, EA
West Virginia College of Graduate Studies, Associate Professor and
Chair, Department of Accounting and Finance 1988
Schoening, Richard C., Ph.D.
Michigan State University, Associate Professor & Chair, Department
of Chemistry
Shaaban, Mostafa, Ph.D.
Indiana University, Professor of Economics 1968
Shaw, Amy, M.S.N.
Marshall University, Clinical Instructor of Nursing 2006
Simile, Robert P., M.F.A.
Indiana State University, Professor of Art 1986
Singleton, Julius, M.S.
Marshall University. Career and Technical Education
Smith Reginald, M.S.
West Virginia University Lecturer Department of Physical Education
2002
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of Compar Taskrical Education (1990)
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SVIDERSKY, HORA, P.R.D.
University of lowa, visiting Assistant Professor of Mathematics
2004

Tillquist, Alan, D.B.A.
Nova Southeastern University, Chair and Associate Professor of
Management/MIS 2006
Urbanski, Joseph V., Ph.D.
North Carolina State University, Professor of Mathematics 1989
Van Loo, Ina Kay, M.A.
Roosevelt University, Associate Professor of Management Information
Systems 1989
Vitaglione, Guy, Ph.D.
Kansas State University, Associate Professor of
Psychology 1998
Waters, Betty-Lou, D.A.
Middle Tennessee State University, Professor of English 1977
Wellstead, Carl, Ph.D.
McGill University, Associate Professor of Biology 1990
West, Nicole, Lecturer, M.S.
West Virginia University, Department of Physical Education . 2006
Whelan, Melanie , MSN
West Virginia University, Instructor of Nursing 2003
Wiedemann, Jay M., Ph.D.
University of North Dakota, Assistant Professor 2000
Williams, Robert F., M.S.
U.S. Sports Academy, Lecturer, Department of Physical Education
Wilson, B. Kent, MSN
Marshall University, Instructor of Nursing 2002
Yang, Bing, Ph.D.
Colorado State University, Professor of Mathematics 1991
Yang, Chengmin, Ph.D.
Colorado State University, Professor of Mathematics 1992
Yocke, Richard J., M.S.
Marshall University, Visiting Associate Professor of Career Technical
Education 1993
Yu, Guofen (Heather), Ph.D.
University of Electronic Science & Technology of China, Assistant
Protessor of Physics 2006

LEONARD C. NELSON COLLEGE OF ENGINEERING

Abdel-Hamid, Amr, Ph.D.
Concordia University, Assistant Professor of Electrical and Computer
Engineering 2006
Ashour, Mohamed A., Ph.D., P.E.
University of Nevada, Reno, Assistant Professor of Civil Engineering
2006
Bettig, Bernhard P, Ph.D.
Arizona State University, Assistant Professor of Mechanical
Engineering 2006
Cercone, James A., Ph.D., P.E.
Tennessee Technological University, Professor and Chair of Computer
Science
Clark, William M., M.S.
WVCOGS, Associate Professor of Computer Science 1980
Coleman, Nicholas, M.S.
University of Wisconsin, Computer Science 2006
Davari, Asadollah, Ph.D.
University of Alabama in Huntsville, Professor of Electrical and
Computer Engineering 1985

Doner, David M., Ph.D., P.E.
West Virginia University, Professor of Chemical Engineering 1984
Farooq, Muhammad, Ph.D.
University of London, Professor of Electrical and Computer
Engineering 1990
Gang, Dianchen, Ph.D., P.E.
University of Missouri at Columbia, Associate Professor of Civil
Engineering 2003
Goodman, Stephen, Ph.D., P.E.
Georgia Institute of Technology, Professor of Electrical and Computer
Engineering 1991
Jun, Jangeun, Ph.D.
North Carolina State University, Assistant Professor of Electrical and
Computer Engineering 2006
Lee, Kenneth Y., Ph.D.
University of California, Irvine, Assistant Professor of Civil
Engineering 2006
Leftwich, Steven D., Ph.D., P.E., P.S.
University of Virginia, Professor and Chair of Civil Engineering
1987
Minnick, Michael V., Ph.D.
Clemson University, Professor of Chemical Engineering 1987
Murthy, Krishna, Ph.D., P.E.
University of Delaware, Professor of Civil Engineering 1977
Nunoo, Charles N., Ph.D., P.E.
Florida International University, Assistant Professor of Civil
Engineering 2005
Puttaiah, Govindappa, Ph.D., P.E.
Pennsylvania State University, Professor and Chair of Mechanical
Engineering 1969
Ram, Surinder K., Ph.D.
University of Cincinnati, Professor of Electrical and Computer
Engineering
Sedghisigarchi, Kourosh, Ph.D.
West Virginia University, Assistant Professor of Electrical and Computer
Engineering
Smith, Don J., M.S.
Marshall University, Associate Professor of Computer Science 1979
Steranka, Paul O., Jr., D.Eng., P.E.
National Polytechnique Institute of Lorraine, Nancy, France, Professor
Mechanical Engineering 1992
Thomas, Garth D., Jr., M.S., P.E.
West Virginia University, Associate Professor and Chair of Chemical
Engineering
Wu, Zhiqiang, Ph.D.
Colorado State University, Assistant Professor of Electrical and
Computer Engineering
Yu. Juin S., Ph.D.
University of Illinois, Professor of Mechanical Engineering 1968
,

COMMUNITY & TECHNICAL COLLEGE at WVU TECH

Aamidala, Hari, M.S.	
Texas Tech University, Instructor	2004
Arceneaux, Camille, M.S.	
West Virginia University, Assistant Professor of Dental Hygier	ie

2004

Arnold, William, M.B.A.	
Rochester Institute of Technology, Professor of Printing Technolog 198	;y 8
Breeden, Suzette, B.S.	
West Virginia Institute of Technology, Assistant Professor and Cha	iı
of Developmental Mathematics	0
Cao, Wei, Ph.D.	
Cleveland State University, Associate Professor of Electrical	&
Electronic Engineering Technology 199	6
Cercone, Donna E., M.A.	
Tennessee Tech University, Associate Professor of Development	al
and Technical Mathematics)2
Ditchen, Michael, Ed.D.	
West Virginia University, Associate Professor of Printing Technolog 198	;y 7
Fernando, L. Christopher, Ph.D.	
Ohio University, Associate Professor of Drafting and Desig	;n
Engineering Technology & Industrial Technology 200	12
Fox, Connie M., M.S.	
Marshall University, Professor and Chair of Office Technolog	зy
Management 198	3
France, Melissa C., M.S., R.D.H.	
West Virginia College of Graduate Studies, Acting Chair, Dent	al
Hygiene and Associate Professor of Dental Hygiene 199	6
Gladwell, J. Mark, M.S.	
Marshall University, Assistant Professor, Office Technolog	;y
Management 200	6
Grose, Kelly, B.S.	
West Virginia University Institute of Technology, Assistant Professo	ы
of Office Technology Management 200	12
Harris, Beverly Jo, Ed.D.	
West Virginia University, President Community and Technical Colleg	ge
and Professor of Office Technology Management 197	5
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TITLE 133 PROCEDURAL RULE WEST VIRGINIA HIGHER EDUCATION POLICY COMMISSION SERIES 25

Title: RESIDENCY CLASSIFICATION FOR ADMISSION AND FEE PURPOSES

SECTION 1. General

- 1.1. Scope Rule regarding residency classification of students for admission and fee purposes.
- 1.2. Authority W. Va. Code ^{°°}18B-1-6, 18B-1-7, and 18B-10.
- 1.3. Filing Date July 2, 2002
- 1.4. Effective Date August 1, 2002
- 1.5. Repeal of Former Rule Repeals and replaces Title 128, Series 34 and Title 131, Series 34

SECTION 2. Classification for Admission and Fee Purposes

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

2.2. If there is a question as to domicile, the matter must be brought to the attention of the designated officer at least two (2) weeks prior to the deadline for the payment of tuition and fees. Any student found to have made a false or misleading statement concerning domicile shall be subject to institutional disciplinary action and will be charged the nonresident fees for each academic term theretofore attended.

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

SECTION 3. Residence Determined by Domicile

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

SECTION 4. Dependency Status

4.1. A dependent student is one (1) who is listed as a dependent on the federal or state income tax return of his/her parent(s) or legal guardian or who receives major financial support from that person. Such a student maintains the same domicile as that of the parent(s) or legal guardian. In the event the parents are divorced or legally separated, the dependent student takes the domicile of the parent with whom he/she lives or to whom he/she has been assigned by court order. However, a dependent student who enrolls and is properly classified as an in-state student maintains that classification as long as the enrollment is continuous and that student does not attain independence and establish domicile in another state.

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

SECTION 5. Change of Residence

5.1. A person who has been classified as an out-of-state student and who seeks resident status in West Virginia must assume the burden of providing conclusive evidence that he/she has established domicile in West Virginia with the intention of making the

permanent home in this State. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements, but also by that person's actions. In making a determination regarding a request for change in residency status, the designated institutional officer shall consider those actions referenced in Section 3 of these rules. The change in classification, if deemed to be warranted, shall be effective for the academic term or semester next following the date of the application for reclassification.

SECTION 6. Military

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

6.2. Persons assigned to full-time active military service in West Virginia and residing in the state shall be classified as in-state students for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

SECTION 7. Aliens

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

SECTION 8. Former Domicile

8.1. A person who was formerly domiciled in the State of West Virginia and who would have been eligible for an instate residency classification at the time of his/her departure from the state may be immediately eligible for classification as a West Virginia resident provided such person returns to West Virginia within a one (1) year period of time and satisfies the conditions of Section 3 of these rules, regarding proof of domicile and intent to remain permanently in West Virginia.

SECTION 9. Appeal Process

9.1. Each institution shall establish procedures which provide opportunities for students to appeal residency classification decisions with which they disagree. The decisions of the designated institutional official charged with the determination of residency classification may be appealed in accordance with appropriate procedures established by the president of the institution. At a minimum, such procedures shall provide that:

9.1.1. An institutional committee on residency appeals will be established to receive and act on appeals of residency decisions made by the designated institutional official charged with making residency determinations.

9.1.1.1. The institutional committee on residency shall be comprised of members of the institutional community, including faculty and at least three, in any event, an odd number. The student representative(s) shall be appointed by the president of the institutional student government association while the faculty representative(s) shall be selected by the campus-wide representative faculty organization.

9.1.1.2. The student contesting a residency decision shall be given the opportunity to appear before the institutional committee on residency appeals. If the appellant cannot appear when the committee convenes a meeting, the appellant has the option of allowing committee members to make a decision on the basis of the written materials pertaining to the appeal or waiting until the next committee meeting.

9.1.2. The residency appeal procedures will include provisions for appeal of the decision of the institutional committee on residency appeals to the president of the institution.

9.1.3. Residency appeals shall end at the institutional level.

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