2011-2012

College Catalog

Virginia Western Community College

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Post Office Box 14007
Roanoke, VA 24038–4007

Street address
3093 Colonial Avenue
Roanoke, VA 24015

http://www.virginiawestern.edu
TTY: (800) 855-2880 all users: 711
General information and registration system
(540) 857-8922

The statements and provisions in this catalog and the Student Handbook are not to be regarded as an irrevocable contract between the student and the College. The College reserves the right to change, when warranted, any of the provisions, schedules, calendars, programs, courses, or fees, as might be required. Supplements may be issued to this catalog as necessary by the College.

It is the policy of the Virginia Community College System and Virginia Western Community College to maintain and promote equal employment and educational opportunities without regard to race, color, sex, age, religion, disability, national origin, or other non-merit factors. For further information, contact the Title IX Coordinator in Chapman Hall, Room C102, phone (540) 857-6348 or the ADA/Section 504 Coordinator, at REACH Student Support Services, S102, phone (540) 857-7286. TTY number is (800) 855-2880 all users 711.

President's Welcome

ON BEHALF OF THE ENTIRE FACULTY AND STAFF, I would like to welcome you to Virginia Western. We hope your decision to join the 13,000 students who take classes at our main campus in Roanoke, and our off-campus sites at The Franklin Center, the Greenfield Education and Training Center in Botetourt county, and the Roanoke Higher Education Center will provide you with opportunities for academic and personal growth. Whether you are here to earn an occupational/ technical degree, transfer to a four-year institution, improve your skills in your current occupation, make a career change, or just take classes for personal enrichment, Virginia Western is your educational partner.

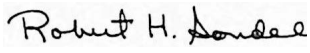
This catalog not only provides information about our extensive program offerings to help you plan your goals, it also includes information about financial aid and scholarship opportunities. We understand that individual needs vary when planning career schedules, and an education at Virginia Western has never been more convenient with day, evening, and weekend classes. Many students are now enjoying the flexibility of distance learning classes as well.

Virginia Western offers a comprehensive college experience with numerous student activities and support services available. Student success is important to us. Our dedicated faculty and staff are committed to fulfilling our mission in providing an affordable, quality education. We hope that you will take advantage of the programs and services the community college has to offer.

I encourage you to seek the guidance of our faculty and staff, to visit our Web site at http://www.virginiawestern.edu/ , or to call our Information Center at (540) 857-VWCC. If you would like to schedule a tour of our campus, there are student ambassadors who are available to assist you.

The faculty and staff are proud of Virginia Western and hope you will be proud to be part of the "Community's College." Best wishes to you for a successful academic year.

Sincerely,



College President

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Academic Calendar for 2011-2012

SUMMER TERM 2011

10-Week Session

First Day to Enroll ..... April 18
First Day of Classes ..... May 16
Last Day to Register/Add a Class ..... May 22
Last Day to Drop and Receive a Refund ..... May 26
Memorial Day Holiday ..... May 30
Last Day to Apply for Graduation This Term ..... June 8
Break (no classes) ..... June 21
Last Day to Withdraw Without Grade Penalty ..... June 27
Independence Day ..... July 4
Last Day of Classes ..... July 27
Last Grade Reporting Day (9:30 a.m.) ..... July 29

First 5-Week Session

First Day of Classes ..... May 16
Last Day to Register/Add a Class ..... May 18
Last Day to Drop and Receive a Refund ..... May 23
Memorial Day Holiday ..... May 30
Last Day to Apply for Graduation ..... June 8
Last Day to Withdraw Without Grade Penalty ..... June 5
Last Day of Classes ..... June 20
Last Grade Reporting Day (9:30 a.m.) ..... July 29

Second 5-Week Session

First Day of Classes ..... June 22
Last Day to Register/Add a Class ..... June 26
Last Day to Drop and Receive a Refund ..... June 27
Independence Day ..... July 4
Last Day to Withdraw Without Grade Penalty ..... July 12
Last Day of Classes ..... July 27
Last Grade Reporting Day (9:30 a.m.) ..... July 29

FALL SEMESTER 2011

16-Week Session

First Day to Enroll ..... July 18
First Day of Classes ..... August 22
Last Day to Register/Add a Class ..... August 28
Labor Day Holiday ..... September 5
Last Day to Drop and Receive Refund ..... September 8
Last Day to Apply for Fall Graduation ..... October 14
Last Day to Withdraw Without Grade Penalty ..... Oct 27
Faculty In-Service Day-No Day/Night Classes ..... Nov 22
Faculty Research Day - No Day/Night Classes ..... Nov 23
Thanksgiving Holidays ..... November 24 - 27
Last Day of Classes ..... December 10
Final Examinations ..... December 12 - 17
Last Grade Reporting Day (9:30 a.m.) ..... December 19

SPRING SEMESTER 2012

16-Week Session

First Day to Enroll ..... November 14
First Day of Classes ..... January 9
Last Day to Register/Add a Class ..... January 15
Last Day to Drop and Receive Refund ..... January 26
Last Day to Apply for Spring Graduation ..... February 10
Spring Break/Makeup* ..... March 4 - 11
Last Day to Withdraw Without Grade Penalty ..... March 22
Last Day of Classes ..... April 28
Final Examinations ..... April 30 - May 5
Last Grade Reporting Day (9:30 a.m.) ..... May 7
Commencement Ceremony ..... May 11

** Spring Break may be used as makeup days if too many instructional days are missed due to inclement weather.*

Administrative Officers

President ..... Dr. Robert H. Sandel
Vice President of Academic and Student Affairs ..... Vacant
Vice President of Financial and Administrative Services ..... Cheryl C. Miller
Administrative Officer for Planning and Assessment ..... Vacant
Administrative Officer for Workforce Development ..... Mike Greer
Administrative Officer for Workforce Development ..... James Smith
Administrative Officer for Workforce Development ..... Dan Semones
Coordinator of Advising and Retention Services ..... Dr. Gloria Lindsay
Coordinator of Developmental Education ..... Brooke N. Ferguson
Coordinator of Distance Learning and Instructional Technology ..... Ramona Coveny
Coordinator of Dual Enrollment ..... William A. Salyers, Jr.
Coordinator of Financial Aid and Veterans Affairs ..... Shawn C. Thomas
Coordinator of Grants Development and Special Projects ..... Marilyn J. Herbert-Ashton
Coordinator of Library Services ..... Lynn H. Hurt
Coordinator of Tech Prep Programs ..... Mia Fittz
Coordinator of Workforce Development and Lifelong Learning ..... Leah Coffman
Dean of Institutional Effectiveness ..... P. Rachelle Koudelik-Jones
Dean of Business, Engineering and Technology ..... James W. Poythress
Dean of Learning Technology and Resources ..... Vacant
Dean of Liberal Arts and Social Sciences ..... Dr. Elizabeth C. Wilmer
Dean of Science, Mathematics and Health Professions ..... Anne B. Kornegay
Dean of Student Services ..... Lori C. Baker
Director of Facilities Management Services ..... Kevin G. Witter
Executive Director for VWCC Educational Foundation and External Relations. ..... Kay Strickland
Student Support Services Counselor and Project Director ..... Dr. Avis Quinn

Campus Phone Numbers

Academic and Student Affairs, Vice President of ..... (540) 857-7313
Admissions Office and Registration ..... (540) 857-7231
Alliance for Excellence ..... (540) 857-7583
Bookstore ..... (540) 857-7334
Business, Engineering and Technology
- Business ..... (540) 857-7272
- Engineering ..... (540) 857-7275

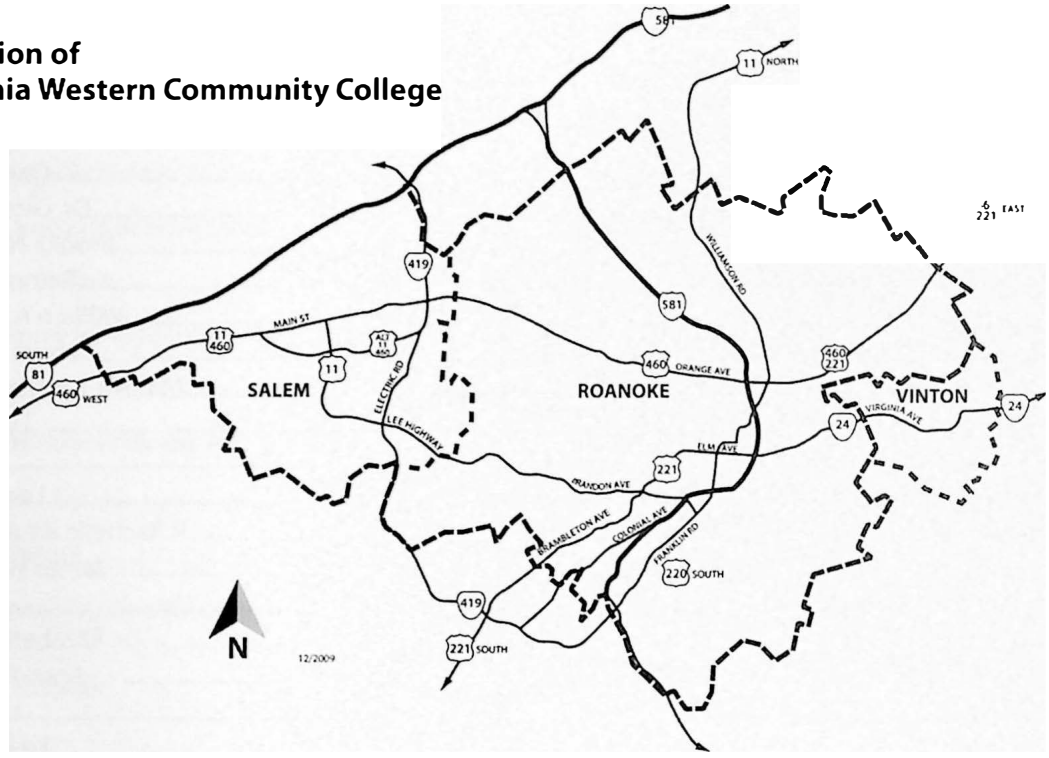
Campus Police ..... (540) 857-7979
Career and Employment Assistance ..... (540) 857-7298
Advising & Retention Services
- Advising ..... (540) 857-7237
- Retention Services ..... (540) 857-7583

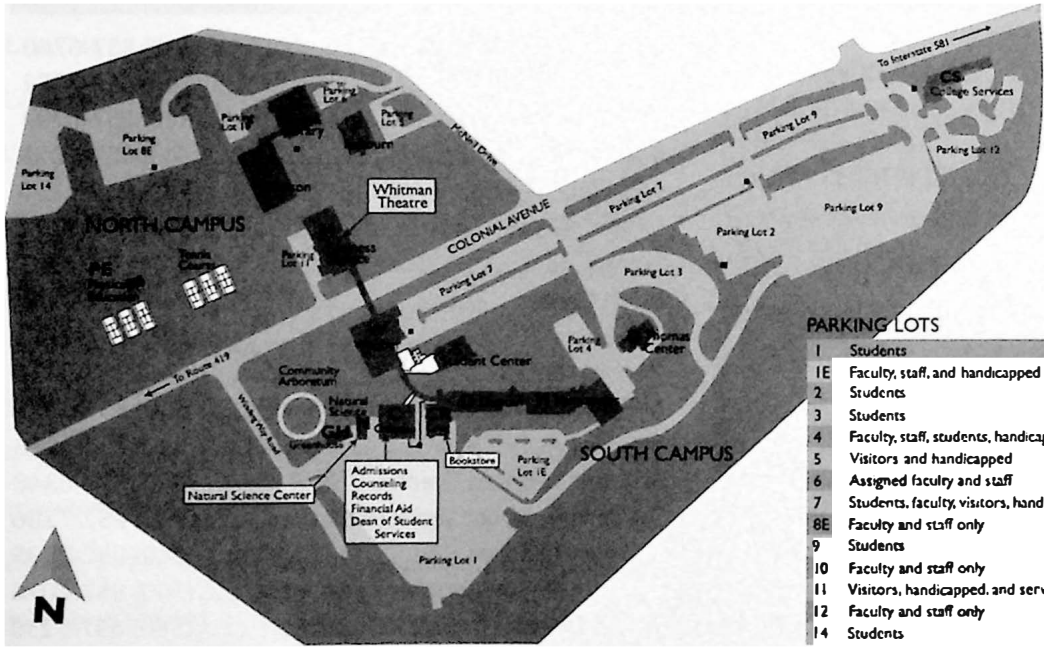
Dental Clinic ..... (540) 857-7221
Developmental Education ..... (540) 857-6323
Distance Learning ..... (540) 857-6202
Facilities Management Services ..... (540) 857-7341
Financial Aid ..... (540) 857-7331
Financial & Administrative Services ..... (540) 857-7201
Greenfield Education Training Center ..... (540) 966-3984
Gymnasium Office ..... (540) 857-6068
Health Professions ..... (540) 857-7306
Honors Institute ..... (540) 857-6240
Human Resources ..... (540) 857-7282
Institutional Effectiveness ..... (540) 857-6294
International Education ..... (540) 857-6021
Learning Technology Center ..... (540) 857-7250
Liberal Arts & Social Sciences ..... (540) 857-7271
Library ..... (540) 857-7303
Math Center ..... (540) 857-7250
President's Office ..... (540) 857-7311
Records Office ..... (540) 857-7236
Natural Science and Mathematics ..... (540) 857-7273
Student Activities ..... (540) 857-6328
Student Services (Dean's Office) ..... (540) 857-6348
Student Support Services ..... (540) 857-7286
Veterans' Affairs ..... (540) 857-7395
Workforce Development Services ..... (540) 857-6076
Writing Center ..... (540) 857-7250

Emergency ..... (540) 857-7979
Information/Registration ..... (540) 857-8922

Campus Maps

Location of Virginia Western Community College





VIRGINIA WESTERN
WE'LL TAKE YOU THERE

PARKING LOTS

1	Students
1E	Faculty, staff, and handicapped
2	Students
3	Students
4	Faculty, staff, students, handicapped
5	Visitors and handicapped
6	Assigned faculty and staff
7	Students, faculty, visitors, handicapped
8E	Faculty and staff only
9	Students
10	Faculty and staff only
11	Visitors, handicapped, and service
12	Faculty and staff only
14	Students

BUILDINGS

A	Anderson Hall
B	Brown Library
C	Chapman Hall
D	Duncan Hall
CR	Craig Hall
CS	College Services
F	Fishburn Hall
G	Thomas Center
GH	Greenhouse
H	Humanities
M	Business Science
N	Natural Science
PE	Physical Education
S	Student Center
W	Webber Hall
	Emergency Call Box

College Information

The College

Virginia Western Community College is a two-year public institution of higher education operating under a statewide system of community colleges. The College operates under the policies established by the State Board for Community Colleges and the Virginia Western Community College Local Board. It derives its charter from the General Assembly of Virginia through the Community College Act of 1966. The College is financed primarily by state funds; however, local governments and the educational foundation also provide support.

The service region of the College includes Roanoke, Salem, Roanoke County, Craig County, southern Botetourt County, and northern Franklin County. Day, evening, and weekend classes are provided on a 70-acre campus located in southwest Roanoke. Classes are also offered at off-campus locations in the area. The College was established in 1966 and has grown from an initial enrollment of 1,352 students to its current enrollment of over 13,000.

Vision Statement

As a student-oriented center for lifelong learning, Virginia Western Community College will meet the needs of our diverse community by providing comprehensive educational programs and workforce development.

Mission Statement

Virginia Western Community College provides affordable, accessible, and quality educational opportunities and workforce training to meet individual, community, and global needs.

Approved by the Virginia Western Community College Local Board on December 5, 2007

Core Values

Integrity

- Maintain the highest standards of honesty, fairness, and ethical conduct

Excellence

- Encourage our students, faculty, and staff to strive for academic, professional, and personal excellence
- Pursue continuous improvement and high quality in staffing, facilities, programs, and services

Service

- Foster a community that demonstrates care and support for students, faculty, staff, and the citizens of our service region
- Promote service to others

Community

- Respect and appreciate all cultures, learning styles, and ideas that reflect the community we serve
- Provide access to services and programs for all students who may benefit
- Promote a safe and secure environment that facilitates student learning

Institutional Goals

In striving to fulfill its mission in the most effective way possible, the College has established the following goals. Virginia Western Community College will... 1

Goal 1:

Promote effective teaching and learning through quality instruction, programs, and services designed to meet the needs of a diverse student body.

Goal 2:

Cultivate relationships and partnerships with the educational community, business, industry, and government to create educational and workforce development opportunities to support economic vitality.

Goal 3:

Practice sound stewardship of financial, physical, and technological resources to support high quality programs and services.

Goal 4:

Foster a safe and secure campus environment that is conducive to learning.

Approved by the Virginia Western Community College Local Board on May 21, 2009

Accreditation

Virginia Western Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award associate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call (404) 679-4500 for questions about the accreditation of Virginia Western Community College.

The College is a member of the Virginia Community College System and is approved by the State Board for Community Colleges. Virginia Western is also approved by the State Council of Higher Education for Virginia. Certain curricula of the College are accredited by specialized accrediting organizations. They include business programs accredited by the Association of Collegiate Business Schools and Programs, health professions programs approved or accredited by the Virginia State Board of Nursing, the Joint Review Committee on Education in Radiologic Technology, and the American Dental Association Commission on Dental Accreditation.

College Facilities

Virginia Western is divided by Colonial Avenue into North and South Campuses. The **South Campus** has eight buildings, four of which were acquired in 1966 from the Roanoke Technical Institute.

- **Chapman Hall** houses Admissions, Records, Advising & Retention Services, Cashier, Financial Aid and Veterans Affairs and the Student Services Division Office.
- **Craig Hall** contains the College Bookstore.
- **Duncan Hall** contains classrooms and faculty offices.
- **Webber Hall**, alongside Colonial Avenue, houses the laboratories for automated manufacturing, Cisco, construction engineering, drafting, electrical, electromechanical microcomputer systems, CAD, and engineering microcomputers; HVAC and Welding; classrooms for accounting, management, paralegal studies, and the engineering and technology programs; faculty offices for accounting, management, and engineering and technology faculty; and the School of Business, Engineering and Technology Office. The Office of Instructional Technology and Distance Learning is also housed in this building.
- The **Humanities Building** on the South Campus opened in November 1994. The 30,000 square-foot building houses studios, gallery, lecture, and computer graphics lab spaces for the Art Department, as well as a photography darkroom and laboratory space, general classrooms, and a gymnasium.
- The **Thomas Center for Advanced Studies** consolidates the four-year baccalaureate offerings on campus and houses the Radford University and Old Dominion University programs for upper-level studies.
- A 2,100 square foot greenhouse, along with a two-acre **Community Arboretum**, is also located on South Campus.
- The **Student Center** houses the Hall Associates Career and Employment Assistance Center, Student Support Services, Student Activities, and Student Government Association.

The **North Campus** has four buildings with a center courtyard referred to as the Courtyard of Four Seasons. The campus was dedicated on October 23, 1969, and its buildings were named after influential people in education or in the development of the southwestern Virginia region.

- **Fishburn Hall**, the administrative building, houses the offices of the President, the Vice President of Academic and Student Affairs, the Vice President of Financial and Administrative Services, Institutional Effectiveness, Workforce Development/ Lifelong Learning, Human Resources, Payroll Office, Public Relations and Marketing, Grants, and the Educational Foundation.
- Opposite Fishburn Hall is the Science and Mathematics building, **Anderson Hall**. Anderson Hall contains facilities for the Health Professions programs: Nursing, Dental Hygiene, Radiography, plus Science and Mathematics. Anderson Hall also houses laboratories for the natural sciences, classrooms, faculty offices, and the Reading Center. The Dental Hygiene Clinic, which is open to the public and offers services at no charge, is also located in Anderson Hall.
- Located beside Fishburn Hall is **Brown Library**. The Library houses the Learning Technology Center (which has an open computer lab), Math Center, and the Child Care Media Center.

- The **Business Science Building**, alongside Colonial Avenue, contains Information & Educational Technology Services, and Printing Services, plus classrooms, laboratories, and faculty offices for the Administrative Management Technology, Information Systems Technology, and Practical Nursing programs. The open computer laboratory is located in room M302, and the hours of operation are Monday through Thursday, 8:00 a.m. until 8:00 p.m.; Friday, 8:00 a.m. until 5:00 p.m.; and Saturday and Sunday from 1:00 p.m. until 4:00 p.m. Hours may vary during the summer semester. A Campus Commons area, drama and speech classroom, theater workshop, and the Whitman Auditorium are also located in this building on the ground level.
- The campus also has a bridge spanning Colonial Avenue that connects Webber Hall and the Business Science Building. This connection makes it possible to access both North and South Campuses without physically crossing Colonial Avenue.
- A covered walkway connects Webber Hall to Chapman Hall, Craig Hall, and Duncan Hall. An enclosed walkway connects Duncan Hall to the Humanities Building. These walkways allow convenient access to the buildings on South Campus.
- The College's six lighted tennis courts are located on North Campus.

Workforce Development Services/ Lifelong Learning

The Workforce Development Services/Lifelong Learning Division provides training, resources, skills information and assessment, and educational support services to the business community. Whether you have 5 or 5,000 employees, Virginia Western can customize training to suit your employment needs and training budget.

If your business or organization needs solution-focused training or employee development, our advisors can assist. We can come to you and your employees or train in our facilities located throughout the region.

Virginia Western's Workforce Development Services can provide state-of-the-art training and re-training resources, consultation and support services to your business. We customize classes to meet your schedule. Customized training can include computer training, customer service, supervisory skills, time management, and leadership skills.

Vision

The strategic vision of Workforce Development is to provide responsive and innovative approaches to the needs of our business community.

Mission

The mission of Workforce Development Services/ Lifelong Learning at Virginia Western Community College is to:

- Provide substantive educational and training services to the citizens and employers within the College's service area;
- Develop sustainable partnerships with business, governments and the citizenry of the Roanoke region in order to promote the economic vitality of the area; and
- Provide Work Keys® job assessments for schools, industry and the region.

Our mission can be accomplished through adherence to the following priorities:

- Efficient "just in time" training and educational delivery strategies;
- Business, industrial, and organizational personnel development partnerships;
- Commitment to the development of higher-level business and industrial training;
- Development of comprehensive curricula for nontraditional training and educational programs that incorporate technology and manufacturing standards;
- Promotion of continuous improvement of workforce development programs and services in an effort to increase participation of underemployed and underrepresented populations; and
- Advancement of certified education and training programs for workforce development professionals.

For additional information, contact:

Workforce Development Services/Lifelong Learning
Virginia Western Community College
Fishburn Hall - Main Campus
P. O. Box 14007
Roanoke, VA 24038-4007
Telephone: (540) 857-6076

Off-Campus Workforce Development Sites

Greenfield Education and Training Center
Greenfield Education and Training Center, located in Daleville, Virginia, is a 40,000 sq. ft. development facility dedicated to serving the training and education needs of regional employers, employees, and local citizenry. The building houses advanced training and technological resources designed to deliver the best in technological programming. Phone: (540) 966-3984.

Roanoke Higher Education Center
Roanoke Higher Education Center is located in downtown Roanoke, Virginia. The space is dedicated to serving workforce development needs through its advanced computer labs. Phone: (540) 857-6076.

The Franklin Center for Advanced Learning & Enterprise
The Franklin County Center connects job seekers and employers with workforce development services. Our partnership brings together service providers committed to serving the needs of residents, businesses, students, and the community. Phone: (540) 483-0179 ext. 2116.

Admissions

General Admission

Individuals are eligible for admission to Virginia Western if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit from study at the college. High school students and home-schooled students interested in admission to the college should refer to the subsequent sections addressing the enrollment of these populations.

Individuals age 16–17 who are not attending secondary school or a home school program may be eligible for admission with the approval of the school superintendent of the city or county of their residence. A High School/Home School Enrollment Approval form must be submitted by the applicant to determine admission to the college. Assessment testing will be required prior to enrollment in classes. Other conditions, as deemed appropriate by the college president or his designee, may also apply.

Others with special circumstances may attend with approval of the Virginia Western Community College Admissions Committee. For additional information, contact the Admissions Office at (540) 857-7231.

The college reserves the right to evaluate and document special cases and to refuse or revoke admission if the college determines that the applicant or student poses a threat, is a potential danger, is significantly disruptive to the college community, or if such refusal or revocation is considered to be in the best interest of the college. The colleges also reserve the right to refuse admission for applicants that have been expelled or suspended from, or determined to be a threat, potentially dangerous or significantly disruptive by, another college. Students whose admission is revoked after enrollment must be given due process.

Admission of High School Students

Dual enrollment courses are offered at many high schools in the Virginia Western Community College service area. These courses allow a student to be enrolled in, and receive credit for, college courses and high school courses simultaneously. The courses are taught at the college level by instructors who meet the academic requirements to teach a college course and are offered at the high school following the high school schedule. Enrollment in these courses is initiated through the student's high school and is approved by the college's Dual Enrollment Coordinator.

Virginia Western will also consider the admission of high school juniors and seniors enrolled in a public or private secondary educational program. The following admission and registration procedures have been developed to assist these students in meeting their educational goals:

1. Complete a Virginia Western Application for Admission and Application for Virginia Domicile for students requesting in-state tuition;
2. submit a completed High School/Home School Enrollment Approval form to the college Admissions Office;
3. complete an on-campus academic assessment prior to enrollment in classes;
4. see a college counselor prior to each subsequent registration for course approval.

According to Virginia Community College System policy, dual enrollment is restricted to high school juniors and seniors and home school students studying at the high school junior or senior levels. All students admitted under this section must demonstrate readiness for college, meet the applicable college placement requirements and address all other college admission criteria. Home school students must provide a copy of a home school agreement approved by the school district or a letter from the local school board or a copy of the letter filed by the parent/legal guardian declaring home school for religious exemption. Documentation of parental permission is required for all dual enrollment students. Because enrolling freshman and sophomore students is considered exceptional, the college-ready status of each prospective freshman and sophomore student will be treated on a case-by-case basis. Formal approval by the college president, or his designee, is required.

Enrollment of freshman and sophomore students will also require the approval of the appropriate academic dean. Assessment testing will be required prior to enrollment. Other conditions, as deemed appropriate by the president and/or dean, may also apply.

A *Request for Special Circumstance Admission Form* must be completed by the freshman and sophomore level applicant to determine admission to the college.

Federal regulations do not permit financial aid to be awarded to students who are simultaneously enrolled in public or private secondary educational programs. In addition, high school students are not eligible to enroll in a curriculum of study at the college until they have earned a high school diploma or GED, or are beyond the age of compulsory school attendance.

Admission of Home School Students

Virginia Western will consider the admission of junior and senior level students enrolled in a home school program. The following admission and registration procedures have been developed to assist home school students in meeting their educational goals:

1. Complete a Virginia Western Application for Admission and Application for Virginia Domicile for students requesting in-state tuition;
2. provide a copy of a home school agreement approved by the school district or a letter declaring home school for religions exemption. Documentation of parental permission is required;
3. complete an on-campus academic assessment prior to enrollment in classes;
4. see a college counselor prior to each subsequent registration for course approval.

According to Virginia Community College System policy, dual enrollment is restricted to high school juniors and seniors and home school students studying at the high school junior or senior levels. All students admitted under this section must demonstrate readiness for college, meet the applicable college placement requirements and address all other college admission criteria. Home school students must provide a copy of a home school agreement approved by the school district or a letter from the local school board or a copy of the letter filed by the parent/legal guardian declaring home school for religious exemption. Documentation of parental permission is required for all dual enrollment students. Because enrolling freshman and sophomore students is considered exceptional, the college ready status of each prospective freshman and sophomore student will be treated on a case-by-case basis. Formal approval by the college president, or his designee, is required.

Enrollment of freshman and sophomore level students will also require the approval of the appropriate academic dean. Assessment testing will be required prior to enrollment. Other conditions, as deemed appropriate by the president and/or dean, may also apply.

A *Request for Special Circumstance Admission Form* must be completed by the freshman and sophomore level applicant to determine admission to the college.

Federal regulations do not permit financial aid to be awarded to students who are simultaneously enrolled in public or private secondary educational programs or home school. In addition, home school students are not eligible to enroll in a curriculum of study at the college until they have earned a high school diploma or GED, or are beyond the age of compulsory school attendance.

Admission of Returning Students

Returning students who have not been enrolled in credit courses at the college during the past three years must reapply by resubmitting a Virginia Western Application for Admission prior to registration. Please direct all inquiries concerning applications to the Admissions Office.

Admission of Transfer Students

Transfer students must submit a Virginia Western Application for Admission and should have transcripts from all previous institutions attended sent to the Admissions Office. Usually a transfer student who is eligible to re-enroll at the last college of attendance will be eligible for admission to Virginia Western. Transfer students who are ineligible to return to a college previously attended will generally not be eligible to enroll at Virginia Western until at least one semester has elapsed. Special conditions for the admission of such students, including placement on probation, will be imposed as deemed appropriate by the college.

Students wishing to have their transcript evaluated for possible transfer credit must complete a Request for Transcript Evaluation form in the Admissions, Records, or Advising & Retention Services office. Generally, no credit will be given for courses with grades lower than a "C" when students transfer from other colleges. Transfer students may be advised to repeat courses if it is clearly to their advantage to do so in order to make satisfactory progress in their curriculum.

In determining transfer credit, course work applicable to the curriculum at Virginia Western will be accepted if the work completed at an institution is applicable to the student's program at the college, if the course/content/level of instruction is at least equal to the content/level at Virginia Western, and a comparable course is/has been taught within the Virginia

Community College System. Courses so credited are not calculated into the student's Virginia Western GPA computation.

Admission of International Students

In addition to the general admission requirements of the college, all international students must demonstrate proficiency in both written and spoken English. An I-20 may not be issued less than 60 days from the beginning of the next semester. Students must also present proof of health insurance before registering for classes.

Proficiency in written English is required. Written proficiency may be proven by a combined total score of 500 or greater on the TOEFL (Test of English as a Foreign Language) written test, a score of 173 or greater on the TOEFL computer-based test, a score of 61 or greater on the TOEFL Internet-based test, or a score of 400 or greater on the SAT verbal section. Testing agencies should report TOEFL or SAT scores using Virginia Western code 5868.

Current policies of the U.S. Department of Homeland Security state that international students must prove that financial responsibility will be met. All other immigration policies must also be satisfied.

Admission of Senior Citizens – Citizens 60 Years of Age or Older

Senior citizens are encouraged to take advantage of free tuition provided for by the Senior Citizens Higher Education Act of 1974. Senior citizens who are Virginia residents and who had a taxable individual income not exceeding $15,000 for Virginia income tax purposes for the year preceding enrollment may register for and enroll in courses for academic credit on a tuition-free basis. Senior citizens registering under the provisions of this Act must complete a Senior Citizen Tuition Assistance Agreement form prior to the class starting date. In addition, senior citizens registering under the provisions of this Act may register only after tuition-paying students are accommodated, except when the senior citizen has completed 75 percent of their degree requirements at Virginia Western. All senior citizens, regardless of income, may audit credit courses and take noncredit courses free of charge.

Senior citizens who wish to confirm space in a class can also register and pay as regular students. However, no refunds will be issued.

Additional information about enrollment for senior citizens may be obtained from the Admissions Office.

Admission of Students on the Sexual Offender Registry

Section 23 - 2.2:1 of the *Code of Virginia* requires that the VCCS send enrollment information to the Virginia State Police concerning applicants to institutions of higher education. This information is transmitted electronically and compared against the Virginia Criminal Information Network Crime Information Center Convicted Sexual Offender Registry. Language on the web application informs applicants that their information is being transmitted to the State Police.

In the event that the State Police determine that an applicant to Virginia Western Community College is listed on the Sex Offender Registry, the State Police will notify Virginia Western. When the college receives such a notification, the following procedures apply:

A. The applicant will be denied admission to Virginia Western in accordance with its admission policy as published in its catalog:

   The College reserves the right to evaluate special cases and to refuse admission to applicants when considered advisable in the best interest of the college.

B. If the applicant registers for classes and becomes a student before the college received notification from the State Police, the student will be immediately informed that he/ she is being dropped from classes and will receive a refund.

C. An applicant may invoke his/her right to an appeal process.

Appeal Process for Denial of Admission or Withdrawal for Convicted Sex Offender

When a convicted sex offender is denied admission to or is administratively dropped from classes at Virginia Western Community College, he/she may invoke the following appeal process:

A. The applicant or withdrawn student will receive a letter from the Dean of Student Services stating his/ her denial of admission or administrative drop from classes.

B. The applicant/withdrawn student may write a letter of appeal to the Dean of Student Services in which he/she provides the following information:

   1. Disclosure of the nature of the offense for which he/ she has been convicted;

2. Justification for consideration of admission/ reinstatement;
3. Statement acknowledging his/her understanding that his/her identity and status as a convicted sex offender will be publicized on the college campus in accordance with federal and state law if he/she is admitted or reinstated.

Note: If a student is appealing a denial of admission or an administrative drop, he/she must submit the letter of appeal to the Dean of Student Services within seven (7) calendar days of the administrative drop.

C. The Appeals Committee will review the information submitted and make a decision by a simple majority vote within fourteen (14) calendar days of receiving the letter of appeal. The Dean of Student Services will serve as the convener of the panel and will be a member of the panel.

D. The Dean of Student Services will inform the applicant/ dropped student by letter of the decision of the appeals panel. The decision of the appeals panel shall be final.

Admission of Students on Probation, Suspension, or Dismissal

Virginia Western will consider for admissions those applicants who were in poor academic standing at the college last attended.

Academic Probation

Applicants on academic probation may be admitted with academic restrictions.

Academic Suspension

Applicants on academic suspension are eligible after one semester has passed and may be admitted after meeting the following conditions:

1. Completion of the Petition for Admission/ Reinstatement;
2. Completion of appropriate academic assessment;
3. Upon recommendation of a Virginia Western counselor;
4. With approval from the Chair of the Admissions Committee.

All conditions must be satisfied prior to the begin date of the desired term of entry.

Exceptions to the waiting period of one semester may be made if one of the following conditions exist:

1. Noncurricular students wishing to take courses that are primarily job training in nature;
2. Students who feel they have mitigating circumstances should complete the Petition for Admission/Reinstatement and direct a letter to the Admissions Committee asking for acceptance. The letter must address the following:
   a. The course(s) desired;
   b. The goal or curriculum that will be pursued;
   c. A statement explaining the academic difficulty that led to suspension;
   d. An explanation of what has been done to enhance the student's chances for success.

Academic Dismissal

Applicants who have been academically dismissed may appeal to the Admissions Committee for admission if they feel mitigating circumstances warrant consideration. Academic dismissal normally is permanent unless, with good cause, students apply and are accepted under special consideration for admission by the Admissions Committee. Completion of appropriate academic assessment may be required. A Petition for Admission/ Reinstatement and formal written appeal should be directed to the Admissions Committee containing the following:

1. The course(s) the applicant wishes to take;
2. The curriculum the applicant wishes to enter and the applicant's educational goal;
3. A statement describing the academic difficulty that led to dismissal;
4. A strong case on behalf of the applicant as to why success is expected in the third or more attempt at college level education. These applicants may be requested to provide additional information on an individual basis.

All documents must be submitted two weeks prior to the begin date of the desired term of entry.

Note: In all cases, Virginia Western reserves the right to deny admission to anyone who the college determines is unable to benefit from attendance at the institution.

Classification of Students

All students are classified according to the following categories:

Curricular A student working toward completion of an associate degree, certificate, or career studies program.

Non-curricular (1) A student auditing course(s) for no credit; (2) a high school or home school students enrolled in a college course; or (3) a student not enrolled in an associate degree, diploma, or certificate program who may be taking a course(s) for credit.

Full-time A student is considered full-time if carrying 12 or more course credits. Note: A student wishing to complete a degree on schedule should take 15–17 credits per semester.

Part-time A student is considered part-time if carrying fewer than 12 course credits.

Freshman A student is classified as a freshman until 30 course credits are completed in a designated curriculum.

Sophomore A student is considered a sophomore after 30 or more course credits are completed. Transfer credits are included providing they meet requirements of the student's curriculum.

Application Procedure

All applicants must submit a Virginia Western Application for Admission.

Applicants may be required to complete an on-campus academic assessment prior to enrollment in certain classes or programs. The assessment is used to assist in placing students at the appropriate level of instruction.

Applicants who do not meet academic requirements for a specific course or curriculum may be required to complete a developmental course or program before acceptance to the desired curriculum.

Applicants who wish to enter a program of study (curriculum) should provide official transcripts from all high schools, colleges, and universities attended and are required to meet with a college counselor prior to admission to: (a) discuss educational interests, (b) determine needed academic assessments, (c) plan admission to a specific curriculum, and (d) examine other reasonable standards to ensure that applicants possess the potential to meet curriculum requirements.

Current year high school graduates are strongly encouraged to provide official copies of their high school transcripts.

Official transcripts are required in order to be considered for admission in the Dental Hygiene, Nursing, Practical Nursing, Radiation Oncology, or Radiography curricula.

Applicants seeking admission to these Health Technology programs must meet additional specific entrance requirements. Applicants interested in one of these programs should meet with the health technology information specialist and complete specific requests for entry into the curriculum.

Ability-to-Benefit Assessment

Virginia Western Community College reserves the right to deny admission to a student who does not demonstrate the ability to benefit from college-level credit courses. To demonstrate the ability to benefit, a student must score 40 or above in reading, 25 or above in basic arithmetic, and 25 or above in writing on the college's Compass placement test. Students who score below the cut-off in any of the three areas, regardless of a high school diploma, will be permitted to enroll in non-credit classes only.

Students not possessing a high school diploma or the recognized equivalent (General Equivalency Diploma or Home School Completion Certificate) must score 32 or above in writing, 62 or above in reading, and 25 or above in math on the college's Compass placement and satisfactorily complete six credit hours applicable towards a degree or certificate before receiving financial aid.

Alternative Forms of Credit

Advanced Standing and Previous Completion Credit

Students may be awarded college credit if they are enrolled in a curriculum of study at the college and can demonstrate previous educational study, training, or work experience that entitles them to credit for specific courses applicable to their program of study. Documentation for special training or experience must be provided and included in the student's file. The supporting documentation must include samples of work or projects completed, certificates, letters from employers, etc., to assist the division in credit determination. Students wishing to be awarded previous completion credit for a specific course should contact the appropriate division office in which the course is taught. The college reserves the right to place a time limit on prior learning experiences for which advanced standing may be granted. The college

also has a time limit for accepting credit for technical courses taken previously at Virginia Western or other institutions. The Admissions and Records Coordinator/ Registrar, in consultation with the appropriate faculty, will determine if courses taken or learning experiences completed more than five years ago can be used in your current program of study.

Credit-by-Examination

In disciplines where no CLEP or AP exam is accepted by Virginia Western, locally developed department "challenge" exams may be a means of earning college credit for prior learning by demonstrating satisfactory academic competency in a particular subject. In order to be eligible for credit-by-exam, the student must be admitted to Virginia Western as a curricular student, and the request must be made with at least two weeks prior notice of the requested exam date. Credit-by-exam is not available for all courses taught at Virginia Western. Each departmental exam may be taken only one time for a course, and the student must attain a "C" or higher to pass the examination. An exam may not be used to remove an "I" or "F" or to improve a grade already earned. In addition, a student may not challenge a lower level course in a subject which he or she has previously earned credit. Credits awarded by challenge examination may apply toward graduation requirements and will become part of the student's permanent record. However, the grade earned on the exam will not be calculated into the student's GPA. The grade earned on a department exam will be entered on the student's official transcript.

CLEP, Advanced Placement, and International Baccalaureate

In order to be awarded CLEP, AP, or IB credit at Virginia Western, the student must be enrolled in a curriculum of study. Specific information about CLEP, AP, IB and other external credit can be found on the Virginia Western home page or in the Records, Admissions, and Advising and Retention Services office at Virginia Western.

CLEP is a national program of credit-by-exam that offers students the opportunity to attain college credit for prior academic achievement. Virginia Western accepts most of the CLEP offered exams and uses the American Council on Education recommended minimum score of 50 for awarding CLEP credit. (Credit for foreign language, Level 2 credit requires a higher score.) An official copy of the CLEP transcript must be submitted to the Virginia Western Records Office directly from the CLEP organization in order to obtain credit.

Many area high schools offer Advanced Placement (AP) or International Baccalaureate (IB) programs to their students giving them the opportunity to complete college level work while attending high school. A minimum AP score of 3 is required for credit at Virginia Western. Students who have completed the IB Standard Level Certificate with a score of 4–7 may be granted advanced standing credit for a variety of courses. An official copy of the AP or IB transcript must be submitted to the Records Office in order to obtain credit.

Military Credit

A student's military training, courses, and occupational specialty may all be considered for college credit. As a participating member of Servicemembers Opportunity Colleges (SOC), Virginia Western follows the American Council on Education's (ACE) Guide to the Evaluation of Educational Experiences in the Armed Services in determining the value of learning acquired in military service when applicable to the service member's program of study. In order to receive credit for military training, the student must be enrolled in a curriculum of study, submit a military transcript, and initiate a request for evaluation to the Records Office. If a student submits only a copy of their DD214 and no military transcript, only credit for HLT 110 will be awarded. An honorable discharge must have been awarded to receive credit. Students who have completed basic training, regardless of the date of military experience, may receive up to three credits for health or physical education. The college also uses CLEP, DANTES, and Advanced Placement (AP) credit-by-examination for awarding credit to service members.

Student Permanent Record

The Records Office at Virginia Western maintains records on each student attending, or who has attended, the college. A record of the student's grades and courses taken will be permanently maintained in an electronic format. A student's file will be maintained during the student's enrollment in the college, but will be destroyed after the student has not been in attendance for at least three years. The student's file may contain the following:

1. High school transcripts;
2. Other college transcripts and evaluations;

3. Correspondence with student;

4. Grade change forms;

5. Course substitution and Advanced Standing forms.

The Records Office is in charge of student records. Administrators, counselors, and faculty who need to see student records to assist in the student's academic pursuits may have access to these records. College personnel involved in institutional research may be permitted access to records on a need-to-know basis. All others are required to have written permission from the student.

A student has the right to inspect and review their educational records within 45 days of submitting a written request to Virginia Western. The student must submit the request to the Records Office and identify the record(s) they wish to inspect. The Records Office will then make arrangements for access and notify the student of the time/place where the records may be inspected. The college is not required to supply copies of records unless there are specific reasons (i.e., great distance from the college) that prevent the student from reviewing the records.

A student may also ask the college to amend a record believed to be inaccurate or misleading. If the school decides to not amend the record, the eligible student has a right to a formal hearing. If, after the hearing, the school still chooses to not amend the record, the eligible student has the right to place a statement with the record commenting on the contested information.

Release of Directory Information

Directory information (name, address, e-mail address, telephone number, dates of attendance, major field of study, number of credit hours enrolled, grade level, degrees received, awards and honors, participation in clubs and activities, weight/height of members of athletic teams, most recent educational institution) may be released upon request at the discretion of the college. Although the college has deemed these items Directory Information, faculty and staff do not generally release a student's telephone number or address without the student's written authorization. A student may formally request that Virginia Western not release educational information on their behalf. This request must be submitted in writing to the Admissions and Records Coordinator/Registrar. When this request is made, every reasonable effort will be made to safeguard the confidentiality of such information. In addition, once this request has been made, the student will not be allowed to request an official or unofficial transcript via the Web in the college's student information system. Rather, the student will be required to submit written authorization, with proof of identity, to the Records Office prior to releasing a transcript. In addition, the college will not respond to calls from potential employers to verify enrollment for students who have made this request without the student's written authorization.

Note: The college reserves the right to publish the names of students who receive academic honors.

FERPA

The Family Educational Rights and Privacy Act (FERPA), also known as the Buckley Amendment, is a federal law that was enacted in 1974 to protect the privacy of students and their educational records. The intent of the legislation is to protect the rights of students and to ensure the privacy and accuracy of educational information. The Act provides for the right of eligible students and parents to:

- Inspect and review their educational records;
- Request an amendment to records that are believed to be inaccurate;
- Require the school to obtain written consent prior to disclosure of personally identifiable information, except those items noted herein;
- File a complaint with the U.S. Department of Education concerning alleged failures by the college to comply with FERPA.

"Educational Information" refers to any record maintained by an educational institution, including files, documents, and materials of any type which contain information directly related to students, and which allows a student to be identified.

What is not included in the Educational Information is:

- Sole possession records or private notes held by educational personnel which are not accessible or released to other personnel;
- Law enforcement or campus security records which are solely for the law enforcement purposes;
- Records related to individuals who are employed by the institution;

- Records related to treatment provided by a physician, psychiatrist, psychologist, or other recognized professional; • Records of an institution which contain only information about an individual obtained after that person is no longer a student at the institution (i.e., alumni records).

Students who are protected under FERPA are those students who are currently enrolled or formerly enrolled, regardless of their age or status in regard to parental dependency. Students who have applied but have not attended an institution, and deceased students do not come under FERPA guidelines.

Upon request, Virginia Western discloses education records without the student's consent to officials of another school in which a student seeks or intends to enroll, or where the student is already enrolled, so long as the disclosure is for purposes related to the student's enrollment or transfer.

Parents Rights Under FERPA

Parents lose their FERPA rights when their child turns 18 or starts attending or taking classes in college (or any post-secondary institution), whichever happens first.

Under 20 USC 1232g(d) all rights of parents (including the right to inspect educational records and to consent to the disclosure of personally identifiable information) transfers to the student at the earlier of: 1) the attainment of age 18, or 2) attendance at an "institution of postsecondary education."

However, as stated later in this document, parents of a financially dependent student (defined by the IRS) may obtain their child's records, but must submit proof of the student's dependency (via most recent tax form) prior to receiving the requested information.

As far as FERPA is concerned, a student's spouse is an "unrelated third party," and therefore, has no rights under FERPA. While there is an exception that allows a college to disclose educational information to parents of a financially dependent student in the absence of consent, there is no such exception for spouses, even if the spouse is supporting the student.

Frequently Asked Questions

What do I need to do to enroll for classes at Virginia Western?	New students should bring a completed application form to the Admissions Office located in Chapman Hall or apply online at www.virginiawestern.edu. Students who have not been enrolled for more than three years must reapply to the college. Most types of students can register themselves online or by telephone if they prefer. Instructions are printed in the Schedule of Classes.
When does registration begin... and end?	The registration period for regular session classes normally begins about four weeks before the start of each semester and continues throughout the first week of classes. Specific dates are published in the Schedule of Classes and can be obtained by calling Admissions at (540) 857-7231.
Can I register and pay my tuition without coming to campus?	Eligible students can register and pay tuition by telephone at(540) 857-7827 or online at https://vw.my.vccs.edu. Students may also mail a check to the college; checks must have the correct amount and should include the student's social security number. Cash should not be mailed.
How and when can I receive a tuition refund?	Students may drop a class by telephone at (540) 857-7827 or on-line at https://vw.my.vccs.edu. Students may also drop in person during the refund/drop period by submitting an add/drop form to the Admissions Office. The refund/drop deadline for regular session classes is published in the Schedule of Classes. The refund/drop deadline for all other session classes is available by calling (540) 857-7231. Students who wish to drop a class in person must do so during normal operating hours. For hours of operation, please call (540) 857-8922. Most refunds are processed after the last day to drop, and it normally takes 2-4 weeks for refunds to be processed through the state treasurer in Richmond. Refunds are mailed directly to the student. Students who withdraw from a class after the refund/drop period cannot receive a tuition refund (or a tuition credit) for the course.
What can I do if a class I need is closed?	Students are registered on a first-come, first-served basis. Some classes have firm size limits (e.g. science lab courses). Students can add their name to a waiting list, and in some instances another section may be opened to accommodate additional students. Also, after the deadline for early registration and delayed payment of tuition, seats sometimes open up.
Where can I get a catalog?	Catalogs are sold at the cashiers' office located in Chapman Hall and in the Bookstore located in Craig Hall. Catalogs can also be obtained by mail by phoning the Admissions Office. The cost is $3.00.
How can I get a transcripts sent?	A student may send a written request (a note with the student's name, address, telephone number, student ID, social security number, signature, and the address where it is to be mailed), or stop by the Records Office to obtain a form. They may also request a transcript online at https://vw.my.vccs.edu. There is no charge. The Records Office is located in Chapman Hall (C107).
Does the college provide employment assistance to students?	Yes. The college provides career counseling and employment assistance in the Career Services Office (Student Center 202).
Does the college provide assistance with housing?	Yes. The Student Activities Office provides a referral service for off-campus apartments and rooms for rent. The Student Activities Office is located in the Student Center, Room S211, on South Campus.

Expenses

Tuition

Current tuition information can be obtained from the Admissions Office and is printed in the Schedule of Classes.

Student tuition is paid on a credit-hour basis. The typical full-time academic load is between 15–17 credits. College approval is required to enroll for more than 18 credits per semester. (Exception: 18 credits plus one credit for orientation does not require approval.)

Payment of tuition enables the student to use the Bookstore and other facilities of the College.

The State Board approves all tuition and fees for community colleges and has the authority to change any and all tuition and fees without prior notice.

Student Responsibility to Avoid Tuition Obligation Related to Dropped Course

Students who enroll for courses after the official last date to pay for the term must pay their tuition at the time of enrollment. Failure to pay tuition does not guarantee that the student will be automatically dropped from the course. It is the student's responsibility to officially drop all unpaid courses prior to the beginning date of the course. Failure to do so may cause the student's record to be incorrectly flagged with an outstanding financial obligation. Outstanding financial obligations will prevent enrollment for future terms.

Tuition Refunds

Students shall be eligible for a refund for those credit hours officially dropped during the drop period for the session. The refund will be at the full credit rate for those credits dropped. After the drop period for the session has passed, there will be no refund.

Students may drop a class by telephone at (540) 857-7827 or online at https://vw.my.vccs.edu. Students may also drop in person during the refund/drop period by submitting an add/ drop form to the Admissions Office. The refund/drop deadline for regular session classes is published in the Schedule of Classes. The refund/drop deadline for all other session classes is available by calling (540) 857-8922. If the refund/drop deadline for a class falls on a non-business day and the student prefers to drop the class in person, the drop must be submitted to the Admissions Office during normal operating hours prior to the refund/drop deadline. For hours of operation, call (540) 857-8922. Most refunds are processed after the last day to drop, and it normally takes 2–4 weeks for refunds to be processed through the state treasurer in Richmond. Refunds are mailed directly to the student.

Eligibility for In-State Tuition

For purposes of in-state tuition, a Virginia resident is defined by state law as one who has lived in Virginia, with the intent to remain a Virginian, for a period of at least one year prior to the beginning of the first offical day of class within the semester or term of the program for the institution for which he/she is enrolling. The burden of proving eligibility for in-state tuition rates rests with the applicant. All applicants to the College who claim entitlement to Virginia in-state tuition rates must complete the domiciliary items included with the application form and provide whatever documentation may be deemed necessary.

The appeals process for applicants determined ineligible for in-state tuition rates is as follows:

1. A member of the admissions staff will make initial determination.
2. Intermediate review will be conducted, upon appeal, by the College Domicile Officer.
3. Final administrative review will be made by an appeals committee.

Students classified as out-of-state who can provide clear and convincing evidence that they were eligible for Virginia domicile on the first day of class for a term may have their status changed for the current term. Students should follow the domicile appeal policy noted above.

In the event that a student's circumstances change after a term has begun, the student's status may be eligible for reclassification. This reclassification shall be effective for the next academic term or the term following the date of the application for reclassification.

It is the responsibility of the student to submit a petition for reclassification in status to the college's Admissions Office. The college will not assume responsibility for initiating such an inquiry independently.

Books and Materials

Students are expected to obtain their own books, supplies, and consumable materials needed in their studies. It has been estimated that the cost of these items will average approximately $450.00 per semester for the full-time student. This cost can vary with the curriculum and is subject to change since it is based on publishers' and suppliers' listed prices.

The Bookstore sells textbooks, school supplies, art material, computer software, and general merchandise.

Rules for Bookstore Refunds

The Bookstore Managers are the only authorized persons who may accept books for refund. Books returned for refund are subject to inspection and must be in mint condition. If the books were purchased in shrink-wrap, the books must still be in the unopened original wrap with no markings or other damage. The books must be presented to the Bookstore Manager within the first two weeks of fall or spring semester to receive a refund. The return period for summer semester is the first week. Refunds or credits are made according to original payment. No refunds are issued without a receipt. All software sales are final.

Suspension of Student for Nonpayment

A student's continued attendance at the college is dependent upon proper settlement of all debts owed the institution. Should the student fail to satisfy all amounts due for tuition and fees, college loans, college fines, or other debts owed the college, the student may be suspended. If suspended, the student will not be allowed to register in any succeeding semester until all current debts owed to the college have been satisfied.

Students who damage or lose school property are expected to pay charges for such losses.

No transcripts, certificates, diplomas, or degrees will be issued, nor will students be permitted to complete registration, until accounts are satisfied with the Business Office, Bookstore, Library, and other college offices as appropriate.

Financial Aid

How and When to Apply

Various forms of financial aid from both public and private funds are available to students, including grants, scholarships, loans, and work-study. Any student or potential student who wishes to apply for financial aid must submit a completed Free Application for Federal Student Aid (FAFSA) to Federal Student Aid Programs.

Since most financial aid programs and grants have limited funding, except the Pell Grant, the date of application is a critical factor. An application may be submitted as early as January 1 (e.g., January 1, 2011, for the 2011–2012 academic year). Primary consideration is given to students whose applications are received and processed by the Priority Date published on the Financial Aid web site (http://virginiawestern.edu/finaid/ howtoapply.html). Please submit your financial aid application materials as early as possible!

Pell Grant support can be provided to eligible students throughout the academic year. However, tuition/book coverage at the beginning of a semester requires submission of a valid Student Aid Report, with supporting documentation, at least seven days prior to the first day of classes. To allow for processing time, a student should complete and submit the FAFSA itself at least six weeks in advance. A student who qualifies for Pell Grant support, but does not meet the above timetable for tuition/book coverage, will need to pay these charges out-of-pocket and the Pell Grant will be reimbursed in the amount which it has overpaid your account.

The FAFSA can be submitted directly over the Internet (www.fafsa.ed.gov). Most students currently utilize this option. Otherwise, a paper application can be obtained by calling 1-800-4-FED-AID.

Note: A new financial aid application must be submitted for each academic year of enrollment. Since institutional and other locally sponsored scholarship programs often include financial need as a consideration, in addition to academic performance, candidates for these scholarships should also submit a Free Application for Federal Student Aid.

Eligibility for Financial Aid

Federal and state-funded grant, loan, and work-study programs are available to assist with both direct expenses, such as tuition and books, and indirect expenses, such as transportation and room and board. The following eligibility criteria are required for these programs:

1. Documented financial need. Note: Financial records including state and federal income tax returns may be required;
2. Documented citizenship or permanent residence status;
3. No outstanding obligations on financial aid previously received at any educational institution or defaults on educational loans;
4. Enrollment in an eligible program of study;
5. High school diploma or its equivalent, or a demonstrated ability to benefit;
6. Registration with the Selective Service, if a male born on or after January 1, 1960 and at least 18 years old;
7. Compliance with certain stipulations pertaining to the possession and sale of illegal drugs.

Students must continue to satisfy the above criteria and maintain satisfactory academic progress to retain financial aid eligibility. A copy of the satisfactory academic progress standards can be received from the Financial Aid Office or online at the Virginia Western website (virginiawestern.edu). Type in the **Search** box, **Financial Aid**, and scroll down to – *Eligibility for Financial Aid.*

A student deemed ineligible for continuation of financial aid may request reinstatement in view of extenuating circumstances by submitting a written appeal to the Financial Aid Committee.

Types of Financial Aid

There are four basic types of financial aid: grants, scholarships, work-study, and loans. A grant consists of financial support for which neither work nor repayment is required. Scholarships are funds made

available to students who fit a particular profile. These funds are generally not expected to be repaid. Work-study involves actual employment, either on-campus or at an off-campus public or private nonprofit agency. Loans must be repaid, normally commencing six months after graduation. For some loans, interest begins to accumulate upon actual receipt of funds.

Financial Aid Programs

Federal Pell Grant

Pell grants are a federal aid program based on financial need. A recipient must be enrolled in an eligible program of study and cannot have previously received a baccalaureate degree. Awards are for both direct and indirect educational expenses. Because Pell Grants often provide a foundation for other forms of aid, students seeking any type of financial aid should apply for Pell. *You are automatically considered for the Pell Grant based on information submitted on the FAFSA.*

Who qualifies for a Pell Grant? Since numerous variables (income, household size, household members in college, type of tax form filed, assets, etc.) are taken into consideration, it is difficult to provide a brief answer to this question. However, to give some guidance, the following are examples of students who, during the 2010-2011 academic year, received at least small Pell Grant awards (approximately $445–$541 per semester as full-time students):

1. A single independent student with no dependents of her own, filer of a Form 1040, prior-year taxable income of $16,286, no prior-year untaxed income, and assets of $75.

2. A married independent student with no children, filer of a Form 1040A, prior-year taxable income of $5,062 (student) and $15,796 (husband), no prior-year untaxed income and no reportable student assets.

3. A dependent student from a household containing two parents and one other child, prior-year parental income of $47,442 (all taxable), reportable parental assets of $3,500, prior-year untaxed income of $231, and prior-year student income of $5,077.

4. A married independent student with three children, filer of a Form 1040, prior-year taxable income of $31,858 (husband) and $18,303 (student); and prior-year untaxed income of $4,884.

5. A dependent student from a household containing just student and mother, prior-year taxable incomes of $7,600 (father) and $19,291 (student), no prior-year untaxed Income and reportable parental assets of $200.

Who qualifies for a maximum Pell Grant? Again, it is difficult to provide a brief answer. However, to give some guidance, the following are examples of students who, during the 2010-11 academic year received maximum Pell Grant awards of $2,625 per semester as full-time students:

1. A dependent student from a household containing two parents and one other child, prior-year parental income of $15,000 (all taxable), reportable parental assets of $100, prior-year untaxed income of $10,934, prior-year student income of $7,880, no reportable student assets.

2. A married independent student with two children, filer of a Form 1040, prior-year taxable income of $3,121 student) and $24,433 (husband), no reportable student assets and prior-year untaxed income of $4,571.

3. A dependent student whose parents filed a Form 1040A and had an adjusted gross income of less than or equal to $20,000. In this case, the student's income was inconsequential.

4. A single independent student with no dependents of her own, filer of a Form 1040A, prior-year taxable income of$6,884, no prior-year untaxed income and reportable assets of $200.

5. A single independent student with no children, prior-year Social Security benefits of $2,136, no other prior-year income.

Federal Supplemental Educational Opportunity Grant (FSEOG)

A federal program designed to assist students with financial need, which exceeds that covered by other aid programs. Priority is given to Pell Grant recipients with greatest remaining need.

Academic Competitiveness Grant (ACG)

A federal program under which Pell Grant recipients can receive additional grant assistance. To qualify, a student must be a recent high school graduate who completed a rigorous high school program of study. A copy of the full criteria, including the required year of graduation, the definition of a rigorous high school program of study, and the required college grade point

average for a second-year student, can be obtained from the Office of Financial Aid.

College Scholarship Assistance Program Grant (CSAP)

A program administered by the State Council of Higher Education for Virginia, designed to assist students with exceptional financial need. To qualify for an award, a student must be a domiciliary resident of Virginia and must be enrolled on at least a half-time basis.

Commonwealth Award Program

A state program under which students with financial need can receive support up to the full amount of their tuition expense. To qualify, a student must be a domiciliary resident of Virginia and must be enrolled on at least a half-time basis.

Part-Time Tuition Assistance Program (PTAP)

A state aid program similar to the Commonwealth Award Program, but directed to students enrolled for 1–8 credits per semester.

Virginia Guaranteed Assistance Program (VGAP)

A state program under which first-time freshmen with financial need can receive tuition coverage plus a partial book allowance. To qualify, a student must be a dependent applicant, enrolled on a full-time basis, and demonstrate a high school grade point average of at least 2.50.

Virginia Military Survivors and Dependents Education Program

Provides educational assistance for a spouse of a qualifying military service member or a child between 16 years of age and no older than 29 years of age, and must have a parent who died or became permanently and totally disabled due to a war-related injury or who is listed as a prisoner of war or missing in action. Further information and application forms are available at http://www.dvs.virginia.gov/statebenefits.htm. Applications should be submitted at least four months before the expected date of enrollment.

Virginia Public Service Orphans Education Program

Provides tuition support for children of law enforcement officers, firefighters, and rescue squad members. Applicants must be at least 16 years of age and no older than 25 and must have a parent who was killed while serving in one of the above capacities.

Virginia National Guard Tuition Assistance Program

Provides partial reimbursement for tuition costs. Demonstration of financial need is not required. Members of the Virginia National Guard may be eligible. Applications are available from unit commanders.

Foster Care Tuition Grant Program

Provides tuition and fee support to students who were in foster care, in the custody of the Department of Social Services, or considered a special needs adoption at the time of high school graduation or completion of the GED. To qualify, a student must be a domiciliary resident of Virginia, must be enrolled full-time in an academic program of at least one academic year in length, and must not have been previously enrolled full-time in a postsecondary institution for more than five years. A student already receiving other grant funds sufficient to cover tuition and fees is not eligible.

Virginia Western Community College Academic Scholarship Program

Awarded each year to area high school seniors on the basis of academic achievement. Demonstration of financial need is not required. The scholarship funds are provided by the various governmental subdivisions of the college's service region. Awards are for tuition coverage for two semesters of full-time study and are received during the first year of enrollment. The application deadline is May 1.

Virginia Western Educational Foundation, Inc.

Community citizens, companies, and organizations generously provide the money to fund these scholarships. Annual awards are disbursed from over 55 separate scholarship programs. A complete listing of the scholarships, with their criteria, is available on line at www.virginiawestern.edu/foundation/scholarship, or in the Foundation Office located in Fishburn Hall. The applicant's academic major and past academic performance is strongly considered, with financial need sometimes also being an essential criterion. Visit www.virginiawestern.edu/foundation/scholarship for instructions on completing an application on-line. The following were the 2009-2010 scholarships:

Access Annual Scholarship
Alumni Association Annual Book Scholarship
American Sign Language Scholarship in memory of Laura Knight Schowe
Bank of Botetourt Art by the James Series Annual Scholarship
Mike Bassett Memorial Endowed Scholarship
Belmont Presbyterian Church Annual Scholarship
Dr. George K. Bowers Youth Haven Sanctuary Endowed Scholarship
Bridging the Gap Endowed Scholarship
Brown & Sons Farm Annual Scholarship
William Frank Burton Jr. Annual Scholarship
Orrin Clifton Annual Scholarship
Commonwealth Council Women's Leadership Scholarship
Continental Societies Endowed Scholarship
Dennis R. Cronk Endowed Scholarship
Rita Halsey David Radiography Endowed Scholarship
Hugh E. Davis Annual Nursing Scholarship
Down Syndrome Association of Roanoke Scholarship
Employee Annual Giving Scholarship
Employee Family Scholarship
Friendship Annual Scholarship
Katherine Futrell Memorial Endowed Scholarship
Lucian Y. and June B. Grove Honorary Endowed Scholarship
Hall Associates Annual Scholarship
HoneyTree Early Learning Center Endowed Scholarship
Gertrude Light Hubbard Annual Scholarship
Raymond and Melvin Hubbard Annual Scholarship
Dr. and Mrs. Abe Jacobson Annual Scholarship
Nicholas E. Janney Memorial Scholarship
Stanard and Betty Lanford Endowed Scholarship
Lewis-Gale Medical Center Endowed Scholarship
Edward G. Magruder Honorary Annual Scholarship
The John Mathis, MD & Krista Crawford-Mathis Endowed Scholarship
McFarland Endowed Scholarship
Gerry Montgomery Meador Endowed Scholarship
William Milton Meador Endowed Scholarship
Donna L. Mitchell Commonwealth Legacy Scholarship
James Mark Mitchell Memorial Art Endowed Scholarship
Sister Eveline Murray Annual Scholarship
New City Media Annual Scholarship for Communication Design
David L. Nickerson Honorary Endowed Scholarship
Nursing Endowed Scholarship
Odasz Annual Scholarship
Elizabeth Wright Painter Memorial Annual Scholarship
Mr. & Mrs. Emanuel Payne Endowed Scholarship
Barry L. Pendrey Memorial Scholarship
Al Pollard Memorial Scholarship for the Culinary Arts
Prestige Motorcycle Club Annual Scholarship
The Roanoke Tribune Annual Scholarship
Roanoke Electric Steel Corporation Endowed Scholarship
Maurice Strausbaugh Memorial Scholarship
Walter Darnall Vinyard Endowed Scholarship
Fred Whitaker Company Annual Scholarship
Beverly Day Williamson Jr. Endowed Scholarship
Alice Becker Hinchcliffe Williams Endowed Scholarship
John B. Williamson III Honorary Endowed Scholarship

The Foundation also administers a Community College Access Program currently for the City of Salem, City of Roanoke and beginning fall 2011 Franklin County. Students who are current graduates of high schools in these cities may have the opportunity to attend Virginia Western for two years tuition-free. The College Access Program is a need-based program that uses the financial aid process to identify student need. The program supports as many eligible students as possible based on financial need and funds available for the program. For more information about this program, please visit our website at www.virginiawestern.edu/ccap.

External Scholarship Programs

Numerous scholarships are available each year from external sponsors, based upon completion of their own application forms. Some of these forms can be obtained directly from the college's Financial Aid Office, including the following:

American Association of University Women
American Business Women's Association
Big Sun Scholarship for Athletes
Coca-Cola Scholarship
Dorothy J. Hall Scholarship (Virginia Credit Union)
Foundation of the National Student Nurses' Association, Inc.
Foundation for Roanoke Valley
Frank E. Page Scholarship
Health Focus of Southwest Virginia
Mary Marshall Nursing Scholarship Program
Mildred A. Mason Memorial Scholarship Foundation
National Association of Women in Construction P.E.O., Chapter AI
Roanoke Academy of Medicine Auxiliary Space Grant
Talbots Women's Scholarship Fund
Tylenol Scholarship
Virginia Business & Professional Women's Foundation
Virginia Child Care Provider Scholarship
Virginia League for Nursing, Inc.

Federal Stafford Loan Program

Permits eligible students to receive long-term, low-interest educational loans with no repayment or interest obligations while they are enrolled in college. The Department of Education provides loans to borrowers who are enrolled at least half time and demonstrate financial need.

Unsubsidized Stafford Loan Program

Similar to the Federal Stafford Loan Program, except that demonstration of financial need is not required. Meanwhile, the student must pay or capitalize interest while enrolled in school.

Parent Plus Loans

The Parent PLUS Program is designed to assist the parent or legal guardian of a dependent student whose educational expenses exceed other financial resources. Repayment normally begins within 60 days from the date of disbursement and can continue over a ten-year period.

Federal Work-Study Program

Provides federally funded part-time employment opportunities on and off campus for students to meet part of their educational expenses.

Veterans Affairs

The Veterans Affairs Office assists students in applying for VA benefits, in furthering the process of certifying eligibility, and in maintaining accurate enrollment and student status records. All veteran students receiving educational benefits must be enrolled in an official curriculum leading to a diploma, certificate, or degree. Veterans and eligible dependents of veterans should contact the Office of Veterans Affairs, Chapman Hall, Room C106, on the Virginia Western campus. The telephone number is (540) 857-7395. The Commonwealth of Virginia Department of Education for VA entitlements approves programs of education offered at Virginia Western Community College.

Financial Aid Frequently Asked Questions

How can I obtain financial aid?

If you wish to apply for financial aid, you must submit the Free Application for Federal Student Aid (FAFSA). Here are your options for applying: • The quickest way to apply is online using FAFSA on the Web at www.fafsa.ed.gov or • Go to www.FederalStudentAid.ed.gov and download a PDF version of the FAFSA or • Call 1-800-4-FED-AID (433-3243) and request a paper application. No additional Virginia Western financial aid form is needed for the fall and spring semesters. A supplemental form is required for the summer semester. This form will be mailed to all current financial aid recipients in early March. New students will be mailed this form when their financial aid file is complete. .

What types of financial aid are available?

There are four kinds of financial aid at Virginia Western: grants, scholarships, loans, and work-study. Our largest program is Pell. The average cost of tuition and books for a full-time student at Virginia Western is around $2,810 per semester, and the maximum Pell award is $2,526 per semester. Other types of aid often supplement Pell Grants.

When are Pell checks ready?

First, federal funds must be ordered once Student Aid Reports have been processed and the U.S. Department of Education provides authorization. Usually the initial disbursement is 6–8 weeks into the semester. Subsequent disbursements are made periodically throughout the term.

When can students obtain books?

Textbooks and supplies can be charged to the student's financial aid award. The student must be enrolled for at least 6 credits. Review your financial aid award letter for specific dates.

Must I repay my financial aid if I withdraw from school during the semester?

A student who withdraws from all classes during the first 60% of the semester very frequently has to repay a portion of the financial aid that he or she has received. The amount of repayment is influenced by the date on which the last course withdrawal took place. A similar calculation is performed in those cases where the student ceases attendance in all courses, whether or not he or she has actually submitted a formal notice of withdrawal.

What is the application deadline for financial aid?

Students should apply as early as possible to allow sufficient time for processing, generally 4–5 weeks. Additional time may be required if corrections and/or verification are necessary. Applications that have been processed by May 31 receive priority for state grants; these funds are limited). For some types of aid, such as Pell grants and Stafford loans, students can apply anytime during the year. However, they should be prepared to pay for tuition and books, and receive reimbursement, if their application cannot be processed within seven days prior to the start of classes.

What financial aid is available for part-time students?

With the exception of some scholarships, which are restricted to full-time students, students enrolled for at least six credits may qualify for most types of financial aid provided at Virginia Western. PTAP, a state grant program, is available for students taking 1–8 credits.

What is a Hope Credit?

This is a tax credit, up to a maximum of $1,500, which can be taken by eligible students for tuition paid during the freshman and sophomore years.

Student Services

Career Services

The Hall Associates Career and Employment Assistance Center, located in the Student Center, is a counseling, assessment, and resource facility offering career-related services to Virginia Western students and alumni. It features a resource library, computerized career exploration software, and computerized and online skills inventories and assessments, as well as information on job descriptions and duties, work environments, wages and salaries, essential skill requirements, and training and educational requirements related to the job market.

Students and alumni may use these resources to explore careers, decide on a major, look for employment to help with college expenses, look for degree-related employment, get help in writing a resume, and learn how to prepare for a job interview.

The center also maintains an online job bank that lists jobs targeted to Virginia Western students and graduates. Students, alumni, and employers may access this job bank through the Career Services page on Virginia Western's web site.

Advising Services

Potential students and newly enrolled students should contact the Advising and Retention Services Office, located in Chapman Hall, C105, for admission and registration information, assistance in making decisions in career choice, curriculum of study, and other academic or personal matters. Because student success is the highest priority of the College, a staff of counselors and advisors is available to assist students in determining and fulfilling their educational goals.

The Advising and Retention Services office offers assistance in a variety of formats, including classroom instruction, group counseling, and one-on-one individualized advising and counseling. Classes are taught on subjects such as college survival, study skills, career exploration, and personal development. Individual and group counseling is provided to students seeking assistance with educational, career, or personal problems.

Students desiring information and assistance with transferring may use the Advising and Retention Services office, their faculty advisor, or the transfer services information on the Virginia Western web site. Students may access college web sites and Transfer Guides for Virginia Public Colleges and Universities through this link. The advising staff is available to help answer student questions about the transfer process.

REACH/Student Support Services Program

The Student Support Services program at Virginia Western Community College is designed for students with academic potential who are in need of special services. The focus of Student Support Services is to help qualified students successfully complete college. Services available include tutoring, career counseling, personal counseling, assistance in obtaining financial aid, academic counseling, cultural activities, transfer assistance, and individualized assistance as needed.

Retention Services

Virginia Western's campus-wide retention initiative focused on retaining students and increasing student satisfaction and success. Retention activities are coordinated through the Advising and Retention Services and include the following components:

1. A referral system where faculty identify and use resources to assist students in successfully completing their classes;

2. A series of special topic success skills workshops; and

3. A program of intrusive advising for developmental and academic warning and academic probation students to help them achieve success.

For more information, contact Dr. Gloria Lindsay in the Advising and Retention Services office (C105) at (540) 857-7583.

Referral for Counseling

The Advising and Retention Services office provides information and referrals to community agencies, organizations, and health care facilities for treatment of a variety of health care concerns to include mental health issues and substance abuse. To the extent permissible by law, confidentiality is protected so that students who seek help for problems can receive counseling and referral for treatment without fear of reprisal. Questions regarding counseling should be directed to the Advising and Retention Services office (C105).

Services for Persons with Disabilities

Persons with a disability who are considering applying for admission on a full- or part-time basis should schedule an appointment with a Student Support Services counselor. The purpose of the meeting is to discuss program accessibility and individual needs. Applicants with disabilities planning to enroll are encouraged to advise a Student Support Services counselor, in advance of the beginning of classes, of their need for auxiliary aids, readers, tutors, interpreters, taped materials, or other services and devices. Students interested in applying for services should go to the Student Support Services office located in Student Center (102). The phone number is (540) 857-7286 and TTY number is (540) 857-6351. The ADA/Section 504 Coordinator is also located in the same office at the same telephone number, should anyone have concerns or need specific information.

Student Activities Program

The student activities program is based on the belief that a complete college experience involves not only the development of academic and/or vocational competencies, but also opportunities for students to develop their social and intellectual abilities through organized co-curricular activities. The Student Activities Office, located in the Student Center, coordinates social, cultural, educational, and recreational programs to enrich campus life. Music and dance performances, art exhibitions, lectures, plays, dances, and team sports are all part of the student activities program of the College.

Student Government Association (SGA)

The SGA serves as a vital link in communication among students, faculty, and administration. All students are members of the SGA and are entitled to participate in meetings and election of officers. As the purpose of the SGA is to further the interests of students and the College through student representation, SGA officers are members of other college committees and organizations that affect student life.

Campus Clubs and Organizations

Official recognition is given to scholastic, civic, athletic, professional, and religious clubs and organizations that have applied for and received College approval. Every club or organization must have a faculty sponsor. Students interested in information regarding new or established clubs and organizations should contact the Office of Student Activities at (540) 857-6326.

1. Procedures for forming an organization may be obtained from the Student Activities Office. Rules for the governance of all student clubs and organizations may also be obtained from the Student Activities Office.

2. A group shall become a recognized organization when approved by the Student Activities Coordinator and the Dean of Student Services.

Student Publications

The Student Activities Office oversees the production of the student newsletter, which serves as an important means of student expression and campus communication. The Student Handbook is published annually to provide students with information about policies and procedures of the College.

Off-Campus Housing

The Student Activities Office, working with a number of local realtors, provides a listing of available housing, roommates, and other pertinent information within the community. The office is located in room S211 in the Student Center. Call (540) 857-6326.

Student Health Services

Since Virginia Western is a commuter college, no health services are provided. Students are encouraged to attend to their own personal well being by following good health practices. Information on the Virginia Community College System Student Referral Insurance Providers may be found in the Student Activities Office. In the event of a medical emergency, first aid kits and trained personnel are available for assistance in most buildings on campus.

Identification Cards

Identification (ID) cards distributed to students, staff, and faculty may be obtained in the Student Activities Office, room 204. The ID card is intended for the sole and exclusive use of those to whom it is issued for the purpose of identification as a member of Virginia Western Community College.

ID cards are issued each semester and are valid for one academic year. Students who register and pay for three or more credits are eligible to receive a Virginia Western Student ID card. Other staff and faculty members are eligible upon proof of status with the college. The

first card is issued free of charge to all students, staff, and faculty. ID cards identify the individual by name and bear a photo and a semester validation sticker, in the case of students and part-time employees. Each semester, students and part-time employees must visit the ID Card Office to receive a current semester validation sticker. The sticker is placed on the current ID card and verifies current enrollment or employment. Without this sticker, the card is invalid. There is a replacement fee for any lost or stolen cards and a replacement fee for any lost stickers. The detailed ID card policy can be obtained from the Student Activities Office, room S211 of the Student Center.

Library

Educational programs undertaken at Virginia Western Community College are supported in Brown Library by a collection of books and study materials. In the selection of library materials, consideration is also given to the personal and professional interests and needs of students and faculty. Formal and informal instruction in the use of books and libraries is given during the student's college stay.

Library resources include approximately 80,000 books, and a collection of videocassettes, periodicals, and newspapers. Adjacent reading areas are carpeted and contain individual study carrels to reduce noise levels and create an atmosphere conducive to browsing, reading, and studying.

The Library's computers offer a rich array of online databases that provide fundamental research support in broad-based academic disciplines. Many of these databases include the full-text of newspaper and journal articles. One of these databases, Britannica Online, is the full text of this major encyclopedia. In addition, all of the library's computers have been set up to allow general Internet searching.

The Library's cataloging and circulation systems are automated through the use of a commercial system called ALEPH, the same system used at other Virginia community college libraries. The web version of the Library's ALEPH catalog is called VCCS Linc. VCCS Linc can be accessed to find out what books are in the Library's collection by visiting the Library's home page. The address is www.virginiawestern.edu/library.

A guide to the Library has been prepared by members of the library staff and is available at the Library Information Desk. Before beginning work on research assignment or term papers, students are advised to consult with a reference librarian.

It is the policy of Brown Library to charge fines for overdue books and audiovisual items. College policy does not permit the student to register, graduate, or receive a grade report until the student has either paid for the item or returned the item and paid the fine.

Learning Technology Center

The Learning Technology Center, located on the ground floor of Brown, is the college's testing center and a resource center for supplementary instructional assistance for students. Tutorial assistance, computer-assisted learning, and video-assisted learning are available to students. Tutoring is available in a writing center and a math center. Lab assistants and tutors consult with individual students to assess their need for instructional assistance. In addition, a microcomputer lab supporting a variety of microcomputer software is available for use by students. The Learning Technology Center gives placement tests for new students, and lab assistants administer and monitor tests and provide assistance with audiovisual equipment and materials for students in the Learning Technology Center.

Policies and Procedures for Student Conduct

The administration of each community college is authorized by the State Board for Community Colleges to impose appropriate penalties including expulsion from the college for student conduct which tends to discredit or injure the college.

The Virginia Community College System guarantees to students the privilege of exercising their rights of citizenship under the Constitution of the United States without fear of prejudice and takes special care to ensure due process and to spell out defined routes of appeal when students feel their rights have been violated.

Each individual is considered a responsible adult, and it is assumed that men and women of college age shall maintain standards of conduct appropriate to membership in the college community. Failure to meet standards of conduct acceptable to the college may result in disciplinary probation, suspension, dismissal, or other penalty depending upon the nature of the offense.

Procedures concerning student conduct, academic misconduct and student grievances can be found in the Student Handbook. Hardcopies are located in the Student Activities Office in the Student Center room 210. Copies are available on the web at http://www.

virginiawestern.edu/student life/ student activities/ student handbook.html.

Policies and Procedures Relating to Sexual Misconduct

Sexual misconduct is a violation of the values and behavioral expectations of the College and is not tolerated. All reported violations within the jurisdiction of the College, including sexual assault and harassment, will be investigated and, as warranted, will be resolved through appropriate College disciplinary processes and/or criminal proceedings in accordance with applicable state and federal laws.

Sexual Assault

Sexual assault consists of physical contact of a sexual nature without consent.

Sexual assault is defined as sexual intercourse without consent, including rape (whether by an acquaintance or a stranger), sodomy, or other forms of sexual penetration. To constitute lack of consent, the acts must be committed either by force, threat of force, intimidation, or through use of victim's mental helplessness of which the accused was aware or should have been aware. Mental helplessness includes incapacitation by alcohol or other drugs. Sexual assault also includes intentionally touching, either directly or through clothing, the victim's genitals, breasts, thighs, or buttocks without the victim's consent, as well as touching or fondling of the accused by the victim when the victim is forced to do so against his or her will.

Verbal misconduct, without the accompanying physical contact as described above, is not defined as sexual assault. Verbal misconduct may constitute sexual harassment, which is also prohibited under VCCS regulations and is specifically addressed elsewhere in Section 6.5.6 of the VCCS Policy Manual.

Sexual Harassment

Sexual harassment consists of unwelcome sexual advances, requests for sexual favors, or other verbal or physical conduct or written communication of a sexual nature, which is intimidating, hostile, or offensive. Sexual harassment shall be considered to have occurred when the following circumstances are presented:

1. Toleration of the conduct is an implicit or explicit term or condition of admission or status;
2. Submission to or rejection of such sexual conduct is used as a basis for academic evaluation affecting such individual;
3. Such conduct interferes with a student's academic performance, or creates an intimidating, hostile, or offensive learning environment.

Reporting Procedures

Students who believe that they have been subjected to sexual assault or harassment by another student should take their complaints to the Title IX Coordinator located in Chapman Hall, room 102, telephone number (540) 857-6348. Students' allegations involving college employees may be reported to the appropriate supervisor, the Human Resources Manager, Fishburn Hall, room 204, telephone number (540) 857-7282, or the Title IX Coordinator.

Existing disciplinary and grievance procedures or informal proceedings, as appropriate, shall serve as the framework for resolving allegations of sexual misconduct. Students found guilty of sexual misconduct will be subject to campus disciplinary penalties ranging from probation to expulsion, and, in addition, criminal prosecution in the event of violations of applicable laws. College employees found guilty of sexual misconduct will be subject to disciplinary action as specified by personnel policies.

The rights of both the accused and the complainant shall be protected, and the complainant's sexual history will be excluded in campus proceedings. The confidentiality of proceedings will be maintained to the fullest extent possible.

Policy on Substance Abuse

Substance abuse is a serious impediment to the efforts of the college to provide the best possible educational opportunity for students. Furthermore, alcohol and drug abuse interfere with clear thinking and performance and imperil personal health and public safety. Accordingly, the college is committed to a three part policy on substance abuse: education and prevention, enforcement, and referral for counseling.

Education and Prevention

Information on alcohol and drugs for the purpose of helping students develop a realistic understanding of the consequences of substance abuse and to make responsible decisions for their own welfare and the welfare of others is available from the Advising and Retention Services office and the Office of Student

Activities. In addition, various seminars, speakers, and other events are periodically sponsored by the college to promote awareness of substance abuse. Credit courses that develop students' understanding of this issue are offered through the Divisions of Social Science, Health Technology, and Student Services.

Enforcement

In accordance with policies adopted by the State Board for Community Colleges, students may not possess, use, or distribute any illegal substances while on campus; attending a college sponsored, off-campus event; or while serving as a representative of the college at off-campus meetings. This prohibition includes alcoholic beverages, except where permitted. Students who violate this policy will have college charges processed against them in the normal manner of due process provided by college disciplinary procedures. Violations of this policy that involve a criminal offense will result in notification to the appropriate local, state, or federal law enforcement authorities for appropriate action.

Referral for Counseling

The Advising and Retention Services office provides information and referrals to community agencies, organizations, and health care facilities for treatment of substance abuse. To the extent permissible by law, confidentiality is protected so that students who seek help for substance abuse problems can receive counseling and referral for treatment without fear of reprisal. Questions regarding counseling should be directed to the Advising and Retention Services office.

Weapons Policy

Weapons are not appropriate to the college experience. Weapons of any kind, functional or not, may not be brought, carried, or brandished on Virginia Western property. Specifically prohibited items include but are not limited to the following: explosive or incendiary devices, sheath knives, stilettos, switchblades, dirks, daggers, or pocket knives with blades over three and one-half inches in length, firearms of any description, BB or pellet guns, bow and arrows, crossbows, any device capable of propelling a projectile, and any other item or object deemed potentially harmful by the Virginia Western Police Department. When in doubt, contact the Virginia Western Police Department for clarification.

Parking on Campus

The use of any motor vehicle on the campus by any student is a privilege. Copies of the regulations governing parking on the campus are available in the Cashier's Office. Students should obtain copies each year to assure that they have current regulations.

A thorough understanding of the regulations is important. City of Roanoke traffic tickets will be issued for violation of College parking regulations. Repeated violations will result in disciplinary action, which may include removal of campus parking privileges. Where circumstances warrant, the College may have a vehicle removed at the owner's expense.

Student parking on campus is permitted only in the spaces marked in white; reserved spaces are marked in yellow.

During late afternoon and evening hours some faculty and reserved spaces are opened to students. When these spaces are used, diligent attention must be paid to the signs posted at the entrance to the lot. The college assumes no responsibility for the care or protection of any vehicle or contents at any time it is being operated or is parked on campus.

Handicapped parking is provided near each building. The college requires persons utilizing handicapped parking spaces to display an authorized permit from the State Division of Motor Vehicles (DMV).

Children on Campus

Virginia Western is not responsible for visiting children who are left unattended at the college. Accordingly, all parents and accompanying adults should be aware of the following policy:

Children who are not students at Virginia Western must be under the direct supervision of a parent, guardian, or sponsor (18 years of age or older). Unattended children are prohibited in all college buildings or on the grounds.

If a child is left unattended, the campus police will attempt to locate the parent, guardian, or sponsor of the child and, upon doing so, advise the adult of the college's policy relating to unattended children on campus. If the parent, guardian, or sponsor of the child cannot be located, campus police will escort the child to the Campus Police Office and, if deemed appropriate, notify the Roanoke Youth Bureau.

Children are permitted to accompany parents or guardians to classes only in emergency situations and only then with the permission of the instructor. To ensure their safety and security, children are not allowed in college laboratories or the Learning Technology Center under any circumstances.

Pets on Campus

No animals are allowed on campus with the exception of guide dogs for students with documented disabilities and animals scheduled for legitimate educational purposes in the Veterinary Technology program. These animals will be kept in the area provided for that purpose and are not to be taken to other parts of the campus or left in vehicles.

Voter Registration

If you wish to register to vote, you may do so by going to the Registrar's Office in the locality in which you live, or you can register by mail. Voter registration applications are available in the Library on the main floor. Mail the completed registration form to the locality in which you live.

If you have a disability and need assistance completing the form, please go to the REACH/Student Support Services Office in the Student Center and they will gladly assist you.

Computer Guidelines

Virginia Community College System

Information Technology Student/Patron Acceptable Use Agreement

As a user of the Virginia Community College System's information technology resources, I understand and agree to abide by the following ethics agreement terms. These terms govern my access to and use of the information technology applications, services, and resources of the VCCS and the information they generate.

The college granted access to me as a necessary privilege in order to perform authorized functions at the college where I am currently enrolled. I will not knowingly permit use of my entrusted access control mechanism for any purposes other than those required to perform authorized functions related to my status as a student. These include logon identification, password, workstation identification, user identification, file protection keys, or production read or write keys.

I will not disclose information concerning any access control mechanism unless properly authorized to do so by my enrolling college. I will not use any access mechanism that the VCCS has not expressly assigned to me.

I will treat all information maintained on the VCCS computer systems as strictly confidential and will not release information to any unauthorized person. I agree to abide by all applicable state, federal, VCCS, and college policies, procedures and standards that relate to the VCCS Information Security Standard and the VCCS Information Technology Acceptable Use Standard. I will follow all the security procedures of the VCCS computer systems and protect the data contained therein.

If I observe any incidents of noncompliance with the terms of this agreement, I am responsible for reporting them to the Information Security Officer and management of my college. I understand that the VCCS Information Security Office or appropriate designated college officials reserve the right without notice to limit or restrict any individual's access and to inspect, remove or otherwise alter any data, file, or system resource that may undermine the authorized use of any VCCS or college IT resources. I understand that it is my responsibility to read and abide by this agreement, even if I do not agree with it. If I have any questions about the VCCS Information Technology Acceptable Use Agreement, I understand that I need to contact the college Information Security Officer or appropriate college official. By acknowledging this agreement, I hereby certify that I understand the preceding terms and provisions and that I accept the responsibility of adhering to the same. I further acknowledge that should I violate this agreement, I will be subject to disciplinary action.

Official E-mail Communications with Students

VCCS has established e-mail as a primary vehicle for official communication with students. An official VCCS Gmail e-mail address has been established and assigned by the VCCS and the colleges for each registered student, and current faculty and staff member. All communications sent via e-mail will be sent to this address. Faculty members will use the official VCCS Gmail e-mail address to communicate with a student registered in their classes and administrative units will correspond with students via this address.

Information Technology Acceptable Use Standard

Thousands of users share VCCS information technology resources. Everyone must use these resources responsibly since misuse by even a few individuals has the potential to disrupt VCCS business or the works of others. Therefore you must exercise ethical behavior when using these resources.

State Law (Article 7.1 of Title 18.2 of the Code of Virginia) classifies damage to computer hardware or software (18.2-152.4) invasion of privacy (18.2-152.5), or theft of computer services (18.2-152.6)) of computer systems as (misdemeanor) crimes. Computer fraud (18.2-152.3) and use of a computer as an instrument of forgery (18.2-152.14) can be felonies. The VCCS's internal procedures for enforcement of its policy are independent of possible prosecution under the law.

Definition

VCCS information technology resources include mainframe computers, servers, desktop computers, notebook computers, handheld devices, networks, software, data files, facilities, and the related supplies.

Standard

The following standard shall govern the use of all VCCS information technology resources:

1. You must use only those computer resources that you have the authority to use. You must not provide false or misleading information to gain access to computing resources. The VCCS may regard these actions as criminal acts and may treat them accordingly. You must not use the VCCS IT resources to gain unauthorized access to computing resources of other institutions, organizations or individuals.

2. You must not authorize anyone to use your computer accounts for any reason. You are responsible for all use of your accounts. You must take all reasonable precautions, including password maintenance and file protection measures, to prevent use of your account by unauthorized persons. You must not, for example, share your password with anyone.

3. You must use your computer resources only for authorized purposes. Students or staff, for example, may not use their accounts for private consulting or to support a personal business venture. You must not use your computer resources for unlawful purposes, such as the installation of fraudulently or illegally obtained software. Use of external networks connected to the VCCS facility must comply with the policies of acceptable use promulgated by the organizations responsible for those networks.

4. Other than material known to be in the public domain, you must not access, alter, copy, move or remove information, proprietary software or other files (including programs, members or subroutine libraries, data and electronic mail) without prior authorization. The college or data trustee, security officer, appropriate college official or other responsible party may grant authorization to use electronically stored materials in accordance with policies, copyright laws and procedures. You must not copy, distribute, or disclose third party proprietary software without prior authorization from the licenser. You must not install proprietary software on systems not properly licensed for its use.

5. You must not use any computing facility irresponsibly or needlessly affect the work of others. This includes transmitting or making accessible offensive, annoying or harassing material. This includes intentionally, recklessly, or negligently damaging systems, intentionally damaging or violating the privacy of information not belonging to you. This includes the intentional misuse of resources or allowing misuse of resources by others. This includes loading software or data from untrustworthy sources, such as freeware, onto official systems without prior approval.

6. You should report any violation of these regulations by another individual and any information relating to a flaw or bypass of computing facility security to the Information Security Office or the Internal Audit department.

7. You must not use the Commonwealth's Internet access or electronic communication systems for personal use. It is strictly prohibited if it:

   a. interferes with the user's productivity or work performance, or with any other employee's productivity or work performance;

   b. adversely affects the efficient operation of the computer system;

   c. results in any personal gain or profit to the user;

   d. violates any provision of this policy, any supplemental policy adopted by the agency supplying the Internet or electronic communication systems, or any other policy, regulation, law or guideline as set forth by local, state or federal law. (See Code of Virginia §2.1-804-805; §2.2-2827 as of October 1, 2001.)

Note: Any user of VCCS IT resources employing the Commonwealth's Internet or electronic communication systems for personal use must present their communications in such a way as to be clear that the communication is personal and not a communication of the agency or the Commonwealth.

Enforcement Procedure

1. Faculty, staff, students and patrons at the college or System Office should immediately report violations of information security policies to the local Chief Information Officer (CIO) at (540) 857-6126.

2. If the accused is an employee, the CIO will collect the facts of the case and identify the offender. If, in

the opinion of the CIO, the alleged violation is of a serious nature, the CIO will notify the offender's supervisor. The supervisor, in conjunction with the College or System Human Resources Office and the CIO, will determine the appropriate disciplinary action. Disciplinary actions may include but are not limited to:

a. Temporary restriction of the violator's computing resource access for a fixed period of time, generally not more than six months.

b. Restitution for damages, materials consumed, machine time, etc. on an actual cost basis. Such restitution may include the costs associated with determining the case facts.

3. In the event that a student is the offender, the accuser should notify the Vice President of Instruction. The VP, in cooperation with the CIO, will determine the appropriate disciplinary actions that may include but are not limited to:

a. Temporary restriction of the violator's computing resource access for a fixed period of time, generally, not more than six months.

b. Restitution for damages, materials consumed, machine time, etc. on an actual cost basis. Such restitution may include the cost associated with determining the case facts.

c. Disciplinary action for student offenders shall be in accordance with the college student standards of conduct.

4. The College President will report any violations of state and federal law to the appropriate authorities.

5. All formal disciplinary actions taken under the policy are grievable and the accused may pursue findings through the appropriate grievance procedure.

Academic Regulations

Credits and Academic Load

The normal academic course load for students taking courses in the fall and spring semester is 15–17 credits. The minimum full-time load for the fall and spring semester is 12 credit hours and the maximum full-time load is 18 credits. Students wishing to carry an academic load of more than 18 credits in the fall or spring semester must obtain approval from the Admissions and Records Coordinator/Registrar in the Admissions Office.

Exception: 18 credits plus one credit for orientation does not require approval.

The normal academic course load for students in the summer semester is 8–10 credits. The minimum full-time load in the summer semester is 8 credits and the maximum load is 12 credits. Students wishing to carry an academic load of more than 12 credits in the summer semester must obtain approval from the Admissions and Records Coordinator/Registrar in the Admissions Office.

Exception: 12 credits plus one credit for orientation does not require approval.

Approval to take credit loads above the normal levels are generally approved under the following circumstances:

1. Students with a grade point average (GPA) of 3.0 or above may take 19–21 credits in the fall and spring semester and 13–16 credits in the summer semester;
2. Students may take in excess of 18 but never more than 21 credits in the fall and spring semester, and 13 but never more than 16 credits in the summer semester when recommended by a counselor if they have demonstrated the ability to handle this load and special circumstances exist;
3. Transient students may take up to 21 credits in the fall and spring semester and 16 credits in the summer semester when recommended by the host college or university.

Upon recommendation by an advisor/counselor, students may be required to take less than the minimum full-time academic load if:

1. Students are on academic warning or probation;
2. Student placement test scores are low and developmental courses are recommended;
3. High school graduates with a GPA of 2.0 or less.

Placement Testing

All incoming students must take the college placement tests in reading, writing, and mathematics. Students who have earned certain SAT or ACT scores within the past three years and/or who present evidence of satisfactory performance in postsecondary courses in English and math at another college or university may be exempt from placement testing.

Placement test results are used to help plan the best sequence of classes to ensure a student's success in college. Results of placement tests may indicate the need to enroll in one or more courses in preparation for college-level coursework. Should placement tests results indicate the need for preparatory work, students **must** enroll in the specified developmental English or mathematics courses. Under these circumstances, developmental courses are considered to be prerequisites for college-level, credit courses in English and math. The college reserves the right to withdraw students from classes when the appropriate prerequisite courses have not been completed.

Prerequisites

Some college courses require prerequisites or co-requisites. These are requirements that must be completed first to provide a foundation for understanding of course content and the potential to complete a course successfully. Prerequisites and co-requisites are identified in the Description of Courses section of the catalog. Students may not enroll in courses for which they do not meet the prerequisites at the time the course begins. The college reserves the right to administratively drop a student from any course for which they have not met the prerequisites.

DEVELOPMENTAL MATHEMATICS REDESIGN

During the spring semester of 2012, Virginia Western Community College will implement a redesigned developmental mathematics program. This change will impact many of the curriculum admissions requirements and the prerequisite statements listed in

this catalog. For updated information regarding these changes and their impact on your selected program of study, please visit: http://virginiawestern.edu/catalog/.

SDV – Orientation

All curricular students, except those in career studies certificate programs, shall participate in an SDV course designed primarily to foster student success. This course should be completed within the first 15 credit hours of enrollment at the community college, unless the student is not required to complete an SDV course because it is waived. The requirement may be waived for students who hold an Associate Degree or Bachelors Degree from a regionally accredited institution. Other requests for a waiver may be considered on a case-by-case basis. Students must still successfully complete the required number of credits for their degree. Each college is encouraged to offer a pre-enrollment orientation experience to enhance student success.

Grading System

The quality of performance in any academic course is reported by a letter grade, the assignment of which is the responsibility of the instructor. These grades denote the character of study and are assigned quality points as follows:

A Excellent 4 grade points per credit

B Good 3 grade points per credit

C Average 2 grade points per credit

D Poor 1 grade point per credit

F Failure 0 grade points per credit

I Incomplete: grade point credit. The "I" grade is to be used only for verifiable, unavoidable reasons that a student is unable to complete a course within the normal course time. To be eligible to receive an "I" grade, the student must (1) have satisfactorily completed more than 50% of the course requirements, and (2) must request the faculty member to assign the "I" grade and indicate why it is warranted. The faculty member has the discretion to decide whether the "I" grade will be awarded. Since the "incomplete" extends enrollment in the course, requirements for satisfactory completion shall be established through consultation between the faculty member and the student. In assigning the "I" grade, the faculty member will complete documentation that (1) states the reason for assigning the grade; (2) specify the work to be completed and indicate its percentage in relation to the total work of the course; (3) specify the date by which the work must be completed; and (4) identify the default grade based upon course work already completed. Completion dates may not be set beyond the subsequent semester (including the summer term) without the written approval of the chief academic officer of the campus, or his designee. An "I" grade will be changed to a "W" only under documented, mitigating circumstances which must be approved by the chief academic officer of the campus, or his designee. NOTE: If the work is not completed by the last day of class of the subsequent semester, the student will be awarded the "default" grade. The default grade will be final.

P Pass: Credit earned but not included in grade point average. Applies to non-developmental studies courses, noncredit courses, orientation, and specialized courses and seminars at the discretion of the college. Up to seven credit hours for which the "P" has been awarded may be applied toward completion of a program. A grade of "P" may be used as a grading option with the permission of the Academic Dean.

S Satisfactory: No grade point credit; used only for satisfactory completion of a developmental studies course (numbered 01–09).

R Re-enroll: No credit. The student is making progress but the course objectives have not been completed; to be used only for developmental studies courses (numbered 01–09). Re-enrollment for the completion of course objectives may be required.

U Unsatisfactory: No credit. The student has not made satisfactory progress. Applies only to developmental studies courses (numbered 01–09), noncredit courses, orientation, specialized courses, and seminars at the discretion of the college.

W Withdrawal: No credit. A grade of "W" is awarded to students who withdraw or are withdrawn from a course after the drop period but prior to the completion of 60 percent of the session. (Withdrawal deadlines are published in the General Catalog and each term in the Schedule of Classes.) Students who cease attendance prior to the withdrawal deadline for a class will be reported to the Admissions Office and withdrawn from the class. Students who are dropped or withdrawn by the instructor for non-attendance, non-participation will not be reinstated unless instructor error is determined. After the withdrawal deadline, students will receive a grade of "F" if they stop attending class, unless they request and are granted an administrative withdrawal because of mitigating

and appropriately documented circumstances. Such requests should be submitted to and approved by the Admissions and Records Coordinator/Registrar in the Admissions Office (via an Administrative Withdrawal form) during the term in which the discontinuance of attendance occurs. In addition, the instructor must sign the form indicating that the student had been making satisfactory progress in the course at the time of withdrawal.

X Audit: Students desiring to attend a course without taking the examination or receiving credit for the course may do so by registering to audit through the usual registration process and paying the normal tuition. Permission of the academic dean or another appropriate academic administrator is required to audit a course. Audited courses carry no credit and do not count as part of the student's course load. Students desiring to change status in a course from audit to credit or from credit to audit must do so within the add/drop period for the course. Students who desire to earn credit for a previously audited course must re-enroll in the course for credit and pay normal tuition to earn a grade other than "X". Advanced standing credit should not be awarded for a previously audited course.

Grade-Point Average

The grade-point average (GPA) is determined by dividing the total number of grade points earned (A=4, B=3, C=2, D=1, F=0) by the number of credits attempted. Grades of I, P, R, U, S, W, and X are not included in the calculation of GPA.

Grade Changes

Once a grade has been awarded, it is normally permanent. In situations where there are documented, mitigating circumstances or an uncontested error, grade changes must be requested within one year of the receipt of the grade in question. (Note: For a contested grade, the student must follow the time line and steps outlined in the "Final Grade Appeal Procedure" in the College's Student Handbook. The following guidelines do not apply to contested grade changes.)

In order to request a grade change for mitigating circumstances or uncontested error, the first point of contact for the student must always be the instructor. If the instructor agrees that a grade change is warranted, the change will be submitted to the Academic Dean and the Registrar for approval.

If the matter was not satisfactorily resolved with the instructor and the student wishes to pursue the grade change, the student must then contact the Academic Dean. The Academic Dean will attempt to mediate the grade change request with the faculty member and will notify the student of the decision. If the Academic Dean denies the student's grade change request, the student may then contact the Admissions and Records Coordinator/Registrar for a third appeal. At this point, the student must complete a "Request for a Grade Change – Uncontested Grade" which can be obtained in the college Admissions and Records Office. If the Registrar does not approve the grade change, the final option is for the student to appeal the grade change through the Vice President of Academic and Student Affairs. The decision of the Vice President of Academic and Student Affairs is final.

Repeating a Course

Students will be allowed to enroll for the third time in a course without having to obtain approval from the Academic Dean and the Dean of Student Services or the Admissions and Records Coordinator/Registrar when:

1. The course is a developmental course and the last grade is either a "W" or an "R."
2. The first two attempts in the course include one or more "W" grades.
3. The course is a non-developmental course and the last grade earned is a "D."

Except under the conditions cited above, a student will not be allowed to enroll in a course more than two times without the approval of the Academic Dean and the Dean of Student Services or the Admissions and Records Coordinator/Registrar.

"W" and "I" grades are included when counting the number of course attempts.

Should the student request to enroll in the same course more than twice, the need must be documented and approved by the Academic Dean and Dean of Student Services or the Admissions and Records Coordinator/ Registrar. Quarter credit courses are exempt from the course repeat policy.

Students should consult with a counselor or faculty advisor before repeating a course for credit. All grades earned for all courses taken one or more times are indicated on the student's permanent record card, but only the last grade earned is used in calculating

the student's cumulative grade point average and for satisfying curricular requirements. This policy applies only to courses taken since summer 1994, and also to courses taken since the conversion to the semester system (summer 1988) and repeated since fall 1996. For further information regarding this policy change and how it may affect students, contact the Records Office.

Student Responsibility to Avoid Tuition Obligation Related to Dropping a Course

Students who enroll for courses after the official last date to pay for the term must pay their tuition at the time of enrollment. Failure to pay tuition does not guarantee that the student will be automatically dropped from the course. It is the student's responsibility to officially drop all unpaid courses prior to the begin date of the course. Failure to do so may cause the student's record to be incorrectly flagged with an outstanding financial obligation. Outstanding financial obligations will prevent enrollment for future terms.

Grade Forgiveness — Academic Renewal Policy

A student who has been separated from the college (not enrolled) for a period of at least five years (minimum of 60 months), and who earns at least a 2.5 grade point average for the first twelve credits completed after re-enrollment, may petition for "Academic Renewal." Academic Renewal may be granted only one time. Once granted, it cannot be revoked. With the granting of Academic Renewal, all grades of "D" and "F" earned prior to re-enrollment will be excluded from the student's grade point average. Excluded grades will still be shown on the student's transcript, and the notation of "Academic Renewal" will be printed on the transcript. Academic Renewal petition forms may be obtained from the Records Office and must be approved by the Admissions and Records Coordinator/Registrar. Students should be aware that any grade that has been forgiven will not count toward graduation requirements.

Attendance

Registration in a course presupposes that students will attend scheduled classes and laboratory sessions. When absence from a class becomes necessary, it is the responsibility of the student to inform the instructor prior to the absence. Frequent unexplained absences may jeopardize the student's grade or may result in dismissal from a course.

The student is responsible for making up all work due to absence. If a student cannot take a test or final examination at the scheduled time, (s)he should contact the instructor prior to the test period. If (s) he is unable to reach the instructor, the division office should be contacted.

The policy on attendance and make-up examinations is generally the prerogative of each instructor. Instructors will provide students with a statement of their attendance policy during the first class meeting. When the number of unexcused absences reaches a sum equivalent to 30 percent of the total instructional time (e.g., five weeks in a 15-week course), the instructor will drop the student from class. (See explanation under "Grading System.") There is no refund of tuition or reinstatement in the course when an instructor has dropped a student for nonattendance.

No-Show Policy

Students must either attend their face-to-face courses or demonstrate participation in their distance learning courses by the last date to drop for a refund or they will be reported to the Admissions Office and withdrawn as no-show students. In this case, there will be no refund of tuition in the course, and the student will not be allowed to attend/participate in the class or submit assignments. Failure to attend or participate in a course will adversely impact a student's financial aid award.

Withdrawal Policy

Students who violate the attendance or participation guidelines for the course as of the withdrawal deadline will be reported to the Admissions Office and withdrawn with a grade of "W." Students who stop attending or participating in a course after the withdrawal deadline will receive a grade of "F." There will be no refund of tuition or reinstatement in the course. Financial aid recipients who receive all "W" or "F" grades in their courses will incur an outstanding tuition debt to the college and will be blocked from future enrollment.

Final Examinations

All students are expected to take final examinations at the regularly scheduled times. No exceptions are made without prior approval of the instructor and the Vice President of Academic and Student Affairs.

Grade Reports

Final grades can be accessed via MyVWCC at the Virginia Western web site (www.virginiawestern.edu) after the end of each semester. Final grades are a part of the student's record and are recorded on the student's permanent report. Students should report a conflict in grade to their instructor within six weeks of the end of the semester in which the grade was given.

Academic Honors

At the end of each semester, the Dean's List is prepared, recognizing all regular full-time students who earned a grade point average between 3.2 and 3.4. Regular full-time students who earned a grade point average of 3.5 or better are placed on the President's Honor Roll. The college is not responsible for newspaper publicity of these lists.

Students who earn an associate degree or certificate from Virginia Western are eligible for graduation honors. However, students who earn a Career Studies certificate are not eligible for graduation honors. Appropriate honors based on the overall academic achievement (cumulative grade point average) at Virginia Western Community College are as follows:

- 3.2 Cum laude (with honor)
- 3.5 Magna cum laude (with high honor)
- 3.8 Summa cum laude (with highest honor)

Honor Society

Phi Eta is Virginia Western's local chapter of Phi Theta Kappa, an international honor society that recognizes and encourages scholarship among two-year college students. It provides opportunity for the development of leadership and service, for an intellectual climate for exchange of ideas and ideals, for lively fellowship for scholars, and for stimulation of interest in continuing academic excellence. Invitations to join are extended to full- and part-time associate degree students who display academic excellence. Full-time degree students who have completed 12 credits must have a grade point average of 3.5 or better and part-time degree students must have earned 12 or more credit hours and have a 3.5 average or better. Invitations are usually extended in January.

Academic Standing

The college keeps students informed of their academic standing. A statement will be placed on their Grade Report if they are academically deficient and when they have regained good academic standing. Students are expected to maintain a 2.0 ("C") grade point average to be making normal academic progress toward graduation.

Academic Warning

Any student who fails to attain a minimum grade point average of 2.0 for any semester will receive an "Academic Warning."

Academic Probation

Students who fail to maintain a cumulative grade point average of 1.5 will be on academic probation until such time as their cumulative average is 1.5 or better. The statement "Academic Probation" will be placed on their permanent records. Generally, a student on probation is ineligible for appointive or elective office in student organizations unless the Dean of Student Services grants special permission. Students usually will be required to carry fewer credits than normal the following semester. Students on academic probation are required to consult with their probation counselors. Students shall be placed on probation only after they have attempted 12 semester credit hours.

Academic Suspension

Students on academic probation who fail to attain a subsequent term grade point average of 1.5 will be placed on suspension only after they have attempted 24 semester credit hours. Academic suspension normally will be for one semester unless the student reapplies and is accepted for readmission to another curriculum of the college. The statement "Academic Suspension" will be placed on the student's permanent record. Students who have been informed that they are on academic suspension may submit a Petition for Admission/Reinstatement and a written appeal for reconsideration of their cases to the Registrar or Dean of Student Services. Suspended students may be readmitted after termination of the suspension period and upon formal written appeal to the Registrar or Dean of Student Services. The Petition for Admission/ Reinstatement and written appeal must be submitted prior to the begin date of the desired term for reentry.

Academic Dismissal

Students who do not maintain at least a 2.0 grade point average for the semester of reinstatement to the college when on academic suspension will be academically dismissed. Students who have been placed on academic suspension and achieve a 2.0 grade point average for the semester of their

reinstatement must maintain at least a 1.5 grade point average in each subsequent semester of attendance. Students remain on probation/subject to dismissal until their cumulative grade point average is raised to a minimum of 1.5. Failure to attain a cumulative 1.5 grade point average in each subsequent semester until the cumulative GPA reaches 1.5 will result in academic dismissal. Academic dismissal normally is permanent unless, with good cause, students reapply and are accepted under special consideration for readmission by the Registrar or Dean of Student Services of the college. Students who have been dismissed may appeal to the Registrar or Dean of Student Services for readmission if they feel mitigating circumstances warrant consideration. A Petition for Admission/ Reinstatement and a formal written appeal should be directed to the Registrar or Dean of Student Services. The Petition for Admission/Reinstatement and written appeal must be submitted two weeks prior to the begin date of the desired term of reentry. The statement "Academic Dismissal" will be placed on the student's permanent record.

The college reserves the right to place students on academic probation or academic suspension where circumstances warrant.

Suspension for Lack of Progress

Two or more consecutive terms of withdrawal from all classes without successful completion of any credit courses or unsatisfactory grades in developmental classes may subject a student to academic probation and/or suspension.

Academic Advising

A counselor ordinarily does initial freshman advising; however, each student in a curriculum of study is assigned to a faculty advisor consistent with the student's program of study. The faculty advisor will assist the student in selecting proper courses, interpreting curriculum requirements, and assessing academic progress. Students are encouraged to confer with their advisors on a regular basis during office hours. Students may locate the name of their faculty advisor on the Virginia Western Web site (http://www.virginiawestern.edu/student life/get advising/find your faculty advisor.html).

COMPASS Testing Guidelines

Students are limited to three attempts in a calendar year to take the COMPASS placement test. Students currently enrolled in developmental courses must wait until the end of the semester in which they are enrolled before they can retake the placement test for that subject area.

Why community college students should complete their associate degree before transferring

Graduation...

Increases the probability of acceptance by a four-year college or university.	Many senior institutions give transfer admissions priority to students who have completed an AA or AS degree. Some institutions even guarantee admission to transfer graduates.
Reduces the possibility of having to take additional general education courses at the senior institution.	State senior institutions grant transfer graduates upper division (junior) class standing and accept the general education courses completed in the associate degree as a package, equivalent to the lower-division general education requirements at the senior institution. Students who transfer without graduating cannot be assured that they have satisfied all of the general education requirements of the senior institution.
Can improve the likelihood of success.	Assessment data provided by four-year institutions consistently show that most graduates have better success rates than non-graduates.
Increases opportunities for scholarships.	Graduation is an eligibility requirement for many scholarships.
Provides significant tuition savings.	The cost of tuition for a full-time student at Virginia Western is about $2,000. Tuition at a public four-year college in Virginia costs (on average) $5,000 per year. Tuition at private colleges is substantially higher.

Transfer Information

Transfer Degree Programs

The Associate of Arts (AA) and Associate of Science (AS) degree programs are specifically designed for students who want to transfer to a senior institution (four-year college or university). Programs are offered in Business Administration, Computer Science, Engineering, Fine Arts, General Studies, Health Sciences, Liberal Arts, Science, and Social Science. Academic counselors are available to help students choose the program that will best prepare them for the type of degree they eventually want to earn at the baccalaureate level. Most four-year colleges and universities in Virginia encourage community college transfer students to complete their degree before transferring. When reviewing admission applications from transfer students, some institutions give admissions priority to students who have completed their degree. Public four-year colleges in Virginia have agreed that the general education courses completed by AA and AS degree graduates will be accepted as the equivalent of the general education courses that are required of their freshmen and sophomores. (There may be some exceptions regarding foreign language requirements.)

Occupational/Technical Degree Programs

Although the Associate of Applied Science (AAS) occupational technical degree programs are designed for students who want to enter directly into the job market, some of these programs can also be used to prepare a student for transfer to a four-year college or university. Radford University, for example, offers Virginia Western students who have completed relevant AAS degree programs, bachelor degree programs in social work, nursing, and criminology on Virginia Western's campus. Old Dominion University offers bachelor degree programs on Virginia Western's campus for Virginia Western graduates who have completed relevant AAS degree programs in engineering technology, criminal justice, health sciences, occupational/technical studies, and nursing.

Transfer Courses

Senior colleges readily accept Virginia Western courses that are designed for transfer. All senior public institutions in Virginia have prepared transfer guides. These guides provide detailed listings of which courses will transfer from Virginia Western and other community colleges. The guides also identify the equivalent courses at the senior institution for which credit will be given. A senior college's transfer guide can be obtained by contacting the senior college's Admissions Office. Students may access college and university web sites through the Virginia Western Web site. They can also find transfer information for all Virginia colleges and universities at the following web site, which is administered by the State Council of Higher Education for Virginia: http://www.schev.edu/Students/xfr.asp.

Transfer Agreements Guaranteeing Admission

Virginia Western has the following articulation agreements with senior institutions. Please see a counselor for further information on any of these articulation agreements.

- Students may apply and be guaranteed junior level admission at Ferrum College, Virginia Commonwealth University, Virginia Intermont College and Virginia State University provided they complete an Associate of Arts or Associate of Science degree program at Virginia Western with a GPA of 2.0 or higher.
- Hollins University offers Virginia Western students guaranteed admission at the junior level provided they complete an Associate of Arts or Associate of Science degree program at Virginia Western with a GPA of 2.5 or higher.
- Mary Baldwin College offers Virginia Western students guaranteed admission at the junior level provided they complete an Associate of Arts, Associate of Science, or a transfer-oriented degree program with a curricular grade point average of 2.5 or higher.
- Old Dominion University offers Virginia Western students guaranteed admission at the junior level provided they complete an Associate of Arts or Associate of Science degree program at Virginia Western with a GPA of 2.5 or higher.
- Radford University guarantees admission into the following programs with certain stipulations (see Counseling): Criminal Justice degree program, General Studies degree program, Interdisciplinary

Studies degree program, Medical Technology degree program, Organizational Management, Social Work degree program, and College of Information Systems and Technology.

- Roanoke College offers Virginia Western students guaranteed admission at the junior level provided they complete an Associate of Arts or Associate of Science degree program at Virginia Western with a GPA of 2.2 or higher.

- Virginia Intermont College (VIC) offers Virginia Western students guaranteed admission at the junior level provided they complete an Associates in Arts or and Associates in Science Degree .

- Virginia Tech gives special consideration for admission to the College of Agriculture and Life Sciences to any student who graduates from Virginia Western with an AS degree (or completes at least 45 credit hours), who has a grade-point average of 3.0 or higher, and who has completed certain prescribed courses. Ideally, students seeking admission to Virginia Tech under this Guaranteed Transfer Program should complete and sign a letter of agreement with the university during their first semester at Virginia Western.

- Based on an articulation agreement with Virginia Tech, students who complete the Engineering AS degree with a cumulative GPA of 3.0 are guaranteed admission to the general engineering program at Virginia Tech.

Guaranteed Admissions Agreements

The Virginia Community College System (VCCS) offers guaranteed admissions agreements with the following institutions:

Virginia's Public Colleges and Universities

Christopher Newport University
College of William and Mary
Longwood University
Norfolk State University
Old Dominion University
Radford University
University of Mary Washington
University of Virginia
University of Virginia's College at Wise
Virginia Commonwealth University
Virginia State University
Virginia Tech
  College of Agriculture and Life Sciences
  College of Engineering

Virginia's Private Colleges and Universities

Emory & Henry College
Lynchburg College
Mary Baldwin College
Virginia Wesleyan College
Randolph College
Regent University
Sweet Briar College
Virginia Union University

Other Colleges and Universities

ECPI
University of Phoenix
Regis University
Strayer University

For more information, go to the following website: http://myfuture.vccs.edu/Students/Transfer/tabid/106/Default.aspx.

Programs of Study and Graduation Requirements

Degrees and Certificates

The college offers the following degrees, certificates, or career studies certificates for students who successfully complete approved programs at the college.

Degree Program

A planned program of study composed of a minimum of 60 semester hours at the 100 and 200 course levels which culminate in a degree.

Degree An award at the associate level that represents completion of the requirements of a degree program.

Major A collection of courses that are necessary to meet the requirements of the degree program under which the major is classified. Some majors provide specializations, which give students alternative ways of completing the major requirements for the degree. Only the name of the major is identified in the degree award.

Specialization A collection of courses that vary by 9–15 credit hours from the major requirements of the degree program under which the parent major is classified. Both the name of the major and the name of the specialization are identified in the degree award.

Associate of Arts degree (AA) is awarded to students majoring in the Liberal Arts. Students receiving an AA degree generally transfer to four-year colleges or universities.

Associate of Science degree (AS) is awarded to students majoring in such specialized curricula as business administration, engineering, science, and social sciences. Students receiving an AS degree generally transfer to four-year colleges or universities.

Associate of Applied Science degree (AAS) is awarded to students majoring in an occupational technical curriculum. Students receiving an AAS degree may elect to pursue immediate employment or transfer to selected four-year colleges or universities.

Certificate Program

A program of study of fewer than two years in length with a major in an occupational area with a minimum of 30 credit hours that may include courses numbered 10–299.

Career Studies Program

A program of study of less than one year in length in an occupational area (fewer than 30 credit hours) that may include courses numbered 10–299.

List of Programs

Associate of Arts (AA)

Liberal Arts major
- Fine Arts specialization

Associate of Science (AS)

Business Administration major
Engineering major
- Computer Science specialization

General Studies major
Science major
- Health Sciences specialization
- Integrated Environmental Studies specialization
- Mathematics specialization
- Medical Technology specialization

Social Sciences major
- Education specialization

Associate of Applied Science (AAS)

Accounting major
Administration of Justice major
Administrative Management Technology major
- Legal Administrative Management specialization
- Medical Administrative Management specialization

Architectural/Civil Engineering Technology major
- Geographic Information Systems specialization

Communication Design major
Culinary Arts major
Dental Hygiene major
Early Childhood Development major
Electrical Engineering Technology major
Horticulture Technology major
Human Services major
Information Systems Technology major
Management major
- Human Resource Management specialization
- Marketing specialization

Mechanical Engineering Technology major
Nursing major
Paralegal Studies major
Radiography major

Technical Studies major
  Mechatronics Technology specialization
Veterinary Technology major

Certificate Programs

Administrative Management Technology
  AMT: Administrative Professional
  AMT: Medical Transcriptionist
Exercise Science and Personal Training
General Education
Geographical Information Systems
Health Information Management
  HIM: Electronic Medical Records Management
Practical Nursing
Radiation Oncology
Surgical Technology

Career Studies Programs

Accounting
Administrative Management Technology
  AMT: Executive Assistant
Advanced Technology in Mechatronics
Advanced Technology in Mechatronics - Fundamentals
Air Conditioning and Refrigeration
Architectural/Civil Engineering Aide
Automotive Analysis and Repair
Business Industrial Supervision
Cisco™ CCNA Networking
Computer Aided Drafting Career Exploration
Culinary Arts
Culinary Arts: Baking and Pastry
Early Childhood Development
Electrical Wiring
Emergency Medical Services - Basic Technician
Energy Management Systems Introduction
Energy Management Systems Technician
Energy Management Systems Installer
Engineering
Firefighting and Prevention
Geographical Information Systems: Career Exploration
Health Information Management
  HIM: Health Records Coding
  HIM: Medical Office Specialist
Health Technology
  Pre-Dental Hygiene option
  Pre-Nursing option
  Pre-Radiography option
  Pre-Practical Nursing option
  Pre-Radiation Oncology option
  Pre-Surgical Technology option
  Pre-Veterinary Technology option
Horticulture
  Greenhouse Management
  Landscaping
  Viticulture
Information Technology
  IT: Database and Program Developer
  IT: Network and Database Administrator
  IT: Web Programmer
Interior Design
Maintenance Technology
Management
  Entrepreneurship Plus
  Human Resource Development
  Organizational Leadership
Microcomputer Systems Technology
Water and Wastewater Technology
Welding: Intensive Welding Training
Welding: Welding and Metal Processing
Wellness

Graduation Requirements

The college shall ensure that students who receive associate degrees or certificates shall have completed the established graduation requirements that follow:

Associate Degree

To be eligible for graduation with an associate degree from the college, students must have:

1. Fulfilled all of the course and credit hour requirements of the degree curriculum with at least twenty-five percent of the total semester hours acquired at Virginia Western;
2. Been certified by an appropriate college official for graduation;
3. Earned a grade point average of at least 2.0 in all studies attempted that are applicable toward graduation in their curriculum;
4. Filed an application for graduation in the Records Office;
5. Resolved all financial obligations to the college and returned all library and college materials.

Certificate and Career Studies

To be eligible for graduation with a certificate from the college, students must have:

1. Fulfilled all of the course and credit hour requirements of the curriculum as specified in the college catalog with 25% of the credits acquired at Virginia Western;

2. Been certified by an appropriate college official for graduation;
3. Earned a grade point average of 2.0 in all studies attempted that are applicable toward graduation in their curricula;
4. Filed an application for graduation in the Records Office;
5. Resolved all financial obligations to the college and returned all library and other college materials.

Requirement Term (Catalog Year) for Graduation

The Requirement Term (Catalog Year) used to determine graduation requirements is the one in effect at the time of the student's entry into the college, or any catalog thereafter, as long as the student has maintained continuous enrollment. In cases where students do not maintain continuous enrollment (i.e., non-enrolled for two or more consecutive semesters, excluding the summer semester), graduation requirements are determined by the catalog in effect at the time of their re-entry into the curriculum, or any catalog thereafter, as long as enrollment remains continuous. The catalog to be used in certifying graduation shall not have been in effect more than five years.

Multiple Degrees

Students may be eligible to graduate with multiple degrees and certificates if the content of the curricula differ from one another by at least 25 percent. Questions regarding the awarding of multiple degrees should be directed to the appropriate Academic Dean or to the Registrar.

Students are not eligible to earn more than one degree in the same curriculum. For example, students who earn degrees in a curriculum with a specialization (i.e., an A.S. in Social Sciences with a specialization in Education) will not be eligible to receive a second degree in the same curriculum (i.e., an A.S. in Social Sciences).

Students may not receive multiple degrees in the following curricula:

- AS: Business Administration and General Studies
- AS: Business Administration and Science
- AS: General Studies and Social Sciences
- AS: General Studies and Science
- AS/AA: General Studies and Liberal Arts
- AS/AA: Social Sciences and Liberal Arts
- AS: Social Sciences and Science
- AAS: Accounting and Management

Participation in Commencement

All graduating students are expected to participate in the annual commencement ceremony held at the end of the spring semester. Summer graduates may participate and be recognized in the spring semester commencement ceremony. Students who wish to be excused from commencement must submit a written request (as part of their graduation application) to the Admissions and Records Coordinator/Registrar stating the reason why they will be unable to attend.

Outcomes Assessment Requirement

Students may be required to take one or more tests designed to measure general education achievement and/or achievement in selected major areas prior to graduation for the purpose of evaluation of academic programs. No minimum score or level of achievement is required for graduation. Test results will remain confidential and will be used for the sole purpose of improvement of the college.

General Education Goals and Student Learning Outcomes

The importance of providing every graduate with a strong background in general education is reflected in both the structure and content of the associate degree programs at Virginia Western Community College. Programs typically devote twenty-five percent or more of the credits required for graduation to the study of general education courses, including at least one course from each of the following areas: Humanities/ Fine Arts, Social/Behavior Sciences, Natural Sciences/ Mathematics, and Health/Physical Education. These general education courses, together with specialized courses in the major field, orientation sessions, and extracurricular activities, are designed to provide each graduate with a collegiate experience that supports the development of the following general education goals:

1. **Communication:** A competent communicator can interact with others using all forms of communication, resulting in understanding and being understood. Degree graduates will demonstrate the ability to:

(a) understand and interpret complex materials;

(b) assimilate, organize, develop, and present an idea formally and informally;

(c) use standard English;

(d) use appropriate verbal and non-verbal responses in interpersonal relations and group discussions;

(e) use listening skills;

(f) recognize the role of culture in communication.

2. **Critical Thinking:** A competent critical thinker evaluates evidence carefully and applies reasoning to decide what to believe and how to act. Degree graduates will demonstrate the ability to:

(a) discriminate among degrees of credibility, accuracy, and reliability of inferences drawn from given data;

(b) recognize parallels, assumptions, or resuppositions in any given source of information;

(c) evaluate the strengths and relevance of arguments on a particular question or issue;

(d) weigh evidence and decide if generalizations or conclusions based on the given data are warranted;

(e) determine whether certain conclusions or consequences are supported by the information provided;

(f) use problem solving skills.

3. **Cultural and Social Understanding:** A culturally and socially competent person possesses an awareness, understanding, and appreciation of the interconnectedness of the social and cultural dimensions within and across local, regional, state, national, and global communities. Degree graduates will demonstrate the ability to:

(a) assess the impact that social institutions have on individuals and culture-past, present, and future;

(b) describe their own as well as others' personal ethical systems and values within social institutions;

(c) recognize the impact that arts and humanities have upon individuals and cultures;

(d) recognize the role of language in social and cultural contexts;

(e) recognize the interdependence of distinctive worldwide social, economic, geopolitical, and cultural systems.

4. **Information Literacy:** A person who is competent in information literacy recognizes when information is needed and has the ability to locate, evaluate, and use it effectively (adapted from the American Library Association definition). Degree graduates will demonstrate the ability to:

(a) determine the nature and extent of the information needed;

(b) access needed information effectively and efficiently;

(c) evaluate information and its sources critically and incorporate selected information into his or her knowledge base;

(d) use information effectively, individually or as a member of a group, to accomplish a specific purpose;

(e) understand many of the economic, legal, and social issues surrounding the use of information and access and use information ethically and legally.

5. **Personal Development:** An individual engaged in personal development strives for physical wellbeing and emotional maturity. Degree graduates will demonstrate the ability to:

(a) develop and/or refine personal wellness goals;

(b) develop and/or enhance the knowledge, skills, and understanding to make informed academic, social, personal, career, and interpersonal decisions.

6. **Quantitative Reasoning:** A person who is competent in quantitative reasoning possesses the skills and knowledge necessary to apply the use of logic, numbers, and mathematics to deal effectively with common problems and issues. A person who is quantitatively literate can use numerical, geometric, and measurement data and concepts, mathematical skills, and principles of mathematical reasoning to draw logical conclusions and to make well-reasoned decisions. Degree graduates will demonstrate the ability to:

(a) use logical and mathematical reasoning within the context of various disciplines;

(b) interpret and use mathematical formulas;

(c) interpret mathematical models such as graphs, tables and schematics and draw inferences from them;

(d) use graphical, symbolic, and numerical methods to analyze, organize, and interpret data;

(e) estimate and consider answers to mathematical problems in order to determine reasonableness;

(f) represent mathematical information numerically, symbolically, and visually, using graphs and charts.

7. **Scientific Reasoning:** A person who is competent in scientific reasoning adheres to a self-correcting system of inquiry (the scientific method) and relies on empirical evidence to describe, understand, predict, and control natural phenomena. Degree graduates will demonstrate the ability to:

(a) generate an empirically evidenced and logical argument;

(b) distinguish a scientific argument from a non-scientific argument;

(c) reason by deduction, induction and analogy;

(d) distinguish between causal and correlational relationships;

(e) recognize methods of inquiry that lead to scientific knowledge.

Computer Competency

Virginia Western Community College ensures that students are able to demonstrate college entry-level computer skills necessary for academic success and discipline-specific skills necessary for successful transfer or employment.

Program Competencies

The AS and AA degree programs are designed for students who plan to transfer to a four-year college or university baccalaureate degree. Upon completion of an AA or AS program, the graduate should have:

1. A broad, general education and the knowledge and skills required of all associate degree students at Virginia Western;
2. Computer literacy competencies required of all associate degree students at Virginia Western;
3. The educational knowledge and skills resulting from completing a core of major courses that will provide support for the student's transfer goals;
4. The course work needed to transfer as an upper-level student to a four-year college or university with little or no loss of credit;
5. The academic background and study skills needed to succeed after transferring to a baccalaureate degree program.

AAS degree programs are designed to prepare students for direct entry into the job market in technical and paraprofessional fields. A few of the programs also prepare students to transfer to selected baccalaureate degree programs. Upon completion of an AAS degree program, the graduate should have:

1. A broad, general education and the knowledge and skills required of all associate degree students at Virginia Western;
2. Computer literacy competencies required of all associate degree students at Virginia Western;
3. The educational background and occupational training necessary for immediate employment;
4. The skills and knowledge needed to perform satisfactorily on the job;
5. The course work necessary to transfer to and succeed in baccalaureate degree programs that accept transfer students from technical degree programs.

Certificate programs are designed to prepare students for direct entry into the job market as technicians, skilled, and semi-skilled workers. Upon completion of a certificate program, the graduate should have:

1. A background in general education;
2. The educational background and occupational training necessary for immediate employment;
3. The skills and knowledge needed to perform satisfactorily on the job.

Career Studies programs are designed to prepare students for direct entry into the job market in occupational fields that require entry-level skills and knowledge. Some of the programs also provide persons already employed with an opportunity to upgrade their skills and knowledge. Upon completion of a career studies program, the graduate should have:

1. Entry-level skills and knowledge needed for immediate employment in selected fields;
2. The skills and knowledge needed to perform satisfactorily on the job;

3. Up-to-date knowledge and skills in a designated occupational area.

Distance Learning

Distance learning courses are provided to accommodate the needs of students who cannot attend campus-based classes due to distance or time constraints. These courses fall into two broad groups: synchronous and asynchronous.

Synchronous Courses

Synchronous courses are provided to students at remote locations, such as another college or a VWCC off-campus center with a specially equipped electronic classroom. The instructor communicates with students through a live, two-way audio/ video link. These courses have regularly scheduled class meetings and are essentially the same as regular courses except for the fact that two or more sites are connected. They are called synchronous distance learning courses because teaching and learning takes place at the same time, even though the teacher and students are at different locations.

Asynchronous Courses

Asynchronous courses normally do not have class meetings. Courses designated as hybrid require campus class meetings for some of the instruction; the remainder of the course is asynchronous. Students receive a syllabus and instructional materials, such as prerecorded videotaped programs, that they use independently. They are called asynchronous distance learning courses because the students are learning at a time and place of their own choosing. These courses are designed for students with the need and ability for an independent learning environment instead of the traditional classroom setting. Distance education courses offer a flexible, convenient alternative to regular courses with equivalent requirements and standards. A qualified instructor is assigned to each course to guide, assist, and evaluate students. The amount and methods of interaction between students and the instructor vary.

Distance learning courses have the same content, grading system, and credit value as campus-based courses. The tuition is also the same for in-state students. Learning resources and support services are available to students in distance learning courses; moreover, special accommodations are available, such as access to library materials by phone or mail. While synchronous courses are often restricted to students in a special program at another institution, asynchronous courses are open to all qualified students. Registration information is provided in the Schedule of Classes each semester and is available from the Admissions Office.

Weekend College

Virginia Western's Weekend College is an innovative program designed to meet the educational needs of adult learners. Weekend college is intended for students whose other responsibilities prevent them from attending classes during the week, who want to accelerate their progress toward a degree, or who desire a more flexible schedule for completing their coursework. Through a combination of weekend courses and distance-learning classes, students enrolled in Weekend College can complete the requirements that lead to an AS degree in General Studies or Social Sciences. These curricula are specifically designed for students who want to transfer to a four-year college or university.

Each Weekend College class meets on alternating Saturdays, half the number of hours that day and evening classes normally meet. To maintain the academic quality of these courses, instructors supplement classroom instruction with additional materials that students study independently between class meetings. Because of the format for weekend courses, attendance at each of the eight class meetings is crucial for student success, as are class participation and the completion of assignments between classes. For further information about Weekend College, please call the School of Liberal Arts and Social Sciences at (540) 857-7271.

Honors Institute

The goal of the Honors Institute at Virginia Western Community College is to offer academic, cultural, and practical opportunities for academically talented students. The Honors Institute offers intellectually stimulating course work through Honors contracts and Honors classes. The organization places emphasis on student exploration of new ideas, in-depth discussion, and critical thinking. Cultural events, field trips, and participation in the Honors Organization provide opportunities for learning outside of the classroom,

while building long-lasting relationships with fellow honors students and faculty members.

The benefits of membership in the Honors Institute include: Honors designation on diploma and transcripts; small, seminar-style classes; special recognition at graduation for Honors Institute graduates; individualized academic and career advisement; early registration for classes; assistance with university transfers; strong academic and social relationships with other highly motivated students; use of the Honors Institute computer lab and private study room.

Students must apply for membership to the Honors Institute. A combination of factors determines admission:

For students new to Virginia Western; a 3.5 GPA, SAT 1650 (New SAT), top 10% of high school graduating class, and two letters of reference.

For students enrolled at Virginia Western; completion of 12 credit hours with a cumulative 3.2 GPA, and 2 on-campus references.

Direct interest or questions to:

The Honors Institute
Duncan Hall Room 215
Virginia Western Community College
P.O. Box 14007
Roanoke, Virginia 24038

540-857-6240
honorsinstitute@virginiawestern.edu

General Studies degree... distance learning

The Virginia Community College System and the State Council of Higher Education have approved Virginia Western's General Studies degree program as a transfer degree program.

Below is a list of the courses offered via distance learning and/or Weekend College to fulfill the requirements for the AS degree in General Studies and Social Science from Virginia Western. For complete information on degree requirements, refer to the General Studies degree section and the Social Science degree section of this catalog.

SDV 100 College Success Skills (or SDV 108) ..... 1 CR
ENG 111-112 College Composition I-II ..... 6 CR
ITE 115 Basic Computer Competency ..... 3 CR
HLT 110 Concepts of Personal & Community Health ..... 2 CR
BIO 101-102 General Biology I-II* ..... 8 CR
MTH 151 Mathematics for Liberal Arts I ..... 3 CR
MTH 157 Elementary Statistics (or elective) ..... 3 CR
ENG 241-242 Survey of American Literature I–II*** 6 CR
HIS 121-122 U.S. History I–II or
HIS 111-112 History of World Civilization I–II ..... 6 CR

* BIO 101-102 students must attend a few on-campus labs on Saturdays.
**ENG 243-244 may be substituted for ENG 241-242.

Humanities electives ..... 6 CR
ART 101-102 History and Appreciation of Art I-II
HUM 201-202 Survey of Western Culture I-II
MUS 121-122 Music Appreciation I-II
PHI 101 Introduction to Philosophy
REL 200 Survey of the Old Testament
REL 230 Religions of the World

Social Science electives (any three) ..... 6 CR
ECO 20-2012 Principles of Economics I-II
PLS 211-212 U.S. Government I-II
PSY 200 Principles of Psychology
PSY 215 Abnormal Psychology
SOC 200 Principles of Sociology

CST 100 Principles of Public Speaking ..... 3 CR

General transfer electives ..... 9 CR

Total credits for AS in General Studies ..... 62 CR

Social Sciences degree... distance learning

The Virginia Community College System and the State Council of Higher Education have approved Virginia Western's General Studies degree program as a transfer degree program.

Below is a list of the courses offered via distance learning and/or Weekend College to fulfill the requirements for the AS degree in Social Science from Virginia Western. For complete information on degree requirements, refer to the Social Science degree section of this catalog.

SDV 100 College Success Skills (or SDV 108) ..... 1 CR
ENG 111-112 College Composition I-II ..... 6 CR
ITE 115 Basic Computer Competency ..... 3 CR
HLT 110 Concepts of Personal & Community Health ..... 2 CR
BIO 101-102 General Biology I-II* ..... 8 CR
MTH 151 Mathematics for Liberal Arts I ..... 3 CR
MTH 157 Elementary Statistics (or elective) ..... 3 CR
ENG 241 Survey of American Literature I–II*** ..... 3 CR
HIS 121-122 U.S. History I–II or
HIS 111-112 History of World Civilization I–II ..... 6 CR

* BIO 101-102 students must attend a few on-campus labs on Saturdays.
**ENG 242, 243, 244 may be substituted for ENG 241.

ECO 201 Principles of Economics I ..... 3 CR
PSY 200 Principles of Psychology ..... 3 CR
SOC 200 Principles of Sociology ..... 3 CR
CST 100 Principles of Public Speaking ..... 3 CR

Humanities electives ..... 3 CR
ART 101-102 History and Appreciation of Art I-II
ENG 242 Survey of American Literature II
HUM 201-202 Survey of Western Culture I-II
MUS 121-122 Music Appreciation I-II

Social Science electives (any three) ..... 9 CR
ECO 202 Principles of Economics II
HIS 269 Civil War & Reconstruction (or other HIS electives)
PLS 211-212 U.S. Government I-II
PSY 215 Abnormal Psychology (or other PSY electives)

General transfer electives ..... 3 CR

Total credits for AS in General Studies ..... **62 CR**

Top Ten Reasons for Attending Virginia Western Community College

1 Teaching is a top priority	Faculty at comprehensive four-year colleges and universities often are heavily involved in research and graduate students teach many classes. However, at Virginia Western all full-time faculty are professional college teachers. Except for some who teach specialized technical courses, all Virginia Western faculty have a master's degree or doctorate in their teaching field. Adjunct (part-time) instructors are also fully qualified, and many adjunct faculty bring a wealth of practical experience to the classroom.
2 Personal attention and support	The college's commitment to teaching is also reflected in the average class size of approximately 20 students. At Virginia Western, there are no large classes taught in lecture halls. Students receive personal attention during and outside of class. Graduates consistently give faculty high marks for their attitude toward students and the quality of instruction.
3 Affordable	The average cost of attending a public liberal arts college or university in Virginia is $5,000 per year for tuition and fees, plus an additional $5,000 for room and board. (Tuition at private colleges averages about $15,000 per year.) By comparison, tuition and fees for a full-time student at Virginia Western averages just $2,000 per year. Thus, attending Virginia Western for the first two years of college can result in substantial savings.
4 Convenient location	Area residents do not have to leave their family and job to go to college. If they choose to, they can live at home and continue working while attending Virginia Western. The campus is easily accessible to residents throughout the Roanoke area.
5 Flexible class scheduling	Students in most programs of study at Virginia Western can attend evening or day classes, based on their personal preference, family responsibilities, and work schedule. Students can enroll on a full-time basis and earn an associate degree in two years, or attend part-time and advance at their own pace.
6 Excellent facilities	Classrooms and laboratories are well maintained and equipped with state-of-the-art technology. Satellite receivers and fiber optic cable link Virginia Western classrooms and computer labs to a network of resources both within and beyond the campus. The college's library has extensive holdings and is fully automated. Elevators, ramps, and other accommodations provide access to persons with physical disabilities. Abundant, well-lighted parking is provided, and campus security personnel are available around-the-clock for assistance.
7 Educational support for students	In order to help students establish and achieve their goals, a staff of full-time counselors provides personal assistance. Individual and group counseling is offered to students seeking help with educational, career, or personal needs. To provide a well-rounded college experience, the Student Activities Office sponsors a variety of student organizations, co-curricular programs and special events. In addition, the Knisely Learning Technology Center serves as a place for students to obtain individual attention for their academic needs. As a supplement to regular classroom instruction, the Learning Technology Center provides tutoring, computer-aided instruction, audio/visual programs, and other helpful resources. Special assistance for students with disabilities is also available.
8 Smooth transfer of credits	Because Virginia Western is fully accredited by the Southern Association of Colleges and Schools (SACS), credits earned in courses designed for transfer are readily accepted by other institutions. Statewide transfer agreements between the Virginia Community College System and four-year colleges and universities, plus individual arrangements with specific institutions, enable Virginia Western students to complete at least the first two years of study toward a bachelor's degree. Feedback from four-year institutions consistently indicates that Virginia Western graduates are well-prepared for transfer: typically over 90% are reported to be in good standing, having experienced little if any drop in their grade point average.
9 Our graduates get great jobs	A college education is becoming increasingly valuable to compete in the job market. Graduates of Virginia Western's occupational/technical programs have reported excellent employment success. The most recent alumni survey showed over 90% employed either full-time or part-time and nearly 70% working in a program-related field. Employment rates and starting salaries were especially high in health technology, business, and engineering technology fields.
10 Open to everyone. We're the community's college	All persons with the desire and ability to benefit from college are welcome at Virginia Western. Upon admission to the college, each academic program requires a minimum level of proficiency in English and mathematics; however, preparatory courses and academic support services are provided to students who lack the necessary foundation for success. At the other end of the continuum, an honors program is available for academically gifted students. Most classes consist of a broad range of students, reflecting the diverse population of the community.

Table 5-1A VCCS Degree Requirements

Area	Distribution
General Education General education is that portion of the collegiate experience that addresses the knowledge, skills, attitudes, and values characteristic of educated persons. It is unbounded by disciplines and honors the connections among bodies of knowledge. The associate degree programs within the VCCS support a collegiate experience that focuses on seven goal areas: communication; critical thinking; cultural and social understanding; information literacy; personal development; quantitative reasoning; scientific reasoning.) The general education goals areas outlined below are to be introduced in the foundational courses and enhanced in program and elective courses. (**Note:** Some of the categories include two goals areas when a single course may provide foundations in both goal areas.)	**Minimum 15 credits** **(Students must take at least one course in each of the five areas listed, to total at least 15 credits.)**
I. Foundations in Communication: Courses designed to enable students to interact with others using all forms of communication, resulting in understanding and being understood.	II. Foundations in Critical Thinking and Information Literacy: Courses designed to enable students to evaluate evidence carefully and apply reasoning to decide what to believe and how to act, and to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.
III. Foundations in Cultural and Social Understanding: Courses designed to enable students to have an awareness, understanding, and appreciation of the interconnectedness of the social and cultural dimensions within and across local, regional, state, national, and global communities. IV. Foundations in Personal Development: Courses designed to enable students to strive for physical well-being and emotional maturity.	IV. Foundations in Personal Development: Courses designed to enable students to strive for physical well-being and emotional maturity.
V. Foundations in Quantitative and Scientific Reasoning: Courses designed to enable students to possess the skills and knowledge necessary to apply the use of logic, numbers, and mathematics to deal effectively with common problems and issues, and to adhere to a self-correcting system of inquiry (the scientific method) and rely on empirical evidence to describe, understand, predict, and control natural phenomena.	
Program Requirements	
Major Field Core	Minimum 15 credits*
Related/Specialization Courses	Maximum 15 credits
Electives	0–15 credits
Totals	**AA/AS/AA&S:** 60–63 credits** **AAA/AAS: 65–69 credits*****

* Language in Section 5.1.0.0.1 of the VCCS Policy Manual states 25% of the courses in the degree program (15–18 credits) must be common across majors within a degree. The shared courses must be major or related/specialization courses.

** Credit range for engineering programs is 60–72 semester hour credits.

*** Credit range for AAA/AAS programs is 65–69, including nursing. For other programs in the Health Technologies, the range is 65–72 semester hour credits.

Table 5-1B Minimum Requirements for Associate Degrees in the VCCS

General Education	Minimum Number of Semester Hour Credits (1) AA	(2) AS	(3) AA&S	(4) AAA/AAS	
Communication[a]	6	6	6	3	
Humanities/Fine Arts	6	6	6	3	
Foreign Language (Intermediate Level)	6	0	0	0	
Social/Behavioral Sciences	9	9[b]	9	3[c]	
Natural Sciences/	7	7	7	0	}3[c]
Mathematics	6	6[d]	6[d]	0	
Personal Development [e]	2	2	2	2	
Other Requirements for Associate Degree: Major field courses and electives (columns 1–3) Career/technical courses (column 4)	18-21	24-27	24-27	49-53[f]	
Total for Degree[g]=	**60-63**	**60-63[h]**	**60-63[h]**	**65-69[h]**	

Notes:

The VCCS Policy Manual, Section 2-IV-C, defines general education within the VCCS. Sections 2.7.3, 3.4.10, and 3.5.1 of the Southern Association of Colleges and Schools (SACS) Principles of Accreditation specify general education requirements. Colleges must address all SACS requirements, the SCHEV Core Competencies, and the general education goal areas listed in this VCCS Policy Manual.

a) Must include at least one course in English composition.

b) Only 6 semester hours of social/behavioral sciences are required for engineering majors who plan to transfer to a baccalaureate degree engineering program that requires 6 or fewer hours in this category, provided that the college/university publishes such requirements in its transfer guide.

c) While general education courses other than those designed for transfer may be used to meet portions of these requirements, SACS principles require that general education courses be general in nature and must not "...narrowly focus on those skills, techniques, and procedures peculiar to a particular occupation or profession."

d) Only 3 semester hours of mathematics are required for the General Studies major.

e) Personal development includes health, physical education, or recreation courses that promote physical and emotional well being and student development courses. Must include at least one student development course.

f) AAA/AAS degrees must contain a minimum of 15 semester hours of general education. Students should plan to take at least 30 hours in the major; the remaining hours will be appropriate to the major.

g) All college-level course prerequisites must be included in the total credits required for each program.

h) Credit range for engineering programs is 60–72 semester hour credits. Credit range for AAA/AAS programs is 65–69, including nursing. For other programs in the Health Technologies, the range if 65–72 semester hour credit.

Approved List of Transfer Courses - AA and AS Degrees

The purpose of this list of courses is to assist students in scheduling classes leading to an Associate of Arts (AA) or Associate of Science (AS) degree. All electives are to be taken from the courses listed below. Divisional approval is required for any deviation from this list. Students should check the semester Schedule of Classes to ensure that prerequisites have been met before registering for any course. Electives should be selected carefully in conjunction with a faculty advisor or counselor after examining the curricular requirements shown in the transfer institutions transfer guide and College Catalog.

TRANSFER COURSES

Business Courses

ACC 211-212	Principles of Accounting I-II
BUS 221-222	Business Statistics I-II
ITE 115	Intro Computer Apps and Concepts

Computer Science Course

CSC 201-202	Computer Science I-II

General Elective Courses

CST 100	Principles of Public Speaking
ENG 111-112	College Composition I-II
ENG 210	Advanced Composition
FRE 101-102	Beginning French I-II
SPA 101-102	Beginning Spanish I-II

Health and Physical Education Courses

HLT 110	Concepts of Personal & Comm Health
HLT 230	Principles of Nutrition & Human Dev
PED courses	Physical Education and Recreation

Humanities/Fine Arts courses

*ART 101-102	History and Appreciation of Art I-II
ART 121-122	Drawing I-II
ART 131-132	Fundamentals of Design I-II
ART 241-242	Painting I-II
ART 243-244	Watercolor I-II
CST 130	Introduction to the Theatre
*ENG 241-242	Survey of American Literature I-II
*ENG 243-244	Survey of English Literature I-II
*ENG 251-252	Survey of World Literature I-II
FRE 201-202	Intermediate French I-II
*HUM 201-202	Survey of Western Culture I-II
*MUS 121-122	Music Appreciation I-II
*PHI 101-102	Introduction to Philosophy I-II
PHT 101	Photography I
REL 200	Survey of the Old Testament
REL 210	Survey of the New Testament
REL 230	Religions of the World
*REL 231-232	Religions of the World I-II
REL 247	History of Christianity
SPA 201-202	Intermediate Spanish I-II

Mathematics Courses

MTH 151-152	Mathematics for the Liberal Arts I-II
MTH 157	Elementary Statistics
MTH 163	Pre-Calculus I
MTH 166	Pre-Calculus with Trigonometry
MTH 175-176	Calculus of One Variable I-II
MTH 177	Introduction to Linear Algebra
MTH 178	Topics in Analytic Geometry
MTH 241-242	Statistics I-II
MTH 271-272	Applied Calculus I-II
MTH 277	Vector Calculus
MTH 285	Linear Algebra
MTH 287	Mathematical Structures
MTH 291	Differential Equations

Science Courses

BIO 101-102	General Biology I-II
BIO 141-142	Human Anatomy and Physiology I-II
BIO 215	Plant Life of Virginia
BIO 227	Animal Life of Virginia
BIO 270	General Ecology
BIO 271	Introduction to Ecological Systems
BIO 277	Regional Flora
BIO 285	Biological Problems in Contemporary Society
CHM 111-112	College Chemistry I-II
CHM 241-242	Organic Chemistry I-II
CHM 245-246	Organic Chemistry Lab I-II
ENV 161	Intro to Environmental Compliance
ENV 162	Environmental Prin. in Public Health
ENV 221	Natural Resource Management
*GOL 105	Physical Geology
*GOL 106	Historical Geology
*NAS 131-132	Astronomy I-II
NAS 185	Microbiology
PHY 201-202	General College Physics I-II
PHY 241-242	University Physics I-II

Social Science Courses

ECO 201	Principles of Macroeconomics
ECO 202	Principles of Microeconomics
GEO 200	Introduction to Physical Geography
GEO 210	People & the Land: Intro to Cult Geo
GEO 220	World Regional Geography
*HIS 101-102	History of Western Civilization I-II
*HIS 111-112	History of World Civilization I-II
*HIS 121-122	United States History I-II
HIS 205	Local History
HIS 267	The Second World War
*PLS 211-212	United States Government I-II
*PLS 241-242	International Relations I-II
**PSY 200	Principles of Psychology
PSY 215	Abnormal Psychology
PSY 230	Developmental Psychology
PSY 235	Child Psychology
PSY 236	Adolescent Psychology
***SOC 200	Principles of Sociology
SOC 211-212	Principles of Anthropology I-II
SOC 215	Sociology of the Family
SOC 266	Minority Group Relations

* *Either course in this two-semester sequence may be taken first*

** *Students who have received credit for PSY 201 or 202 must contact an advisor before enrolling in PSY 200*

*** *Students who have received credit for SOC 201 or 202 must contact an advisor before enrolling in SOC 200.*

Alphabetical Listing of Programs

DEVELOPMENTAL MATHEMATICS REDESIGN

During the spring semester of 2012, Virginia Western Community College will implement a redesigned developmental mathematics program. This change will impact many of the curriculum admissions requirements and the prerequisite statements listed in this catalog. For updated information regarding these changes and their impact on your selected program of study, please visit: http://virginiawestern.edu/catalog/.

ASSOCIATE OF APPLIED SCIENCE (A203)

Accounting

Purpose: The curriculum is designed for persons who seek full-time employment in the accounting field or who seek to complete a four-year degree through transfer to Radford University or some other four-year institution.

Accreditation: This program is accredited by the Association of Collegiate Business Schools and Programs.

Occupational Objectives: Technician, or trainee in accounting, auditing, or management.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Suggested Schedule

First Year	Spring
Fall	ACC 124
ACC 211	ACC 212
BUS 100	BUS 125 or MTH 271
ENG 111	CST 105 or CST 100
ITE 115	ECO 120
MTH 120 or MTH 163	
SDV 100 or SDV 108	

Second Year	Spring
Fall	ACC 215
ACC 221 (Fall only)	ACC 261
ACC 231 (Fall only)	BUS 241
AST 205	FIN 215
BUS 225	Humanities/Fine Arts Elective
ITE 140	HLT/PED

Curriculum and Other Requirements

		Credits
CST 105	Oral Communication (or CST 100)	3
ECO 120[3]	Survey of Economics	3
ENG 111*	College Composition I	3
HLT/PED[1]	Health or Physical Education	1
ITE 115	Introduction to Computer Applications and Concepts	3
MTH 120[4,*]	Introduction to Mathematics (or MTH 163)	3
SDV 100	College Success Skills (or SDV 108)	1
E[2]	Humanities/Fine Arts Elective	3

Accounting and Related Courses

ACC 124	Payroll Accounting I	3
ACC 211-212*	Principles of Accounting I-II	8
ACC 215*	Computerized Accounting	3
ACC 221*	Intermediate Accounting I	4
ACC 231*	Cost Accounting I	3
ACC 261*	Principles of Federal Taxation I	3
AST 205*	Business Communications	3
BUS 100	Introduction to Business	3
BUS 125[4,*]	Applied Business Mathematics (or MTH 271)	3
BUS 225*	Applied Business Statistics	3
BUS 241	Business Law I	3
FIN 215*	Financial Management	3
ITE 140	Spreadsheet Software	3
Total Minimum Credits for Degree		**65**

[1] One credit of Health (HLT) or Physical Education (PED) is required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Students considering transfer to a four-year college should take ECO 201 or ECO 202 after consulting a faculty advisor.

[4] Students planning to transfer to a four-year college should take MTH 163 and MTH 271. Students are encouraged to contact the four-year institution for applicable MTH requirements.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

CAREER STUDIES CERTIFICATE (221-203-02)

Accounting

Purpose: The one-year career studies program is designed for persons who seek employment as a bookkeeper or as an accounting clerk.

The career-studies program gives a student the necessary accounting skills to sit for the national AIPB Certified Bookkeeper Examination.

Occupational Objectives: Technician or trainee in accounting or bookkeeping.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ACC 211 in the first semester of coursework, since this course is a prerequisite for other required courses.

Curriculum and Other Requirements		Credits
ACC 124	Payroll Accounting	3
ACC 211	Principles of Accounting I	4
ACC 212*	Principles of Accounting II	4
ACC 215*	Computerized Accounting	3
ACC 261*	Federal Taxation I	3
AST 205*	Business Communications	3
BUS 125*	Applied Business Math	3
ITE 115	Introduction to Computer Applications and Concepts	3
ITE 140	Spreadsheet Software	3
Total Minimum Credits for Certificate		**29**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

Fall	Spring
ACC 124	ACC 212
ACC 211	ACC 215
AST 205	ACC 261
BUS 125	ITE 140
ITE 115	

ASSOCIATE OF APPLIED SCIENCE (400)

Administration of Justice

Purpose: This curriculum program has two primary purposes: (1) to prepare students for careers in criminal justice, and (2) to provide the first two years' academic foundation for transfer into a four-year professional degree program in the discipline. Of special note – though the program is geared for maximum transferability from Virginia Western to any four-year institution, it is specifically focused to meet the requirements of the Radford University program.

Occupational Objectives: Careers in the Administration of Justice field cover a wide variety of activities. Most common are the uniformed officers who form our local, county and state police agencies. However, many people are also employed in an enforcement/investigative capacity by numerous federal government agencies such as the FBI, Secret Service, Border Patrol, Treasury Department, and National Forest and Park Services (some of these agencies require a four-year degree). One may also find employment in related criminal justice occupations including corrections, retail and industrial security, probation/parole, insurance work and private investigation.

Articulation Agreement: Any student who completes the coursework requirements having a "C" grade or above in all courses will be granted admission to the Radford University "Two-Plus-Two" Bachelor of Science degree program in Criminal Justice. This program is particularly attractive since a maximum of 87 semester-hour credits will transfer to Radford from Virginia Western and the remaining 33 semester-hour credits of Radford courses are offered on the Virginia Western campus; thus both the AAS and BS degrees are earned in Roanoke at substantial financial savings.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Developmental courses are required for students with deficiencies in English or mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place about Algebra II (MTH 4) and into college level mathematics (MTH 141, MTH 147, MTH 163) on the placement test will be. required to take developmental courses.

Curriculum and Other Requirements

General Education Core Courses — **Credits**

CST 100	Principles of Public Speaking	3
ENG 111-112	College Composition I-II	6
HLT/PED[1]	Health or Physical Education	3
ITE 115	Intro Computer Applications and Concepts	3
MTH 157	Elementary Statistics	3
PHI 102	Introduction to Philosophy II (or PHI 101)	3
PLS 211	United States Government I	3
PSY 200	Principles of Psychology	3
SOC 200	Principles of Sociology	3
SDV 100	College Success Skills (or SDV 108)	1
E[2]	Laboratory Science Electives	8
E[3]	Humanities/Fine Arts Elective	3

Administration of Justice and Related Courses

ADJ 100	Survey of Criminal Justice	3
ADJ 120	Introduction to Courts	3
ADJ 140	Introduction to Corrections	3
ADJ 229	Law Enforcement and the Community	3
E[4]	Administration of Justice Electives	12
Total Minimum Credits for Transfer Degree		**66**

Additionally—to transfer maximum Virginia Western credits to the Radford University "Two- Plus-Two" degree program, take 21 semester hours in elective transfer courses, six of which must be in the area of humanities. The Radford University counselor on Virginia Western's campus should pre-approve these additional hours.

[1] If a student takes HLT 110 for 2 credits, a physical education course may be used for the one credit hour difference. Three physical education courses will not fulfill this requirement. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service. Students preparing to transfer to Radford University on the articulation agreement must have three credits of Health.

[2] The Radford "Two-Plus-Two" program and most colleges require a two-semester sequence of natural science (Biology 101-102, Chemistry 111-112 or Geology 105-106).

[3] Humanities Elective: Radford accepts only ENG 241, 242, ENG 243, PHI 101; REL 200, REL 210.

[4] Four ADJ electives must be taken from the following list:

ADJ 105 Juvenile Justice System
ADJ 107 Survey of Criminology
ADJ 130 Introduction to Criminal Law
ADJ 227 Constitutional Law for Justice Personnel
ADJ 236 Principles of Criminal Investigation
ADJ 237 Advanced Criminal Investigation

ASSOCIATE OF APPLIED SCIENCE (400)

Administration of Justice cont'd

Suggested Schedule

First Year	Spring	Second Year	Spring
Fall	ADJ 120	**Fall**	ADJ 229
ADJ 100	CST 100	ADJ 140	PHI 102 (or PHI 101)
ENG 111	ENG 112	PLS 211	ADJ Elective
HLT/PED	MTH 157	ADJ Elective	ADJ Elective
ITE 115	SOC 200	Humanities /Fine Arts	Laboratory Science
PSY 200	ADJ Elective	Laboratory Science	Elective
SDV 100 (or SDV 108)		Elective	

ASSOCIATE OF APPLIED SCIENCE (298)

Administrative Management Technology

Purpose: Graduates of our Administrative Management degree program are competitively positioned for jobs in administrative support supervision and administrative/office management. Occupations related to this field include: general office manager, hospital office manager, billing and/or credit manager, executive assistant, and account managers.

To complete a degree program in administrative management, students will enroll in courses that cover the principles of business as well as the administrative and technological functions in a corporation or office. Students learn the basic skills of office management which prepare them to carry out, organize, and direct administrative support operations in a variety of settings. Subjects studied will include accounting, business communications, management principles, microcomputer office applications, and office administration.

Students may earn an A.A.S. degree upon completion. Specializations are available in legal and medical administrative management.

Accreditation: This program is accredited by the Association of Collegiate Business Schools and Programs. Virginia Western Community College is accredited by the Southern Association of Colleges and Schools (SACS).

Occupational Objectives: Occupations related to this field include: general office manager, hospital office manager, billing and/or credit manager, executive assistant, and account managers.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Curriculum and Other Requirements
Administrative Management Major
General Education Core Courses

		Credits
CST 105	Oral Communication	3
ENG 111*	College Composition I	3
HLT/PED[1]	Health or Physical Education	1
MTH 120*	Intro. to Mathematics	3
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Management Technology	1
E[2]	Humanities/Fine Arts Elective	3

Administrative Management and Related Courses

ACC 211*	Principles of Accounting I	4
AST 101	Keyboarding I	3
AST 102*	Keyboarding II (Windows)	3
AST 107	Editing/Proofreading Skills	3
AST 113*	Keyboarding for Speed & Accuracy	1
AST 141*	Word Processing I (Microsoft® Word)	3
AST 154	Voice Recognition Applications	1
AST 205*	Business Communications	3
AST 232*	Microcomputer Office Applications	3
AST 236*	Specialized Software Applications	3
AST 238*	Advanced Word Processing	3
AST 243-244*	Office Administration I-II	6
BUS 200	Principles of Management	3
BUS 205	Human Resource Management	3
BUS 241	Business Law	3
MKT 100	Principles of Marketing	3
Total Minimum Credits for Degree		**65**

[1] Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE (298)

Administrative Management Technology cont'd

Administrative Management Major

Suggested Schedule

First Year	Spring
Fall	ACC 211
AST 101	AST 102
AST 107	AST 113
AST 154	AST 141
ENG 111	BUS 241
MKT 100	CST 105
MTH 120	
SDV 101	

Second Year	Spring
Fall	AST 205
AST 232	AST 236
AST 238	AST 244
AST 243	HLT/PED
BUS 200	PSY 120
BUS 205	Humanities/Fine Arts

Curriculum and Other Requirements
Legal Administrative Management Specialization (02)

General Education Core Courses		Credits
CST 105	Oral Communication	3
ENG 111	College Composition I	3
HLT/PED[1]	Health or Physical Education	1
MTH 120*	Intro to Mathematics	3
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Management Technology	1
E[2]	Humanities/Fine Arts Elective	3

Legal Administrative Management and Related Courses

ACC 211*	Principles of Accounting 1	4
AST 101	Keyboarding I	3
AST 102*	Keyboarding II (Windows)	3
AST 107	Editing/Proofreading Skills	3
AST 113*	Keyboarding for Speed & Accuracy	1
AST 141*	Word Processing I (Microsoft® Word)	3
AST 154	Voice Recognition Applications	1
AST 205*	Business Communications	3
AST 232*	Microcomputer Office Applications	3
AST 238*	Advanced Word Processing	3
AST 243-244*	Office Administration I-II	6
BUS 200	Principles of Management	3
BUS 205	Human Resource Management	3
BUS 241	Business Law	3
LGL 110	Introduction to Law and the Legal Assistant	3
LGL 125	Legal Research	3
MKT 100	Principles of Marketing	3
Total Minimum Credits for Degree		**68**

[1] Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Legal Administrative Management Specialization (02)

Suggested Schedule

First Year	Spring
Fall	AST 102
AST 101	AST 141
AST 107	AST 205
AST 154	CST 105
ENG 111	HLT/PED
LGL 110	MTH 120
MKT 100	
SDV 101	

Second Year	Spring
Fall	AST 232
ACC 211	AST 244
AST 113	BUS 200
AST 238	LGL 125
AST 243	PSY 120
BUS 205	Humanities/Fine Arts
BUS 241	

Medical Administrative Management Specialization (03)

Suggested Schedule

First Year	Spring
Fall	AST 102
AST 101	AST 113
AST 154	AST 141
ENG 111	CST 105
HLT 143	HLT/PED
MKT 100	HLT 144
MTH 120	Humanities/Fine Arts
SDV 101	

Second Year	Spring
Fall	AST 205
ACC 211	AST 232
AST 238	AST 244
AST 243	BUS 200
BUS 205	PSY 120
BUS 241	

Curriculum and Other Requirements
Medical Administrative Management Specialization (03)

General Education Core Courses

		Credits
CST 105	Oral Communication	3
ENG 111*	College Composition I	3
HLT/PED[1]	Health or Physical Education	1
MTH 120*	Intro to Mathematics	3
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Management Technology	1
E[2]	Humanities/Fine Arts Elective	3

Medical Administrative Management and Related Courses

ACC 211*	Principles of Accounting 1	4
AST 101	Keyboarding I	3
AST 102*	Keyboarding II (Windows)	3
AST 113*	Keyboarding for Speed & Accuracy	1
AST 141*	Word Processing I (Microsoft® Word)	3
AST 154	Voice Recognition Applications	1
AST 205*	Business Communications	3
AST 232*	Microcomputer Office Applications	3
AST 238*	Advanced Word Processing	3
AST 243- 244*	Office Administration I-II	6
BUS 200	Principles of Management	3
BUS 205	Human Resource Management	3
BUS 241	Business Law	3
HLT 143-144	Medical Terminology I-II	6
MKT 100	Principles of Marketing	3
Total Minimum Credits for Degree		**65**

[1] Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

CERTIFICATE (218)

AMT: Administrative Professional

Purpose: This curriculum is designed to empower administrative professionals with the tools necessary to succeed in a variety of office positions across all types of business and industry. Administrative professionals provide support to executives and management. Administrative professionals may also supervise other office personnel. Tasks may involve preparing reports and correspondence, creating spreadsheets, managing schedules, and directing the labor tasks of other personnel.

Occupational Objectives: Employment opportunities include administrative assistants, medical office personnel, legal assistants, and a variety of administrative support positions.

Accreditation: This program is accredited by the Association of Collegiate Business Schools and Programs. Virginia Western Community College is accredited by the Southern Association of Colleges and Schools (SACS).

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Curriculum and Other Requirements

General Education Core Courses		Credits
ENG 111*	College Composition I	3
HLT/PED[1]	Health or Physical Education	1
SDV 101	Orientation to Administrative Support Technology	1

Administrative Professional and Related Courses

ACC 124	Payroll Accounting I	3
AST 101	Keyboarding I	3
AST 102*	Keyboarding II - Windows	3
AST 107	Editing/Proofreading Skills	3
AST 113*	Keyboarding for Speed & Accuracy	1
AST 141*	Word Processing I (Microsoft Word)	3
AST 154	Voice Recognition Applications	1
AST 205*	Business Communications	3
AST 232*	Microcomputer Office Applications	3
AST 236*	Specialized Software Applications	3
AST 238*	Advanced Word Processing	3
AST 243-244*	Office Administration I-II	6
Total Minimum Credits for Certificate		**40**

[1] *Consult approved health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.*

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
AST 101
AST 107
AST 154
ENG 111
SDV 101

Spring
ACC 124
AST 102
AST 113
AST 141
HLT/PED

Second Year

Fall
AST 205
AST 232
AST 238
AST 243

Spring
AST 236
AST 244

CAREER STUDIES CERTIFICATE (221-298-01)

AMT: Executive Assistant

Purpose: This career studies certificate prepares individuals for administrative assistant employment opportunities. The curriculum is designed to teach students tasks such as the creation and editing of various business documents and the proper use of computer application software.

Occupational Objectives: Employment opportunities include executive assistants, administrative specialists, and other office-related positions.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. To be successful in this program, students must have demonstrated English competency to be placed in ENG 111. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements

Executive Assistant and Related Courses		Credits
ACC 124	Payroll Accounting I	3
AST 101	Keyboarding I	3
AST 102*	Keyboarding II - Windows	3
AST 107	Editing/Proofreading Skills	3
AST 113*	Keyboarding for Speed & Accuracy	1
AST 141*	Word Processing I (Microsoft® Word)	3
AST 154	Voice Recognition Applications	1
AST 205*	Business Communications	3
AST 232*	Microcomputer Office Applications	3
AST 238*	Advanced Word Processing	3
Total Minimum Credits for Certificate		**26**

This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.

Suggested Schedule

First Year

Fall
ACC 124
AST 101
AST 107
AST 154

Spring
AST 102
AST 113
AST 141
AST 205

Second Year

Fall
AST 232
AST 238

CAREER STUDIES CERTIFICATE (221-706-96)

Advanced Technology in Mechatronics - Fundamentals

Purpose: This Career Studies Certificate in Advanced Technology in Mechatronics - Fundamentals combines the concepts and practices of mechanical and electrical processes in order to manipulate motorized, hydraulic and pneumatic machines to perform complex automated functions in an industrial or manufacturing setting for an entry-level position. Students may continue into the Technical Studies A.A.S. Mechatronics specialization degree.

Occupational Objective: Entry-level opportunities at automated manufacturing and computer-aided industrial sites. Positions include mechanical, maintenance, electrical, quality, computer, process, and manufacturing technicians.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. To be successful in this program, students must have demonstrated Math competency to be placed in Algebra I. Students not achieving this level will be required to take developmental courses or receive departmental approval.

Curriculum and Other Requirements

General Education Core Course **Credits**

ITE 115 ..... Introduction to Computer Applications and Concepts 3

Advanced Technology and Other Related Courses

ELE 133-134* .. Practical Electricity I-II 6
ETR 123* ..... Electronic Applications I 1
ETR 141* ..... Electronics I 3
MEC 162 ..... Applied Hydraulics and Pneumatics 3
Total Minimum Credits for Certificate 16

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	ELE 134
ELE 133	ETR 123
ITE 115	ETR 141
	MEC 162

CAREER STUDIES CERTIFICATE (221-706-90)

Advanced Technology in Mechatronics

Purpose: The Advanced Technology in Mechatronics program is designed to challenge the student with hands-on experience and training in basic concepts of the electromechanical engineering technology field. This program offers not only general education courses but also offers exciting hands-on courses in advanced technology. At completion students should possess the basic level for skills required for continued training in the Advanced Technology in Mechatronics field. Graduates may seek immediate employment, continue their studies in the Technical Studies A.A.S. Mechatronics Technology specialization degree, or consider opportunities available to transfer to Bachelor of Technology programs offered by some four-year colleges and universities.

Occupational Objectives: Electromechanical equipment technicians install, maintain, troubleshoot, and repair a wide range of computer-driven manufacturing or automatic control equipment. Electromechanical equipment technicians must understand basic electronics and computer operating systems in order to work with a wide variety of equipment, systems, and manufacturing processes. Responsibilities may include estimating, inspecting, and testing engineering equipment; operating, maintaining, and repairing engineering plants; research and development; sales and representation; and training and education.

Admission Requirements: Applicants must meet the general requirements for admission to the college. To be successful in this program, students must have demonstrated Math competency to be placed in Algebra 1. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements

Advanced Technology and Other Related Courses		Credits
EGR 105	Intro to Problem Solving in Tech	1
EGR 123	Intro to Engineering Design	2
ETR 113*	DC and AC Circuits	4
ETR 286*	Prin. and Applications of Robotics	3
IND 108	Technical Computer Applications (or EGR 216)	3
IND 113	Materials and Processes of Manufacturing	3
IND 116	Applied Technology	3
IND 250	Intro to Basic Computer Integrated Manufacturing	3
IND 251	Automated Manufacturing Sys I	4
MEC 162	Applied Hydraulics & Pneumatics	3
Total Minimum Credits for Certificate		**29**

This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.

Suggested Schedule

First Year	Spring
Fall	MEC 162
EGR 123	
ETR 113	
IND 108	

Second Year	Spring
Fall	EGR 105
ETR 286	IND 113
IND 116	IND 251
IND 250	

Note: *Dual-enrolled high school students will not be able to officially enroll in and/or graduate from this program until the end of the last semester of their senior year.*

CAREER STUDIES CERTIFICATE (221-903-10)

Air Conditioning and Refrigeration

Purpose: The career studies program in Air Conditioning and Refrigeration is designed to meet the short-term training needs of the adult part-time student by presenting the essential technical concepts and practices of the air conditioning and refrigeration field. Completion of the degree meets the educational requirements for taking the journeyman's exam; however, students must have two years of occupational experience to qualify to take the exam.

The program also prepares the student to take the EPA Section 608 Certification test, which is now required of all people employed in the installation, maintenance and repair of air conditioning and refrigeration equipment. This certification test is given on campus during the student's first year of studies.

Occupational Objectives: Air conditioning/ refrigeration system installer, air conditioning system service technician, and air conditioning sales.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. To be successful in this program, students must have proficiency in oral and written communication skills and general mathematics is required. Students must have demonstrated Math competency to be placed above Pre-Algebra. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements

Air Conditioning & Refrigeration Related Courses		Credits
AIR 121*	Air Conditioning & Refrigeration I	3
AIR 122*	Air Conditioning & Refrigeration II	3
AIR 123*	Air Conditioning & Refrigeration III	3
AIR 154*	Heating Systems I	3
BLD 159	Mechanical Code and Certification Preparation	3
ELE 130	Electricity	4
SAF 127	Industrial Safety	2
WEL 120	Fundamentals of Welding	3
Total Minimum Credits for Certificate		**24**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	**Spring**
Fall	AIR 122
AIR 121	SAF 127
ELE 130	
Second Year	**Spring**
Fall	AIR 154
AIR 123	BLD 159
WEL 120	

CAREER STUDIES CERTIFICATE (221-895-82)

Architectural/Civil Engineering Aide

Purpose: This program is designed to prepare students for entry-level positions in architectural and civil engineering technology or to expand the knowledge and skills of individuals presently employed in these fields. All of the courses offered through this program may be applied towards the AAS degree in Architectural/Civil Technology.

Occupational Objectives: Architectural or civil engineering technology aide.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirement: Computer literacy is a requirement for admission.

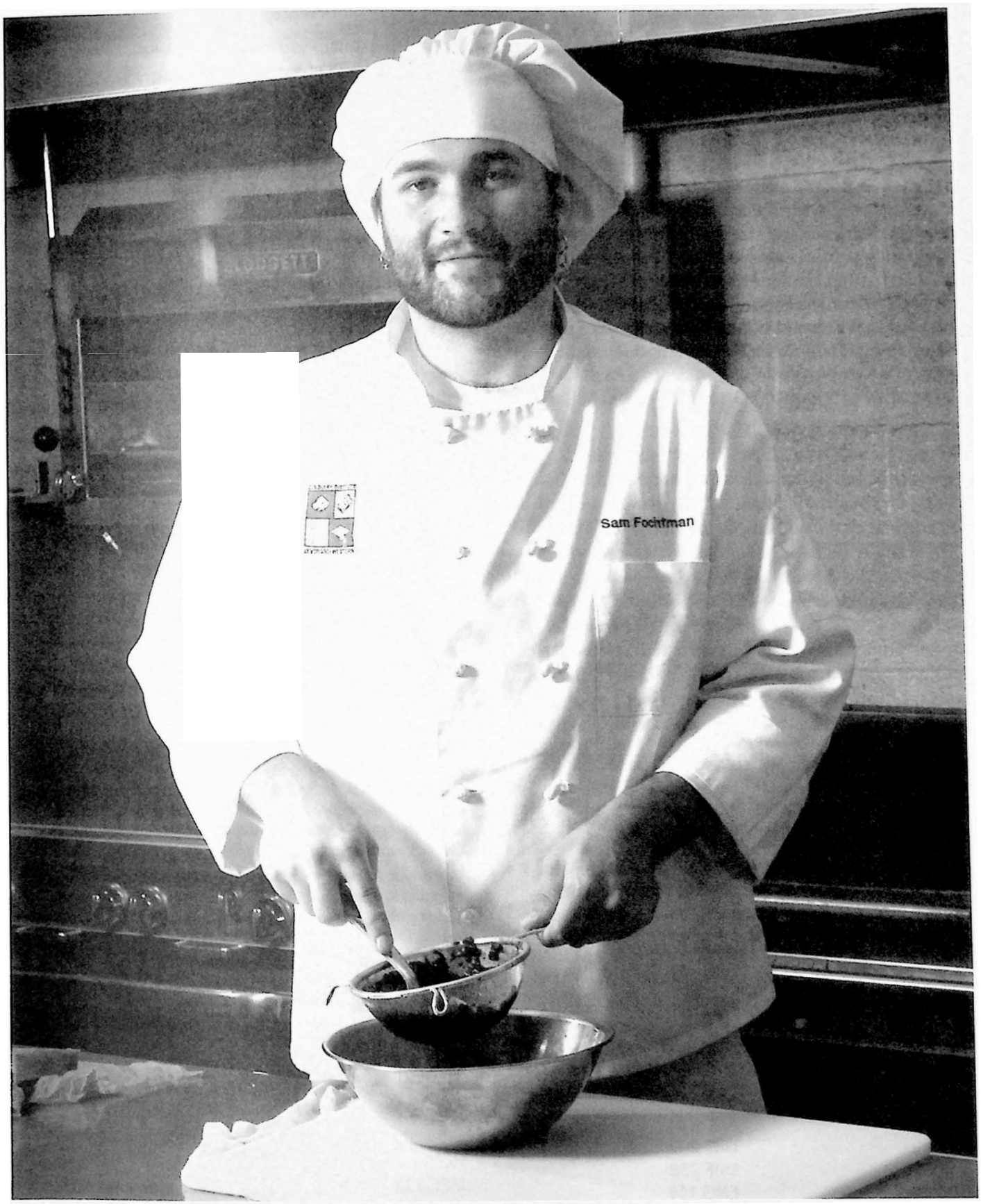
Curriculum and Other Requirements		Credits
Architectural/Civil Engineering and Related Courses		
ARC 133	Construction Methodology and Procedures I	3
ARC 221*	Architectural CAD Applications Software I	3
CIV 135	Construction Management and Estimating	3
CIV 171*	Surveying I	3
DRF 201-202*	Computer Aided Drafting and Design I-II	6
DRF 238*	Computer Aided Modeling & Rendering	3
MTH 115*	Technical Mathematics I	3
Total Minimum Credits for Certificate		**24**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	ARC 133
DRF 201	DRF 202
MTH 115	DRF 238

Second Year	Spring
Fall	CIV 135
ARC 221	CIV 171


Sam Fochtman

ASSOCIATE OF APPLIED SCIENCE (895)

Architectural/Civil Engineering Technology

Purpose: The Architectural/Civil Technology degree is designed to prepare qualified technicians for career opportunities in architecture and civil engineering technology by exposing the student to the main areas of these professions. Courses in construction planning, estimating, surveying, and construction materials are included. Fundamental courses in mechanics (statics and strength of materials) are required. A comprehensive three semester sequence of CAD drafting classes exposes the student to the fundamentals of computer-aided drafting and introduces the application of a specialty suite such as Autodesk® Architectural Desktop. Graduates may seek immediate employment or transfer to a Bachelor of Technology program at certain four-year colleges and universities.

Occupational Objectives: The architectural/civil technician serves as a liaison between the craftsperson and the technologist or engineer. Opportunities include employment with architects, consulting engineers, general contractors, land surveyors, and government organizations such as the Virginia Department of Transportation (VDOT) and the Department of Environmental Quality (DEQ). Opportunities also exist in construction-related manufacturing fields such as prefabricated buildings, steel fabrication, and precast/prestressed concrete production.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Program Requirements: It is strongly recommended that students take ENG 111 in the first year of coursework.

Suggested Schedule

First Year	
Fall	**Spring**
ARC 100	ARC 133
DRF 201	DRF 202
EGR 216	DRF 238
GEO 200	ENG 111
MTH 115	MEC 131
SDV 101	MTH 116
Second Year	**Spring**
Fall	CIV 135
ARC 221	CIV 171
GIS 200	CST 100
HLT/PED	GIS 201
MEC 132	Humanities/Fine Arts
PHY 201	Social Science Elective

Curriculum and Other Requirements

General Education Core Courses		Credits
CST 100	Prin of Public Speaking (or CST 105)	3
ENG 111	College Composition I	3
GEO 200[3]	Intro to Physical Geography	3
HLT/PED[1]	Health or Physical Education	2
MTH 115-116	Technical Mathematics I-II	6
PHY 201[4]	General College Physics I	4
SDV 101	Orientation to Engineering	1
E[2]	Humanities/Fine Arts Elective	3
E[3]	Social Science Elective	3

Architectural/Civil Engineering and Related Courses		
ARC 100	Introduction to Architecture	3
ARC 133	Construction Method & Proced I	3
ARC 221*	Architectural CAD Applica Software I	3
CIV 135	Construction Manage & Estimating	3
CIV 171	Surveying I	3
DRF 201-202*	Computer Aided Drafting Design I-II	6
DRF 238	Computer-Aided Modeling/Rendering	3
EGR 216*	Computer Methods in Engin & Tech	3
GIS 200-201*	Geographical Information Sys I-II	6
MEC 131*	Mechanics I – Statics for Engin Tech	3
MEC 132*	Mechanics II – Strength of Materials	3
Total Minimum Credits for Degree		**67**

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[4] Students transferring to a four-year institution should also complete PHY 202.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE (895)

Architectural/Civil Engineering Technology cont'd

Students who do not place above Algebra II (MTH 04) and into the pre-requisite course for calculus (MTH 163 or 166) on the placement test will be required to take developmental courses.

Program Requirements: As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Architectural/Civil Engineering Technology may earn a baccalaureate degree (BS) in Engineering Technology on the Virginia Western Community College campus in Roanoke. Students must take ENG 111 in their first semester of classes.

Suggested Schedule

First Year	
Fall	**Spring**
DRF 201	DRF 202
EGR 216	HLT/PED
ENG 111	ITP 136
GEO 200	MEC 131
MTH 115	MTH 116
SDV 101	Humanities/Fine Arts

Second Year	
Fall	**Spring**
ARC 221	CIV 171
GIS 200	CST 100
GIS 210	GIS 201
MEC 132	GIS 205
PHY 201	Social Science Elective

Curriculum and Other Requirements
Geographic Information Systems Specialization
General Education Core Courses

		Credits
CST 100	Prin of Public Speaking (or CST 105)	3
ENG 111*	College Composition I	3
GEO 200	Introduction to Physical Geography	3
HLT/PED[1]	Health or Physical Education	2
MTH 115-116*.	Technical Mathematics I-II	6
PHY 201[4]	General College Physics I	4
SDV 101	Orientation to Engineering	1
E[2]	Humanities/Fine Arts Elective	3
E[3]	Social Science Elective	3

GIS and Related Courses

ARC 221	Architectural CAD Applica Software I	3
CIV 171	Surveying I	3
DRF 201-202*.	Computer-Aided Drafting Design I-II	6
EGR 216*	Computer Methods in Engin & Tech	3
GIS 200-201*	Intro to Geographical Info Systems I-II	6
GIS 205**	Three Dimensional Analysis	3
GIS 210**	Understanding Geographic Data	3
ITP 136	C# Programming	4
MEC 131	Mechanics I-Statics for Engin Tech	3
MEC 132*	Mechanics II – Strength of Materials	3
Total Minimum Credits for Degree		**65**

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

4 Students transferring to a four-year institution should also complete PHY 202.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

***This course has a co-requisite. Co-requisites for all courses are listed in the course description section at the back of the catalog.*

CAREER STUDIES CERTIFICATE (221-909-01)

Automotive Analysis and Repair

Purpose: This program is in partnership with Roanoke City and Roanoke County Public Schools. Complexity in automotive vehicles increases each year because of scientific discovery and new technology. There is a great demand for qualified automotive technicians to service the growing number of automobiles in our society. The purpose of the Automotive Analysis and Repair program is to prepare the student technician with instruction and practice necessary to repair today's complex vehicles. Training will be provided in automotive systems theory, service, and repair. This program is competency based to include specific classroom and shop exercises to prepare a student for ASE certification.

Occupational Objectives: Automotive technician, parts sales and service representative, repair service salesperson, repair service writer, repair technician, tune-up specialist.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Curriculum and Other Requirements
Automotive Analysis and Related Courses **Credits**

AUT 126*	Automotive Fuel and Ignition Systems (Engine Performance)	5
AUT 241	Automotive Electrical Skills	4
AUT 265**	Automotive Braking Systems	4
AUT 266**	Automotive Alignment	4
Total Minimum Credits for Certificate		**17**

Suggested Schedule

First Year
Fall
AUT 241
AUT 265 or 266**

Spring
AUT 126

Second Year
Fall
AUT 265 or 266**

**This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

***AUT 265 and 266 are taught in alternate years.*

Note: *Dual-enrolled high school students will not be able to officially enroll in and/or graduate from this program until the end of the last semester of their senior year.*

ASSOCIATE OF SCIENCE DEGREE (213)

Business Administration

Purpose: The curriculum is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree program in business administration. Students are urged to acquaint themselves with the requirements of the major department in the college or university to which transfer is contemplated and also to consult with their advisors in planning their program and selecting electives. In order to prepare for junior class standing at a four-year college or university, the student usually must complete a program at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

Accreditation: This program is accredited by the Association of Collegiate Business Schools and Programs.

Occupational Objectives: This curriculum prepares students for transfer to a four-year college or university to complete a baccalaureate degree in business administration. Students are strongly urged to contact the college or university contemplated for approval of electives and courses for transfer credits.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and Mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Curriculum and Other Requirements

General Education Core Courses

		Credits
CST 100	Principles of Public Speaking	3
ECO 201	Principles of Macroeconomics	3
ECO 202	Principles of Microeconomics	3
ENG 111-112*	College Composition I-II	6
ENG 241*	Survey of American Lit I (or ENG 243)	3
HIS 111	History of World Civilization I	3
HLT/PED[3]	Health or Physical Education	2
ITE 115	Intro Computer Applica & Concepts	3
MTH 163	Pre-Calculus I (or MTH 166)	3
MTH 241-242[2]	Statistics I-II (or Elective)	6
MTH 271*	Applied Calculus I	3
SDV 100	College Success Skills (or SDV 108)	1
E[1]	Science Sequence	8
E[2]	Elective	6

Business Administration Courses

ACC 211-212*	Principles of Accounting I-II	8

Total Minimum Credits for Degree 61

[1] Natural Science elective must include a two-semester sequence of BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202. If planning on transfer, contact four-year institution for requirements.

[2] Electives must be selected form the "Approved List of Transfer Courses." A two-semester sequence of the same course is recommended for transfer to most four-year institutions. Students considering a transfer to Virginia Tech should take both MTH 241 and 242.

[3] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
ENG 111
HIS 111 or HIS 121
MTH 163
SDV 100 (or SDV 108)
Science Sequence

Spring
ENG 112
MTH 271
Science Sequence
Elective

Second Year

Fall
ACC 211
ECO 202
ENG 241 or ENG 243
HLT/PED
ITE 115
MTH 241 or Elective

Spring
ACC 212
CST 100
ECO 201
MTH 242 or Elective
Elective

CAREER STUDIES CERTIFICATE (221-212-04)

Business Industrial Supervision

Purpose: The program is designed to prepare individuals to operate in business and industry on the supervisory level by providing a broad foundation of general business, management, technology, industrial safety and human relations.

Occupational Objectives: Entry-level supervisory positions including: manager, supervisor, foreman, team leader, or management trainee. Additionally, it is designed to serve those who may be seeking a promotion to either an entry level management position or those seeking higher levels of management responsibility.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Curriculum and Other Requirements

General Education Core Courses

		Credits
ENG 111*	College Composition I	3
ITE 115	Intro Computer Applications and Concepts	3
PSY 200	Principles of Psychology	3

Business Industrial Supervision and Related Courses

BUS 100	Introduction to Business	3
BUS 111	Principles of Supervision I	3
BUS 205	Human Resource Management	3
SAF 127	Industrial Safety	2
Total Minimum Credits for Certificate		**20**

* This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.

Suggested Schedule

First Year

Fall
ENG 111
BUS 100
ENG 111

Spring
BUS 111
ITE 115

Second Year

Fall
BUS 205
PSY 200
SAF 127

CAREER STUDIES CERTIFICATE (221-732-12)

Cisco™ CCNA™ Networking

Purpose: The program consists of study and practice designed to teach students the skills needed to design, build, and maintain small to medium-size networks. This provides them with the opportunity to master the material necessary to earn the Cisco Certified Network Associate (CCNA™) certification, enter the workforce, and/or further their education and training in the computer networking field.

The Cisco Networking Academy on campus combines instructor-led, online learning with hands-on laboratory exercises where students apply what they learn in class while working on actual networks. This curriculum is supported worldwide in 133 countries by Cisco and is only available to students enrolled in the program and is administered by Cisco certified instructors.

In addition to networking and other technology skills, the Academy program helps students improve math, science, writing, and problem-solving abilities. To ensure a well-rounded educational experience, learning objectives in the curriculum are tied to national math and science standards as well as to workforce competencies.

Occupational Objectives: Telecommunications technician, LAN/ WAN technician/cable installer, technical representative/salesperson.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: Students lacking the necessary computer skills should take ITE 115 along with the regular first semester courses.

Curriculum and Other Requirements

CISCO CCNA Networking Courses		Credits
TEL 150	Cisco Internetworking I	4
TEL 151*	Cisco Internetworking II	4
TEL 250*	Cisco Internetworking III	4
TEL 251*	Cisco Internetworking IV	4
Total Minimum Credits for Certificate		**16**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall	Spring
TEL 150	TEL 151

Second Year

Fall	Spring
TEL 250	TEL 251

OR

Sequence for One-Year Completion

First Year

Fall	Spring
TEL 150 (1st 8 wks)	TEL 250 (1st 8 wks)
TEL 151 (2nd 8 wks)	TEL 251 (2nd 8 wks)

ASSOCIATE OF APPLIED SCIENCE DEGREE (511)

Communication Design

Purpose: The AAS in Communication Design is a skills-oriented program with instruction in traditional and current technology. Students will be prepared to begin careers in the computer graphics/ design industry and/or to transfer to four-year degree programs. This curriculum is structured to educate and prepare those wanting to work in the visual communications disciplines, such as graphic design and advertising, as well as the areas of digital prepress and web publishing. In addition to general education subjects, competency in visual literacy and acuity is taught through a diverse range of studio and art history classes. Studio specialization courses teach professional practices and standards using current technologies. Students will prepare portfolios for job search and/or application to upper-level institutions.

Occupational Objectives: Advertising design, printing, illustration, photography, digital illustration, digital prepress, graphic design, Web page design, and related occupations.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English, and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

A satisfactory aptitude for drawing is desirable. Proficiency in keyboarding is strongly recommended.

Note: Due to the prerequisite requirements in various art classes, these classes must be taken in a **specific** order. Students should work with a counselor or art faculty advisor to determine their individual course plan if the suggested course sequence is not followed. ENG 111, HLT/PED, CST, and Social Science electives may be taken at anytime in the sequence. MTH should be taken during the first year if development placement is required.

Curriculum and Other Requirements

General Education Core Courses		Credits
CST 105	Oral Communication (or CST 100)	3
ENG 111*	College Composition I	3
HLT/PED[2]	Health or Physical Education	2
MTH 120[3,*]	Introduction to Mathematics	3
SDV 101	Orientation to Visual Arts	1
E[4]	Social Science Elective	6

Communication Design and Related Courses		
ART 121-122*	Drawing I-II	6
ART 131-132*	Fundamentals of Design I-II	6
ART 141[1,*]	Typography I	3
ART 180[1]	Introduction to Computer Graphics	3
ART 221*	Drawing III (Figure Drawing)	3
ART 243*	Watercolor I	3
ART 247*	Painting Technique for Illustrators	3
ART 250	History of Design	3
ART 251-252[1,*]	Communication Design I-II	6
ART 282[1,*]	Graphic Techniques	3
ART 283[1,*]	Computer Graphics I (PhotoShop®)	3
ART 284[1,*]	Computer Graphics II (Digital Illus)	3
ART 287*	Portfolio and Resume Preparation	3
PHT 101	Photography I	3
Total Minimum Credits for Degree		**69**

[1] ART 180 is the prerequisite to all other computer-based classes. It is important to take this class as early in the curriculum as possible.
[2] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.
[3] For students who plan to transfer, MTH 151 or MTH 163 is recommended.
[4] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.
** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall	Spring	Summer
ART 121	ART 122	HLT/PED
ART 131	ART 132	MTH 120
ART 180	ART 141	Social Science
ART 250	ENG 111	
SDV 101	PHT 101	

Second Year

Fall	Spring
ART 221	ART 247
ART 243	ART 252
ART 251	ART 284
ART 282	ART 287
ART 283	CST 105 OR 100

CAREER STUDIES CERTIFICATE (221-729-95)

Computer Aided Drafting Career Exploration

Purpose: This program is designed to expose students to entry-level job requirements of positions in technologies using computer aided drafting or CAD. The courses provide training in the use of AutoDesk's computer aided design software, AutoCAD, Inventor and Architectural Desktop. This program also provides an excellent foundation for continued study in engineering technology programs.

Occupational Objectives: CAD operator.

Admission Requirements: Applicants must meet the general requirements for admission to the college.

To be successful in this program, students must have demonstrated Math and English competency to be placed in Algebra 1 and English 111. Students not achieving this level will be required to take developmental courses or receive departmental approval.

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: To be successful in this program, students must possess basic computer literacy to include keyboard and mouse usage and file management.

Curriculum and Other Requirements

Computer Aided Drafting Courses		Credits
DRF 201*	Computer Aided Drafting & Design I	3
DRF 202*	Computer Aided Drafting & Design II	3
DRF 203*	Computer Aided Drafting & Design III (or ARC 221)	3
Total Minimum Credits for Certificate		**9**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested High School Schedule

** Students must complete Algebra I–II and Geometry.*

Junior	Senior
DRF 201	DRF 202
DRF 203 or ARC 221	

Suggested Post High School Schedule

First Year

Fall	Spring
DRF 201	DRF 202

Second Year

Fall

DRF 203 or ARC 221

Note: *Dual-enrolled high school students will not be able to officially enroll in and/or graduate from this program until the end of the last semester of their senior year.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (242)

Culinary Arts

Purpose: The Associate of Applied Science program is designed to produce the trained hospitality and tourism workforce necessary to realize the Region's goal in establishing the Roanoke Valley area as a travel, convention, and tourism destination. Such a workforce will not only serve our visitors, but will also enrich our community by providing quality dining and memorable hospitality experiences in our local restaurants, clubs, and hotels. Based on statewide projections, during the next decade there will be a great demand for qualified culinary workers at multiple levels to service the growing needs of the culinary and hospitality industry in our society. As a provider of a skilled culinary and hospitality workforce, we will support the various regional economic development initiatives through our partnership with area businesses and public sector organizations.

Completion of the Associate of Applied Science degree satisfies the American Culinary Federation eligibility requirements to test for both the Certified Culinarian (CC) and Certified Pastry Culinarian (CPC) designations.

The curriculum is competency-based, and dual enrollment opportunities with secondary school programs in the college's service area are available.

Occupational Objectives: The curricula prepare graduates to enter the workforce at differing levels in the following positions: baker, broiler cook, expediter, fry/sauté cook, pantry cook, pastry cook, soup and sauce cook, sous chef, and vegetable cook. With successful work experience, students will be able to become head cooks and chefs.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7). Students who did not complete high school or who have a modified diploma will be required to take the placement test. Students who do not place above Pre- Algebra (MTH 9) and into Algebra I (MTH 3) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework. To successfully complete the laboratory components of the program, the student must be able to perform all of the essential functions of a culinarian:

1. Communicate satisfactorily with clients, supervisors, peers, and the culinary team, which includes a diverse group of people.
2. See and hear adequately to be able to react to the varied culinary environments, such as receive and interpret various equipment signals.
3. See adequately to read equipment gauges in order to correctly interpret displayed data.
4. Being prepared to attend and stand/ walk during class and/or labs during day and/or evenings lasting from 3 to 9 hours in length.
5. Walk rapidly for a prolonged period from one area to another. Work with sense of urgency.
6. Bend or squat frequently.
7. Assist in lifting or moving equipment, cooking pots and pans and food ingredients.
8. Demonstrate adequate eye/hand coordination for dexterity in manipulation of equipment and utensils.
9. Use hands for grasping, pushing, pulling and fine manipulation.
10. Work with arms fully extended overhead for short periods
11. Differentiate the color spectrum for proper preparation and presentation of prepared dishes.
12. Possess the visual acuity to correctly read handwritten requisitions, orders, receiving reports, recipes, and provide safety for clients.
13. Must be able to lift a minimum of 50 pounds.
14. Be able to multi-task, as well as, keep a "level head" when exposed to highly stressful and demanding situations in lab and internship settings.
15. Work in close quarters in close proximity to a diverse group of people.
16. Withstand high-temperature environment for prolonged periods of time.
17. Work as a member of a cohesive team. Despite the foregoing, a qualified person with a disability who can perform these essential functions with reasonable accommodation will be considered for admission along with other qualified applicants.

ASSOCIATE OF APPLIED SCIENCE DEGREE (242)

Culinary Arts cont'd

Curriculum and Other Requirements

General Education Core Courses — **Credits**

ACC 110 ..... Intro to Computerized Accounting 1
BUS 165* ..... Small Business Management 3
ENG 111* ..... College Composition I 3
ITE 115 ..... Intro. to Computer Applications and Concepts 3
MTH 120* ..... Introduction to Math 3
SDV 100 ..... College Success Skills 1
E[1] ..... Humanities/Fine Arts Elective 3
E[2] ..... Social Science Elective 3

Culinary Arts and Related Courses

HRI 106 ..... Principles of Culinary Arts I 3
HRI 107* ..... Principles of Culinary Arts II 3
HRI 119 ..... Application of Nutrition for Food Service 3
HRI 128* ..... Principles of Baking 3
HRI 145* ..... Garde Manger 3
HRI 154 ..... Prin. of Hospitality Management 3
HRI 158 ..... Sanitation and Safety 3
HRI 206* ..... International Cuisine 3
HRI 207* ..... American Regional Cuisine 3
HRI 215 ..... Food Purchasing 3
HRI 218* ..... Fruit, Vegetables and Starch Preparation 3
HRI 219* ..... Stock, Soups and Sauce Preparation 3
HRI 220* ..... Meat, Seafood, Poultry Preparation 3
HRI 225 ..... Menu Planning and Dining Room Service 3
HRI 251* ..... Food and Beverage Cost Control 3
HRI 290 ..... Coord Internship in Culinary Arts 3
Total Minimum Credits for Degree 68

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

[1] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[2] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

Suggested Schedule

First Year	Spring	Summer
Fall	HRI 128	ITE 115
ENG 111	HRI 145	Social Science
HRI 106	HRI 219	
HRI 154	HRI 225	
HRI 158	Humanities/Fine Arts	
MTH 120		
SDV 101		

Second Year	Spring
Fall	ACC 110
HRI 107	BUS 165
HRI 119	HRI 206
HRI 207	HRI 215
HRI 218	HRI 251
HRI 220	HRI 290

CAREER STUDIES CERTIFICATE (221-242-03)

Culinary Arts

Purpose: The Career Studies Certificate programs are designed to produce the trained hospitality and tourism workforce necessary to realize the Region's goal in establishing the Roanoke Valley area as a travel, convention, and tourism destination. Such a workforce will not only serve our visitors, but will also enrich our community by providing quality dining and memorable hospitality experiences in our local restaurants, clubs, and hotels. Based on statewide projections, during the next decade there will be a great demand for qualified culinary workers at multiple levels to service the growing needs of the culinary and hospitality industry in our society. As a provider of a skilled culinary and hospitality workforce, we will support the various regional economic development initiatives through our partnership with area businesses and public sector organizations.

The curriculum is competency-based, and dual enrollment opportunities with secondary school programs in the college's service area are available.

Occupational Objectives: The curriculum prepares graduates to enter the workforce at entry level in the following positions: line cook, pantry cook, prep and/or production cook and vegetable cook. With successful work experience, students will be able to become lead cooks.

Admission Requirements: Applicants must meet the general requirements for admission to the college.

Program Requirements: To successfully complete the laboratory components of the program, the student must be able to perform the essential functions of a culinarian #1 - 17 as listed under the Associate of Applied Science Degree.

Curriculum and Other Requirements

Culinary Arts Courses		Credits
HRI 106	Principles of Culinary Arts I	3
HRI 119	Applied Nutrition for Food Service	3
HRI 128*	Principles of Baking	3
HRI 145*	Garde Manger	3
HRI 154	Prin of Hospitality Management	3
HRI 158	Sanitation and Safety	3
HRI 206*	International Cuisine	3
HRI 207*	American Regional Cuisine	3
HRI 219*	Stock, Soups and Sauce Preparation	3
Total Minimum Credits for Certificate		**27**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	HRI 145
HRI 106	HRI 219
HRI 154	
HRI 158	

Second Year	Spring
Fall	HRI 128
HRI 119	HRI 206
HRI 207	

CAREER STUDIES CERTIFICATE (221-242-05)

Culinary Arts: Baking and Pastry

Purpose: The Baking and Pastry Career Studies Certificate program is designed to produce the trained hospitality and tourism workforce necessary to realize the Region's goal in establishing the Roanoke Valley area as a travel, convention, and tourism destination. Such a workforce will not only serve our visitors, but will also enrich our community by providing quality dining and memorable hospitality experiences in our local restaurants, clubs, and hotels. Based on statewide projections, during the next decade there will be a great demand for qualified culinary workers at multiple levels to service the growing needs of the culinary and hospitality industry in our society. As a provider of a skilled culinary and hospitality workforce, we will support the various regional economic development initiatives through our partnership with area businesses and public sector organizations.

The curriculum is competency-based, and dual enrollment opportunities with secondary school programs in the college's service area are available.

Occupational Objectives: The curriculum prepares graduates to enter the workforce at differing levels in the following positions: baker, bread baker cake maker and decorator, dessert maker, personal baker and wholesale baker.

Admission Requirements: Applicants must meet the general requirements for admission to the college.

Program Requirements: To successfully complete the laboratory components of the program, the student must be able to perform the essential functions of a culinarian #1 - 17 as listed under the Associate of Applied Science Degree.

Curriculum and Other Requirements

Culinary Arts Courses		Credits
HRI 128*	Principles of Baking	3
HRI 158	Sanitation and Safety	3
HRI 280*	Principles of Advanced Baking and Pastry	3
HRI 281*	Artisan Breads	3
HRI 282*	European Torts and Cakes	3
HRI 283*	Custards and Cremes	3
HRI 284*	Specialty, Spa & Plated Desserts	3
HRI 285*	Chocolate and Sugar Arts	3
HRI 286*	Wedding and Specialty Cakes	3
Total Minimum Credits for Certificate		**27**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring	Summer
Fall	HRI 281	HRI 284
HRI 128**	HRI 282	HRI 286
HRI 158	HRI 283	
HRI 280**	HRI 285	

*** HRI 128 will be scheduled during the first 8 weeks and HRI 280 will be scheduled during the second 8 weeks in order to satisfy prerequisite requirement.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (118)

Dental Hygiene

Purpose: The curriculum is designed to prepare students as primary preventive oral health professionals licensed to practice dental hygiene. Upon successful completion of the program, graduates will be eligible to take national, regional, and state board examinations leading to licensure as a registered dental hygienist (RDH).

Note: Individuals who have a felony or misdemeanor conviction may not be allowed to take the licensing exam. This decision is made by the Virginia Board of Dentistry. For questions regarding this issue, call Virginia Board of Dentistry (804) 367-4538.

Accreditation Status: The program has been accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the United States Department of Education.

Occupational Objectives: A dental hygienist may practice in any of the following settings:

Dental offices and dental clinics

Federal, state, and local health departments

Hospitals and nursing homes/home health organizations

School districts or departments of education

- Educational programs for dental, dental hygiene, and dental assisting students

Correctional facilities

- Private and public facilities for pediatric, geriatric, and other individuals/groups with special needs
- Health maintenance organizations/ managed care organizations

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Applicants to the Dental Hygiene program must have completed the following:

1. One unit each of high school or college biology and chemistry with a grade of "C" or higher by the end of the Spring 2012 semester.
2. Completion of BIO 141-142, Anatomy and Physiology with a grade of "C" or better by the end of the spring 2012 semester.
3. Algebra II or college equivalent. Students who have not completed Algebra I or Algebra II in high school with a grade of "C" or better will be required to take the placement test. Those who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on placement test will be required to take developmental courses.

Prerequisites must be completed by the end of the Spring 2012 semester.

The applicant's high school or college (if applicable) cumulative grade point average (GPA) must be at least 2.5 and is based on at least 12 credit hours of college credit in a 12-month timeframe. The GPA is determined at the end of fall semester prior to admission. Priority consideration will be given to applicants with a cumulative high school and/or college grade point average of 3.0 or above.

All qualified applicants must take the HOBET Test.

For application materials and additional program information, please see our Health Technology website at: http://www.virginiawestern.edu/ht/dental.

Admission Procedures: The Dental Hygiene program is open to qualified male or female applicants. Admission to the dental hygiene program is offered to qualified applicants on an annual basis at the Roanoke campus. Admission to the VWCC-DCC joint venture distance program site in Danville is offered to qualified applicants on a biennial basis during odd-numbered years; and to the VWCC-Lord Fairfax joint venture distance program site in Middletown on a biennial basis during even-numbered years. Deadline for submitting complete application materials is **February 15** for the upcoming academic year. Applicants should be aware that meeting the curriculum admission standards does not guarantee program admission. Applicants will be notified in writing of the action taken by the Dental Hygiene Admissions Committee in May.

To qualify for consideration by the Dental Hygiene Admissions Committee, the applicant must submit a complete application which includes the following:

Application to VWCC and, if applicable, the Joint Venture College;

Dental Hygiene Program Application;

- Official transcripts of high school and all colleges attended. (Transcripts from VWCC or other Virginia community colleges are not required.);

ASSOCIATE OF APPLIED SCIENCE DEGREE (118)

Dental Hygiene cont'd

Official record showing completion of GED, (if applicable as noted above);

Two letters of recommendation and two forms of evaluation from employers/former teachers using the format provided by VWCC. See the website at: http://www.virginiawestern.edu/ht/dental.

It is **required** that applicants submit official high school transcripts, GED with scores, and all official college transcripts in one envelope to the VWCC Health Technology Information Office along with the VWCC application. Applicants are encouraged to apply early and then see the Health Technology Information Specialist for information, evaluation, and advising regarding the program. Qualified applicants must complete the HOBET (Health Occupation Basic Entrance Test) at their own expense, which is nonrefundable, and be interviewed by the Dental Hygiene faculty.

It is strongly recommended that applicants with no dental assisting experience observe a dental hygienist for a minimum of one full workday to obtain a realistic view of the profession prior to application.

In addition to normal student expenses (tuition, books, etc.) the Dental Hygiene Program requires an expenditure of over $4,900 during the two-year program for uniforms, instruments, and special supplies. More than $3,500 will be needed at the beginning of the first semester.

VWCC Policy on Infectious Disease Status:
Applicants who believe they are at risk of contracting an infectious disease should seek testing and counseling prior to making application to the dental hygiene program. Students engaged in patient care activities are encouraged to know their HIV and HBV status.

Applicants who are HIV or HBV positive may wish to reconsider their career goals. They must consider:

1. The possibility they may become disabled during their dental education or early in their career;
2. The infectious hazards that certain aspects of dental practice may pose;
3. The possibility of barriers to training in certain invasive clinical activities that may be imposed while in dental hygiene school because of possible hazards to patients;
4. The cost of dental education given personal health and career uncertainties.

Essential Dental Hygiene Functions: To successfully complete the clinical component of the program, the student must be able to perform all of the essential functions of a dental hygienist:

1. Communicate satisfactorily with clients, physicians, peers, family members and the health care team;
2. See and hear adequately to note slight changes in the client's condition;
3. Hear adequately to perceive and interpret various equipment signals;
4. Demonstrate adequate eye/hand coordination for dexterity in manipulation of hand instruments and other equipment used in clinical practice;
5. Use hands for fine manipulation;
6. Manage the care of a client in a sudden emergency, including one-man CPR when necessary;
7. Possess the visual acuity to correctly read handwritten orders, medication records, chart contents, and provide safety for clients;
8. Read, comprehend, and apply knowledge from complex science and dental science texts.

Despite the foregoing, a qualified person with a disability who can perform these essential functions with reasonable accommodation will be considered for admission along with other qualified applicants.

Clinical Environment: The applicant should realize that student dental hygienists are, by nature of the profession, exposed regularly to highly stressful and demanding situations, difficult clients, and organizational and time pressures in a variety of client care settings. In addition, student and practicing dental hygienists are routinely exposed to blood and body fluids.

Academic Environment: The academic environment is focused heavily on the sciences. Extensive reading is required in all classes, and courses are science based and academically challenging. Ability to apply knowledge and concepts across courses and the curriculum is necessary to master material. The ability to read and understand complex/scientific material is crucial to success, as is the ability to analyze written matter and express yourself coherently in written form.

ASSOCIATE OF APPLIED SCIENCE DEGREE (118)

Dental Hygiene cont'd

Applicants with weaknesses in reading, vocabulary, written expression, and conceptualization are strongly urged to strengthen these areas prior to seeking admission. It is recommended that a medical terminology course be taken prior to admission.

The dental hygiene classroom environment consists of various modalities. While most courses originate from the main campus at Virginia Western Community College, some courses may originate from one of the distance campuses or be in an on-line format.

Student Responsibilities after Acceptance into the Program:

1. Admission is contingent upon a satisfactory medical examination indicating good general health. The medical examination must include evidence of a PPD skin test (or chest x-ray), and serology for the Hepatitis B surface antigen and antibody. The Hepavax vaccine is required. All documentation must be submitted to the Dental Hygiene Program Head no later than August 1 in order for the student to continue in the program.
2. Current certification in Healthcare Provider cardiopulmonary resuscitation (CPR) is required for both years of the program. **No substitutions are accepted.** Students are responsible for providing their own malpractice insurance coverage during the two years of the program. Insurance is available for purchase after admission to the program. This policy is nonrefundable. All documentation must be submitted to the Dental Hygiene Program Head no later than August 1 in order for the student to continue in the program.
3. All students admitted to the Dental Hygiene program must attend dental hygiene orientation, register for all classes, and pay their tuition prior to August 1. All students are required to purchase the instrument and supply kit, pay a lab usage fee, and are expected to order uniforms at orientation. **If a student withdraws from the program, these items are nonrefundable.**
4. Students admitted to the program with academic contingencies in Biology, Anatomy and Physiology, Chemistry, or Algebra must provide documentation of satisfactory completion of the contingency prior to the beginning of fall classes. Failure to meet a stated contingency will result in admission bein rescinded.
5. All students admitted to the program without prior experience in the dental field (chairside dental assisting) are required to observe dental and dental hygiene procedures in the dental office of their choice. The observation experience must be completed by August 1. Written documentation of this experience is required; forms will be provided by the Dental Hygiene program upon admission.
6. Students in the program are responsible for transportation to and from agencies utilized for clinical and community health rotation experiences.
7. Acceptance into the Program is contingent upon a satisfactory annual criminal background check and annual negative drug screening test. Satisfactory completion of this is required for license eligibility. Costs of the tests are the responsibility of the student.

Policy for Academic Retention: Continuation in the program: Satisfactory progress is demonstrated by achieving a grade of "C" or better in required Dental Hygiene and Natural Science courses.

Students must satisfactorily complete NAS 185 with a grade of "C" or above before progressing to the second year of the program. Students must complete required Dental Hygiene courses in sequence. Should a student receive a grade of "D" in any Dental Hygiene didactic course, didactic component of a clinical or laboratory course, or the laboratory component of a preclinical or didactic course, the student will be dropped from the program and must reapply for admission. Should a student receive a grade of "D" in the clinical component of DNH 142, 190, 244, or 245 due to failure to meet minimum clinical requirements for the semester, the student may progress to the next semester of the program with faculty approval, and will have additional patient requirements for graduation added. Two consecutive "D" grades in these clinical courses may result in the student being dropped from the program.

Readmission: Readmission to the program will be based upon academic performance and adherence to program policies regarding attendance and professionalism, and will be contingent upon available laboratory/clinical space. Readmission is not guaranteed. Students who have been dropped from the program must submit a written application

ASSOCIATE OF APPLIED SCIENCE DEGREE (118)

Dental Hygiene cont'd

for readmission to the Program Head no later than January 1 for the following fall semester, no later than April 1 for the following spring semester, and no later than August 1 for the following summer session. The Program Head will present the readmission request to the faculty for consideration. Students applying for readmission will be notified of their admission status in writing.

Students readmitted to the program are eligible to repeat a course only once, and a Dental Hygiene course must be repeated during the semester in which it is offered. The student may not continue with other required Dental Hygiene courses until the course is repeated. Students earning a grade of "F" in any Dental Hygiene course will be dropped from the program and are ineligible for readmission unless there are extenuating circumstances (serious illness, death of an immediate family member).

Curriculum and Other Requirements

General Education Core Courses		Credits
BIO 141-142[4,*]	Human Anatomy & Physiology I-II	8
ENG 111*	College Composition I	3
NAS 185*	Microbiology	4
PSY 230	Developmental Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
E[3]	Humanities/Fine Arts Elective	3

Dental Hygiene Courses

DNH 111	Oral Anatomy	2
DNH 115	Histology/Head and Neck Anatomy	3
DNH 120	Management of Emergencies	2
DNH 130	Oral Radiography for Dental Hygienist	2
DNH 141-142*	Dental Hygiene I-II	10
DNH 145*	General and Oral Pathology	2
DNH 146	Periodontics for the Dental Hygienist	2
DNH 150[1]	Nutrition	2
DNH 190*	Coordinated Practice	3
DNH 214[2]	Practical Materials for Dental Hygiene	2
DNH 216	Pharmacology	2
DNH 226-227[2,*]	Public Health Dental Hygiene I-II	3
DNH 230	Office Practice and Ethics	1
DNH 235*	Manage of Dental Pain & Anxiety	2
DNH 244-245*	Dental Hygiene IV-V	10
Total Minimum Credits for Degree		**70**

[1] Health and wellness are emphasized throughout the dental hygiene program, but specifically in DNH 150 Nutrition.
[2] Includes instruction in fundamental mathematical skills.
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." If planning on transfer, contact the four-year institution for requirements.
[4] These courses are prerequisites for program admission. Must be successfully completed by the end of Spring 2011.
** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year/Fall	Spring	Summer
DNH 111	DNH 142	DNH 150
DNH 115	DNH 145	DNH 190
DNH 120	DNH 146	ENG 111
DNH 130	DNH 216	
DNH 141	NAS 185	
SDV 100 or SDV 108		

Second Year/Fall	Spring
DNH 214	DNH 227
DNH 226	DNH 230
DNH 235	DNH 245
DNH 244	Humanities/Fine Arts
PSY 230	

Note: *BIO 141 and BIO 142 must be completed by the spring semester prior to program entry. Support courses (non-DNH courses) may be taken prior to entry. BIO 141, BIO 142, and NAS 185 must be repeated if they were completed more than five years prior to the date of admission into the program.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (636)

Early Childhood Development

Purpose: This curriculum is designed to enable graduates to qualify as directors, assistant directors, teachers, assistant teachers, or as classroom aides in programs for young children. The curriculum has been established to provide competency in areas documented by Virginia's Competencies for Early Childhood Professionals: health, safety and nutrition, understanding child growth and development, appropriate child observation and assessment, partnering with families and community, learning environment, effective interactions, program management, teacher qualifications and professional development. Students who are interested in working with special needs children should consult with the Early Childhood Development faculty.

Occupational Objectives: Positions in independent childcare centers and kindergartens, family day care homes, nursery schools, foster care providers, hospital centers, centers for children with special needs, residential childcare facilities and industry associated centers. In addition, this program qualifies graduates for positions as elementary school or head start teacher assistants.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college, including evidence that the applicant possesses the intellectual, emotional, and physical capacities and the interest and aptitude necessary for relating successfully to young children.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses. (Students who plan to transfer to a four-year college are urged to consult the Early Childhood Development faculty members for electives and additional information.)

Program Requirements: Admission to CHD 165 is selective and must be approved by the program head. Eligibility is based on the following criteria: a 2.0 grade point average, completion of course prerequisites (CHD 120, CHD 215) documentation of a negative tuberculosis screening, and any relevant internship site requirements. Successful completion of CHD 165 is required to enroll in CHD 265. The deadline for applications will be May 1 of each year. If May 1 falls on a weekend, the deadline will be the next business day. Information on the requirements for this process is available in the School of Liberal Arts and Social Sciences office and from the program head. Students not accepted into the program will have the option to reapply the following year.

Curriculum Completion Guidelines: Students who receive a final grade lower than "C" in any of the courses in the Early Childhood Development sequence must be approved by the program faculty to continue the major in Early Childhood Development prior to repeating the course. Each student is responsible for transportation to and from field sites used for laboratory experience.

ASSOCIATE OF APPLIED SCIENCE DEGREE (636)

Early Childhood Development cont'd

Curriculum and Other Requirements

General Education Core Courses **Credits**

CST 100 ..... Public Speaking 3
ENG 111-112 .. College Composition I-II 6
MTH 151 ..... Math for Liberal Arts or lab science 3
PSY 235 ..... Child Psychology 3
SDV 100 ..... College Success Skills (or SDV 101) 1
SOC 215[6] ..... Sociology of the Family (or Social Science Elective) 3
E[7] ..... Humanities and Fine Arts Elective 3

Early Childhood Development and Related Courses

CHD 118 ..... Language Arts for Young Children 3
CHD 119[1,*] ..... Introduction to Reading Methods 3
CHD 120 ..... Intro to Early Childhood Education 3
CHD 145 ..... Teaching Art, Music and Movement to Children 3
CHD 146 ..... Math, Science, and Social Studies for Children 3
CHD 165[2,*] ..... Observation and Participation in Early Childhood/Primary Settings 3
CHD 166 ..... Infant and Toddler Programs 3
CHD 205 ..... Guiding the Behavior of Children 3
CHD 210 ..... Intro to Exceptional Children 3
CHD 215 ..... Models of Early Childhood Education Programs 3
CHD 216 ..... Early Childhood Programs, Schools and Social Change 3
CHD 265[3,*] ..... Adv Observation & Participation in Early Childhood/Primary Settings 3
CHD 270 ..... Administration of Early Childhood Programs 3
CHD 298[4,*] ..... Project in Portfolio Development 1
HLT 105[5] ..... Cardiopulmonary Resuscitation (or HLT 106) 1
HLT 135 ..... Child, Health and Nutrition (or EDU 235) 3

Total Minimum Credits for Degree 66

[1] May be taken only after completing CHD 118.

[2] May be taken only after completing CHD 120, CHD 215 or with departmental approval.

[3] May be taken only after completing CHD 120, CHD 215, CHD 165 or with departmental approval.

[4] May be taken only after completing CHD 120, 145, 210, 215, 166, 216, 118, 146, 165 and 270. May be taken concurrently with CHD 119, 205, 265. This is considered a capstone course and will require cumulative work from previous courses.

[5] The requirement for first aid training may be met by a Red Cross Certificate in basic first aid and infant/child and adult CPR.

[6] SOC 215 is preferred. If a social science elective is used, any 100 or 200 level social science elective may be used. For students wishing to transfer to a four-year institution, the student should contact the four-year institution and select the Social Science courses from the "Approved List of Transfer Courses" that will satisfy the Social Science requirements.

[7] Any three credit 100 or 200 level ART, ENG, HUM, MUS, PHI, or REL elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132, 136, FRE 201, FRE 202, SPA 201, or SPA 202 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

***Note:** Students planning to transfer should consult with program head before choosing electives.*

Suggested Schedule

First Year	**Spring**
Fall	CHD 166
CHD 120	CHD 215
CHD 145	CHD 216
CHD 210	ENG 112
ENG 111	HLT 105/106
PSY 235	HLT 135
SDV 100 or 101	

Second Year	**Spring**
Fall	CHD 119
CHD 118	CHD 205
CHD 146	CHD 265
CHD 165	CHD 298
CHD 270	CST 100
MTH 151	SOC 215
Humanities/Fine Arts	

CAREER STUDIES CERTIFICATE (221-636-04)

Early Childhood Development

Purpose: The career studies certificate program in Early Childhood Development is an introduction to the field, designed to provide entry-level competencies documented by Virginia's Competencies for Early Childhood Professionals. These competencies include health, safety and nutrition, understanding child growth and development, appropriate child observation and assessment, partnering with families and community, learning environment, effective interactions, program management, teacher qualifications and professional development curriculum.

This certificate also meets the requirements for the Virginia Early Childhood Development Certificate (VECD); an alternative credential to the CDA designed to meet Head Start credentialing requirements. Students wishing to earn the VECD should speak with the Program Head in Early Childhood Development, as additional components and documentation are required, including completion of CHD 167: Resource File. CHD 167 will be offered as a spring semester course.

Occupational Objectives: Graduates will be qualified for positions in childcare centers, family day care homes, nursery schools, foster care providers, hospital centers, centers for children with special needs, residential childcare facilities and industry associated centers.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college, including evidence that the applicant possesses the intellectual, emotional, and physical capacities and the interest and aptitude necessary for relating successfully to young children.

All required courses also apply towards the AAS degree in Early Childhood Development.

Curriculum Completion Guidelines: Students who receive a final grade lower than "C" in any of the courses in the Early Childhood Development sequence must be approved by the program head to continue the major in Early Childhood Development prior to repeating the course. Each student is responsible for transportation to and from field sites used for laboratory experience.

Curriculum and Other Requirements

General Education Core Courses

		Credits
SDV 100	College Success Skills (or SDV 101)	1

Early Childhood Development and Related Courses

CHD 120	Intro to Early Childhood Education	3
CHD 145	Teaching Art, Music and Movement to Children	3
CHD 165	Observation and Participation	3
CHD 205	Guiding the Behavior of Children	3
HLT 135	Child, Health and Nutrition (or EDU 235)	3
Total Minimum Credits for Certificate		**16**

Suggested Schedule

Fall	Spring
CHD 120	CHD 205
CHD 145	HLT 135
CHD 165	SDV 100 or 101

ASSOCIATE OF APPLIED SCIENCE DEGREE (731)

Electrical Engineering Technology

Purpose: This program is designed to prepare graduates for a broad range of electrical engineering technology careers. The curriculum provides the theoretical foundation and hands-on practice in a wide range of subjects, including electronic circuits and devices, computer hardware and software, power and machines, programmable logic controllers, computer networks, and telecommunications.

Occupational Objectives: Electrical Engineering Technicians assist engineers and other personnel to identify and solve problems with electrical equipment and systems found in industrial or commercial plants and laboratories. Job tasks may include:

- Evaluating and documenting performance of developmental parts or systems.
  Electrical and electronic component assembly.
  Using hand tools and measuring instruments.
- Calibration, maintenance, troubleshooting and repair of electrical instruments or testing equipment.
- Preparing technical reports and documents.
  Analyzing and interpreting test information to resolve design-related problems.

Admission Requirements: Applicants must meet the general requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place above Algebra II (MTH 4) and into College-level mathematics (MTH 115-116), on the placement test will be required to take developmental courses.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Electrical Engineering Technology may earn a baccalaureate degree (BS) in Engineering Technology on the Virginia Western Community College campus in Roanoke.

Curriculum and Other Requirements

General Education Core Courses **Credits**

CST 100	Principles of Public Speaking (or CST 105)	3
ENG 111*	College Composition I	3
HLT/PED[4]	Health or Physical Education	2
MTH 115-116*	Technical Mathematics I-II	6
PHY 201*	General College Physics I	4
SDV 101	Orientation to Engineering and Engineering Technology	1
E[1]	Humanities/Fine Arts Elective	3
E[2]	Social Science Elective	3

Electrical Engineering Technology & related Courses

EGR 216*	Computer Methods in Engineering and Technology	3
ELE 147*	Electrical Power & Control Systems	3
ELE 239*	Programmable Controllers	3
ETR 113-114*	DC and AC Fundamentals I-II	8
ETR 250*	Solid State Circuits	4
ETR 280*	Introduction to Digital Logic Circuits and Computers	4
ETR 285	Fundamentals of Microcomputer Repair	4
TEL 150-151*	Internetworking I-II	8
E[3]	Technical Electives	3
Total Minimum Credits for Degree		**65**

[1] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[2] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Students should choose from DRF 201, GIS 200, PHY 202, or TEL 250.

[4] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (731)

Electrical Engineering Technology cont'd

Suggested Schedule

First Year

Fall
EGR 216
ENG 111
ETR 113
MTH 115
SDV 101
TEL 150

Spring
ELE 147
ETR 114
MTH 116
TEL 151
Humanities/Fine Arts

Second Year

Fall
ETR 250
ETR 280
PHY 201
Social Science Elective

Spring
CST 100 or CST 105
ELE 239
ETR 285
HLT/PED
Technical Elective

CAREER STUDIES CERTIFICATE (221-706-01)

Electrical Wiring

Purpose: This Career Studies Certificate in Electrical Wiring is designed to meet the 240 clock hours of formal training necessary for certification as a Journeyman Electrician. In addition to the 240 clock hours of formal instruction, four years of practical experience are required before one can take the Journeyman Exam. This program will give the student the classroom knowledge needed to enter the electrical construction and maintenance field as a helper or apprentice.

Occupational Objectives: Plant electrician, electrician, estimator.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Proficiency in oral and written communication skills and general mathematics is required. To be successful in this program, students must have demonstrated Math competency to be placed above Pre-Algebra. Students not achieving this level will be required to take developmental courses.

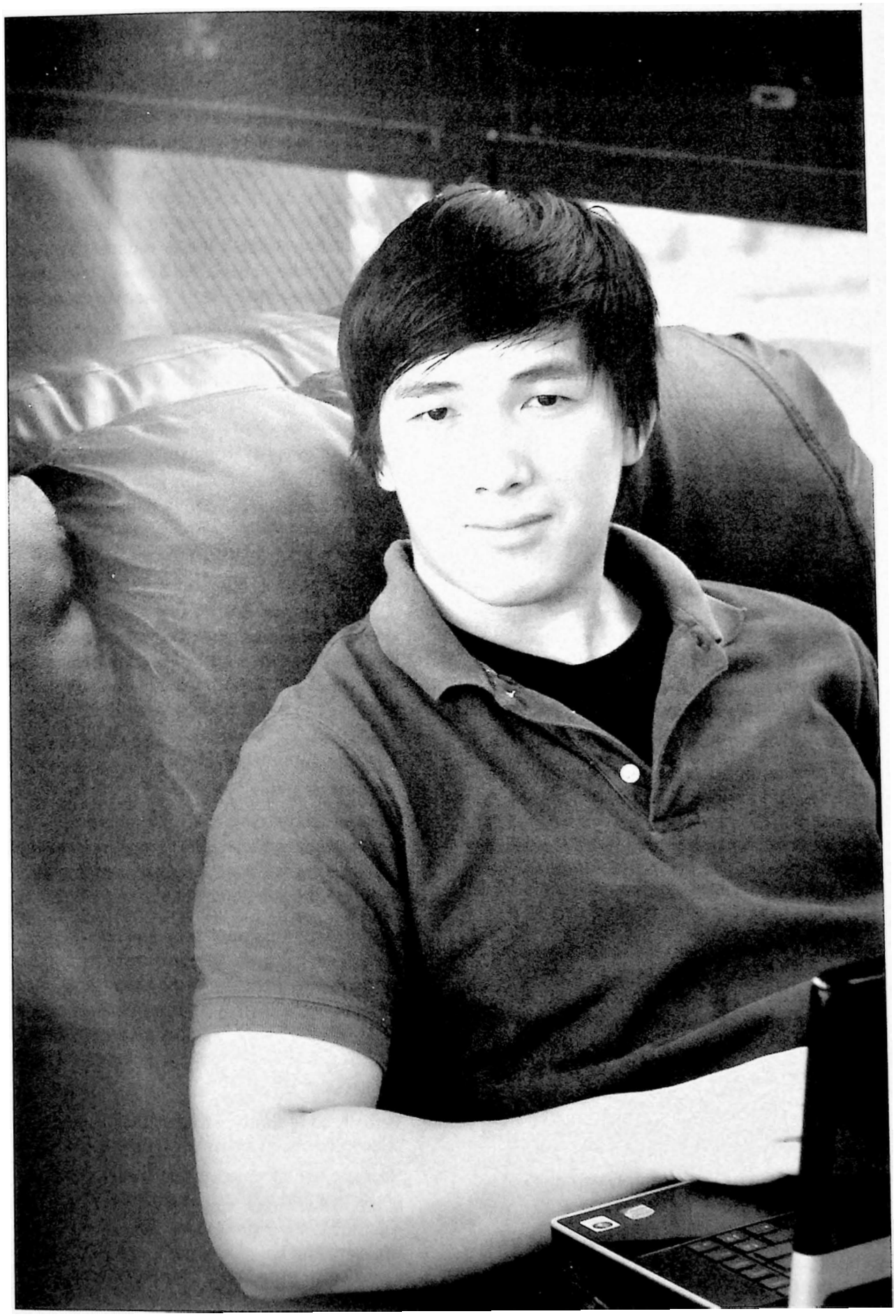
Curriculum and Other Requirements

Electrical Wiring and Other Related Courses		Credits
BLD 111	Blueprint Reading & Building Code	3
ELE 110	Home Electric Power	3
ELE 133-134*	Practical Electricity I-II	6
ELE 138	National Electrical Code	2
SAF 127	Industrial Safety	2
Total Minimum Credits for Certificate		**16**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

Fall	Spring
BLD 111	ELE 110
ELE 133	ELE 134
ELE 138	SAF 127



CAREER STUDIES CERTIFICATE (221-146-06)

Emergency Medical Services - Basic Technician

Purpose: The certificate program in Emergency Medical Services is designed to prepare students for a career as an Emergency Medical Technician-Basic.

Occupational Objective: Employment opportunities include positions with Local Fire and EMS agencies, Occupational Safety Personnel Ambulance Services, first responders or basic rescue providers.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college as well as the requirements stipulated by the Virginia Office of EMS, http://www.vdh.state.va.us/oems/. Developmental courses are required for students with deficiencies in English and mathematics.

Applicants interested in admission to the program must meet the above admission requirements and complete the following process by **June 1**:

1. Submit a college admission application.
2. Contact J. Doran at *jdoran@roanokecountyva.gov* for a Program application that is separate from the College application. This must be submitted 2 weeks prior to the start of the class with requested documentation.
3. Take the COMPASS or ASSET placement test to evaluate reading, writing and mathematical skills..
4. Hold current certification in an Office of Emergency Medical Services approved cardiopulmonary resuscitation (CPR) course at the beginning date of the course or obtain certification within 1 week of starting the course. This certification must also be current at the time of state testing.
5. Have transcripts of previous college courses sent to the college. A score of 61 on the COMPASS reading test is required for first round selection. Should openings still be available, persons who apply or meet requirements after June 1, or score lower than cut score on the reading exam will be considered. Questions regarding admission should be directed to James Doran, RCFRD EMS Training Specialist, (540) 387-6911x230, jdoran@roanokecountyva.gov.

Program Requirements: The enrolled student or certification candidate must comply with the following:

1. Be proficient in reading, writing and speaking the English language in order to clearly communicate with a patient, family or bystander to determine a chief complaint, nature of illness, mechanism of injury or to assess signs and symptoms.
2. Be a minimum of 16 years of age at the beginning date of the certification program. If less than 18 years of age, he or she shall provide the course coordinator with a completed parental permission form with the signature of a parent or guardian verifying approval for enrollment in the course.
3. Have no physical or mental impairment that would render him or her unable to perform all practical skills required for that level of certification including the ability to function and communicate independently and perform appropriate patient care, physical assessments and treatments without the need for an assistant.
4. Hold current certification in an approved course in cardiopulmonary resuscitation (CPR) at the beginning date of the certification program. This certification shall also be current at the time of state testing.
5. May not have been convicted of or found guilty of any crime, offense or regulatory violation, or participated in any other prohibited conduct identified in these regulations.
6. If in a bridge certification program, he or she shall hold current Virginia certification at the EMS First Responder level.
7. Meet other requirements for course enrollment as set by the regional EMS council or local EMS resource, the PCD or the course coordinator, approved by the Office of EMS.

Essential Program Functions: The Emergency Medical Technician must demonstrate competency in handling emergencies utilizing basic life support equipment and skills in accordance with the objectives in the U.S. Department of Transportation National Standard Curriculum for EMT to include having the ability to:

- Verbally communicate in person, via telephone and telecommunications using the English language;

  Hear spoken information from co-workers, patients, physicians and dispatchers and sounds common to the emergency scene;

  Lift, carry and balance a minimum of 125 pounds equally distributed (250 pounds with assistance) a height of 33 inches, a distance of 10 feet; read

CAREER STUDIES CERTIFICATE (221-146-06)

Emergency Medical Services - Basic Technician cont'd

and comprehend written materials under stressful conditions;

Document, physically in writing, patient information in prescribed format;

Demonstrate manual dexterity and fine motor skills, with ability to perform all tasks related to quality patient care in a safe manner;

Bend, stoop, crawl and walk on uneven surfaces;

Meet minimum vision requirements to operate a motor vehicle within the state.

Despite the foregoing, a qualified person with a disability who can perform these essential functions with reasonable accommodation will be considered for the program.

Clinical and Behavioral Requirements: Selected and supervised student experience is required by the program and will be accomplished at clinical internship sites at regional health care facilities and/or field internships within local EMS agencies. The student is responsible for transportation to these facilities, as well as to any scheduled field trips. Program preceptors will observe and evaluate the student's suitability for the profession. If the student does not exhibit those documented behaviors required of the EMS professional, the student may be asked to withdraw from the program.

Student Responsibilities: After Acceptance into the Program Applicants accepted to the program may be required to submit a health certificate signed by a licensed physician, physician's assistant or RNP and other health related documentation as required by the program. This should include but is not limited to documentation of measles, mumps, Rubella (MMR) and chicken pox exposure or inoculations; documentation of Hepatitis B inoculation; Tuberculosis testing; and overall general health of the applicant. Drug and alcohol screening is required prior to rotating through certain clinical sites. Positive screenings will jeopardize continuation in the program. Costs of the tests are the responsibility of the student.

The purchase of items such as uniforms, liability insurance, self-healthcare insurance and other accessories is the financial responsibility of the individual student. Students who elect to take support courses recommended by the Program Director prior to formal acceptance into the program will find this activity to be advantageous in subsequent course scheduling.

Retention Policy: Students must make a "C" or better in all program core courses- EMS 112, 113, and 120. Any student receiving a grade less than "C" will not be allowed to progress from EMS 112 to EMS 113 and will not be allowed to participate in certification examination.

That course shall be remediated once within an 18 month period, with a written contract drafted containing the requirements of the remediation. Remediated courses must be completed with a final grade of "C" or better. Dismissal from the program shall result if the student does not meet the requirements of the contract.

EMT Intermediate Training: Students who successfully completed the EMS-Basic Technician program may be eligible for EMT-Intermediate Training programs. In Roanoke, contact James Doran, RCFRD EMS Training Specialist, (540) 387-6911 x230. In Franklin County, contact Michael Pruitt, Training Retention and Recruitment Coordinator, (540) 483-3091, *MichaelPruitt@franklincountyva.org*.

Curriculum and Other Requirements

General Education Core Courses		Credits
BIO 101*	General Biology	4
CST 100	Principles of Public Speaking (or CST 105)	3
ENG 111*	College Composition I	3
PSY 200	Principles of Psychology	3
SDV 100	College Success Skills (or SDV 108)	1

Emergency Medical Services Courses

EMS 112	Emergency Medical Tech – Basic I	4
EMS 113[1,*]	Emergency Medical Tech – Basic II	3
EMS 120	Emergency Medical Technician – Basic Clinical	1
Total Minimum Credits for Certificate		**22**

1 EMS 112 is a prerequisite for EMS 113.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

Fall	Spring
BIO 101	CST 100
EMS 112	EMS 113
ENG 111	EMS 120
SDV 100 or SDV 108	PSY 200

CAREER STUDIES CERTIFICATE (221-820-02)

Energy Management Systems Introduction

Purpose: The Energy Management Systems Introductions Career Studies certificate is designed for individuals who are interested in the foundation skills. The certificate includes an introduction of the fundamentals and safety requirements for alternative energy systems.

Occupational Objectives: Entry level opportunities as Solar Photovoltaic Installer, Wind Turbine Installer/ Service Technician helpers

Admission Requirements: Applicants must meet the general requirements for admission to the college. To be successful in this program, students who do not place above Pre-Algebra (MTH 9) and into Algebra (MTH 3) or higher on the placement test will be required to take developmental courses.

Curriculum and Other Requirements

Energy Management and Other Related Courses	Credits
ELE 130*.....Electricity	4
ELE 176** .....Intro to Alternative Energy	3
SAF 127.....Industrial Safety	2
Total Minimum Credits for Certificate	**9**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

*** This course has a co-requisite. Co-requisites for all courses are listed in the course description of the catalog.*

Suggested Schedule

Fall

ELE 130
ELE 176
SAF 127

CAREER STUDIES CERTIFICATE (221-820-03)

Energy Management Systems Technician

Purpose: The Energy Management Systems Technician Career Studies Certificate is designed for individuals who are interested in alternative energy. This program begins with the introduction of the fundamentals and safety requirements for alternative energy systems and then proceeds with the application and study of wind turbines as well as performs system exercises and maintenance on photovoltaic energy systems. The certificate is designed to enhance the awareness of different designs, layouts, wirings, and installations for alternative energy systems.

Occupational Objectives: Solar Photovoltaic Installer, Wind Turbine Installer/Service Technician helper.

Admission Requirements: Applicants must meet the general requirements for admission to the college. To be successful in this program, students who do not place above Pre-Algebra (MTH 9) and into Algebra I (MTH 3) or higher on the placement test will be required to take developmental courses.

Curriculum and Other Requirements

Energy Management and Other Related Courses	Credits
ELE 130*…….Electricity	4
ELE 176**…...Intro to Alternative Energy	3
SAF 127……..Industrial Safety	2
BLD 110 …….Intro to Construction	3
BLD 111……..Blueprint Reading and Bldg Code	3
ENE 100 *…...Conventional & Alt Energy Apps	4
Total Minimum Credits for Certificate	**19**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

*** This course has a co-requisite. Co-requisites for all courses are listed in the course description of the catalog.*

Suggested Schedule

Fall	Spring
ELE 130	BLD 110
ELE 176	BLD 111
SAF 127	ENE 100

CAREER STUDIES CERTIFICATE (221-820-04)

Energy Management Systems Installer

Purpose: The Energy Management Systems Technology Installer is designed for those individuals wanting to get into the alternative energy technology industry. Emphasis of the program is in mechanical design, construction of refrigeration and air conditioning equipment, and theoretical concepts.

Occupational Objectives: Students will gain the knowledge to obtain entry level positions as Solar Photovoltaic Installer, Wind Turbine Installer/Service Technicians. The coursework prepares students for further study in energy management systems and advanced technology. Upon successful completion of a specific concentration, students will be prepared for the corresponding North American Board of Certified Energy Practitioners (NABCEP) installer certification exam.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Students who do not place above Algebra II (MTH 4) and into college-level mathematics (MTH 115) on the placement test will be required to take developmental courses. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements

Energy Management and Other Related Courses **Credits**

ELE 130*.....Electricity	4
ELE 176 * .....Intro to Alternative Energy	3
SAF 127.....Industrial Safety	2
BLD 110 .....Intro to Construction	3
BLD 111.....Blueprint Reading and Bldg Code	3
MEC 155.....Mechanisms	2
MTH 115 .....Technical Mathematics	3
E[1] .....Energy Mgmt Tech Concentration	7
Total Minimum Credits for Certificate	**27**

[1] An Energy Management Concentration must be selected from the following options:

• Photovoltaic Installation must take

- ELE 147Electrical & Power Systems

- ELE 177Photovoltaic Energy Systems

-or-

• Wind Energy Installation must take

- ELE 147Electrical & Power Systems

- ELE 178 Wind Turbine Technology

-or-

• Solar and Geo Thermal Installation must take

- ENE 105 Solar Thermal Active & Passive Technology

- MEC 205 Piping and Auxiliary Systems

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

*** This course has a co-requisite. Co-requisites for all courses are listed in the course description of the catalog.*

Suggested Schedule

First Year

Fall

ELE 130
ELE 176
MTH115
SAF 127

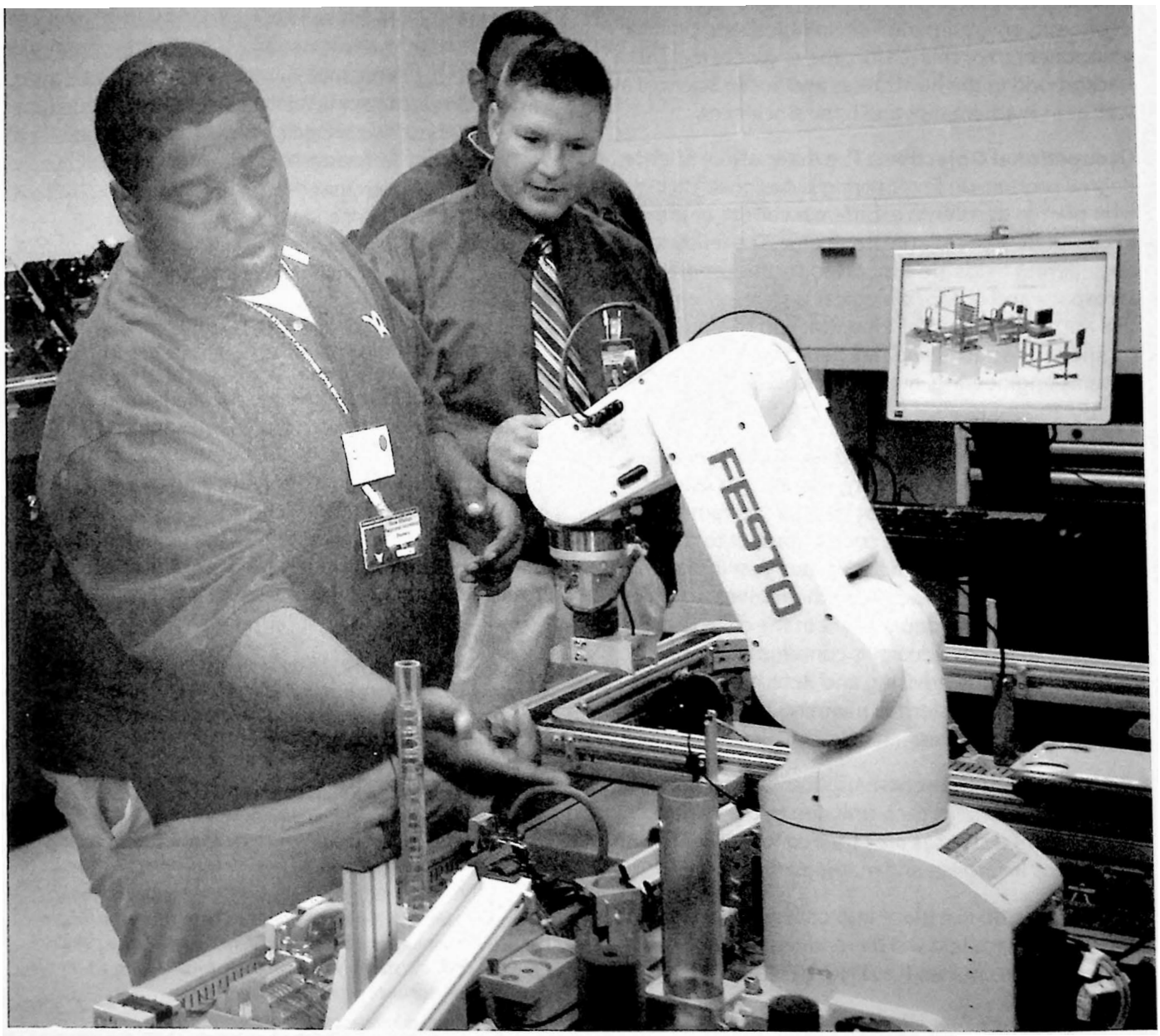
Spring

BLD 110
BLD 111
MEC 155

Second Year

Fall

ELE 147 or ENE 105
ELE 177 or ELE 178 or MEC 205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ASSOCIATE OF SCIENCE DEGREE (831)

Engineering

Purpose: Engineers are the planners and designers of the technological systems that are the backbone of our modern society. They apply principles of science and mathematics to meet the needs or solve the problems of humankind. These problems typically are multifaceted and involve the interplay of technological, economic, environmental, sociological, and political components. For this reason, the engineer requires a background in the humanities and Social Sciences as well as in mathematics and natural sciences.

Occupational Objectives: The Associate of Science degree program in Engineering is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree. The following engineering fields are supported by this program: aerospace and ocean, biological systems, chemical, civil and environmental, electrical and computer, engineering science and mechanics, industrial and systems engineering, material science, mechanical, mining and minerals.

In order to prepare for junior class standing at a four-year college or university, the student usually must complete a program at Virginia Western that is comparable in length and course content to the first two years of the program at the four-year institution. Students are urged to acquaint themselves with the requirements of the department in the college or university to which transfer is contemplated and also to consult with the Advising and Retention Services office of Virginia Western in planning their program and selecting electives.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into the pre-requisite course for calculus (MTH 166) on the placement test will be required to take developmental courses. Students who place into college-level classes who have completed Pre-calculus and Trigonometry in high school with a grade of "A" within the past three years have the option to complete a challenge exam to determine their

Curriculum and Other Requirements

General Education Core Courses

		Credits
CHM 111[5,*]	College Chemistry I	4
CST 100	Principles of Public Speaking	3
ENG 111-112*	College Composition I-II	6
HLT/PED[1]	Health or Physical Education	1
MTH 175-176*	Calculus of One Variable I-II	6
MTH 177*	Introductory Linear Algebra	2
MTH 178*	Topics in Analytic Geometry	2
MTH 277*	Vector Calculus	4
MTH 291*	Differential Equations	3
PHY 241-242*	University Physics I-II	8
SDV 101	Orientation to Engineering and Engineering Technology	1
E[3]	Humanities/Fine Arts Elective	3
E[2]	Social Science Elective	6

Engineering Courses

EGR 120*	Introduction to Engineering	2
EGR 124**	Introduction to Engineering and Engineering Methods	3
EGR 126**	Computer Programming for Engineers [C++]	3
EGR 140*	Engineering Mechanics–Statics	3
E[4]	Engineering/Science Elective	6
Total Minimum Credits for Degree		**66**

[1] Two credits of Health (HLT), Physical Education (PED) or Student Development (SDV) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

[4] The following are suggested Engineering/Science electives for Engineering majors: Mechanical Engineering: EGR 245-246, Civil Engineering: EGR 206/246, Electrical Engineering: EGR 206/251-255, MTH 285, or MTH 287; Computer Science: MTH 287.

[5] Chemical engineering majors should take CHM 112 as one of the Engineering/Science electives.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

***This course has a co-requisite. Co-requisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF SCIENCE DEGREE (831)

Engineering cont'd

readiness for MTH 175. A passing score on the challenge exam or successful completion of MTH 166 is required before a student can enroll in MTH 175.

Program Requirements: Based on an articulation agreement with Virginia Tech, students who have completed the Engineering AS degree with a cumulative GPA of 3.0 or greater are guaranteed admission to the general engineering program at Virginia Tech. It is strongly recommended that students take ENG 111 in the first semester of coursework.

Suggested Schedule

First Year	
Fall	**Spring**
CHM 111	EGR 120
EGR 124	EGR 126
ENG 111	EGR 140
HLT/PED	ENG 112
MTH 175	MTH 176
MTH 177	MTH 178
SDV 101	

Second Year	
Fall	**Spring**
MTH 277	CST 100
PHY 241	MTH 291
Engin/Science Elective	PHY 242
Humanities/Fine Arts	Engin/Science Elective
Social Science Elective	Social Science Elective

ASSOCIATE OF SCIENCE DEGREE (831)

Engineering cont'd

Purpose: The **Specialization in Computer Science** is the study of the theoretical foundations of information and computation, and of practical techniques for implementation and application in computer systems. It is often described as a systematic study of algorithmic processes that create, describe, and transform information. All types of information from business applications to data storage, gaming, web development, and programming are covered in the field. A very strong mathematical foundation is required.

Occupational Objectives: The Specialization in Compuber Science is designed for students who plan to transfer to a four-year college and major in computer science or information technology. Requirements are not the same at every school. Students should speak with their advisor and the four-year college of interest in order to work out the specific requirements that need to be met. Students will need at least a 3.0 GPA and must complete all requirments in the specialization to be considered at most institutions.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into the pre-requisite course for calculus (MTH 163 or 166) on the placement test will be required to take developmental courses. Students who place into college-level classes and have not completed Pre-calculus or Trigonometry in high school with a grade of "A" within the past three years or who have not completed a college level Pre-calculus or Pre-calculus with Trigonometry (or equivalent) course will be required to take MTH 163 or MTH 166.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Compurter Science Specialization (01)
Curriculum and Other Requirements
General Education Core Courses **Credits**

CST 100	Principles of Public Speaking	3
ENG 111-112*	College Composition I-II	6
HLT/PED[1]	Health or Physical Education	1
MTH 175-176*	Calculus of One Variable I-II	6
MTH 177**	Introductory Linear Algebra	2
MTH 178**	Topics in Analytic Geometry	2
MTH 277*	Vector Calculus	4
MTH 287*	Mathematical Structures	3
MTH 291*	Differential Equations	3
PHY 241-242*	University Physics I-II (or CHM 111-112)	8
SDV 101	Orientation to Engineering	1
E[3]	Humanities/Fine Arts Elective	3
E[2]	Social Science Elective	6

Engineering and Computer Science Courses

CSC 201-202*	Computer Science I-II	8
CSC 205	Computer Organization	4
EGR 120*	Introduction to Engineering	2
EGR 124**	Introduction to Engineering and Engineering Methods	3
E[4]	Engineering/Science Elective	3

Total Minimum Credits for Degree 68

[1] Two credits of Health (HLT), Physical Education (PED) or Student Development (SDV) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

[4] Engineering/Science Elective - students transferring to Virginia Tech should take CHM 111 or PHY 241 (whichever they did not choose above). Those transferring to other four year institutions should take EGR 126 or contact their advisor for approval on choice for this elective.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

***This course has a co-requisite. Co-requisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF SCIENCE DEGREE (831)

Engineering cont'd

Suggested Schedule

First Year/Fall	Spring	Second Year/Fall	Spring
CSC 201	CSC 202	CSC 205	CST 100
EGR 124	EGR 120	MTH 277	HLT/PED
ENG 111	ENG 112	PHY 241 or CHM 111	PHY 242 or CHM 112
MTH 175	MTH 176	Humanities/Fine Arts	Engineering Elective
MTH 177	MTH 178	Social Science Elective	Social Science Elective
SDV 101	MTH 287		

CAREER STUDIES CERTIFICATE (221-831-01)

Engineering

Purpose: Engineers are the planners and designers of the technological systems that are the backbone of our modern society. They apply principles of science and mathematics to meet the needs or solve the problems of humankind. These problems typically are multifaceted and involve the interplay of technological, economic, environmental, sociological, and political components.

Occupational Objectives: The Career Studies Certificate in Engineering is designed for persons want to explore engineering as a potential major. This program allows students to experience the exciting opportunities in engineering and prepare themselves for an associate of science degree in engineering, which is transferable to a four-year college or university to complete a baccalaureate degree.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Students who do not place into MTH 166 on the placement test will be required to take developmental courses. Students who place into MTH 166 who have completed Pre-calculus and Trigonometry in high school with a grade of "A" within the past three years have the option to complete a challenge exam to determine their readiness for MTH 175. A passing score on the challenge exam or successful completion of MTH 166 is required before a student can enroll in MTH 175.

Program Requirements: If a student is interested in completing the entire first year of the Engineering transfer degree, please refer to the Engineering Associate of Science degree for the additional courses to compliment those listed in this career studies (i.e. ENG 111, etc.). Applicants must also meet the ability to benefit requirements.

Curriculum and Other Requirements

General Education Core Courses		Credits
MTH 175*	Calculus of One Variable I	3
MTH 176*	Calculus of One Variable II	3
MTH 177*	Introductory Linear Algebra	2
MTH 178*	Topics in Analytic Geometry	2

Engineering Courses

EGR 120*	Introduction to Engineering	2
EGR 124**	Introduction to Engineering and Engineering Methods	3
EGR 126**	Computer Programming for Engineers [C++]	3
EGR 140*	Engineering Mechanics–Statics	3
EGR 198	Seminar & Project in Robotics	1
EGR 206**	Engineering Economy	3
EGR 216	Computer Methods in Engin & Tech	3
SDV 101	Orientation to Engineering	1
Total Minimum Credits for Degree		**29**

This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.

***This course has a co-requisite. Co-requisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	EGR 124
EGR 198	MTH 175
EGR 216	MTH 177
	SDV 101

Second Year	Spring
Fall	EGR 126
EGR 120	EGR 140
MTH 176	EGR 206
MTH 178	

CERTIFICATE (196)

Exercise Science and Personal Training

Purpose: This certificate is designed for the student interested in exercise science and/or the fitness industry. Students completing the certificate may wish to transfer to four-year institutions in areas such as athletic training, exercise science, physical education, wellness promotion, or health sciences. Completion of the certificate will provide the foundation for increased employment opportunities, fitness promotion, personal training, or for continued studies working toward a four-year degree. Upon completion of the certificate, students wishing to become Certified Personal Trainers may sit for the national certification exam through the American College of Exercise (ACE).

Occupational Objectives: Qualifies students for positions in commercial fitness clubs, city and county recreation programs, private sector businesses providing on-site fitness, privately-owned personal training businesses, or advancing employment opportunities. Individuals are also prepared to work independently as a personal trainer.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Interested students should have good communication skills and enjoy working with diverse populations of all ages.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Program Requirements: The curriculum can be completed in three semesters or with planning in two semesters and a summer. Several of the courses are offered online to allow for flexibility. Students are encouraged, but not required, to sit for the national certification exam.

Curriculum and Other Requirements

General Education Core Courses		Credits
CST 100	Principles of Public Speaking	3
ENG 111*	College Composition I	3
ITE 115	Intro to Computer Applications and Concepts	3
PSY 220	Intro to Behavior Modification	3

Exercise Science and Related Courses

BIO 100	Basic Human Biology	3
HIM 249	Supervision & Management Practices	3
HLT 100[1]	First Aid, CPR, AED	3
HLT 116	Introduction to Personal Wellness	2
HLT 206[2]	Exercise Science	3
HLT 208	Fitness & Exercise Training (ACE Prep)	3
HLT 240	Consumer Health	3
HLT 290[3]	Coordinated Internship	3
PED 105	Aerobic Dance I	1
PED 106	Aerobic Dance II	1
PED 107	Exercise and Nutrition	2
PED 109	Yoga	1
PED 111	Weight Training	1
E[4]	PED elective	1
Total Minimum Credits for Certificate		**42**

[1] HLT 105 and HLT 106 may be substituted for HLT 100.

[2] It is recommended that students take BIO 100 prior to taking HLT 206.

[3] Internship hours will not exceed 15 hours per week.

[4] Either a 1 or 2 credit PED course may be taken.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
BIO 100
ENG 111
HLT 116
PED 105
PED 107
PED 109
PSY 220

Spring
HIM 249
HLT 100
HLT 206
ITE 115
PED 106
PED 111

Second Year

Fall
CST 100
HLT 208
HLT 240
HLT 290
PED Elective

CAREER STUDIES CERTIFICATE (221-427-51)

Firefighting and Prevention

Purpose: To prepare students for careers or promotion in the fire service.

Occupational Objectives: Training for positions in fire prevention and suppression, fire protection engineering, safety engineering, insurance inspection and investigation, industrial safety, and building inspection.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English. Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Curriculum and Other Requirements

General Education Core Courses **Credits**

ENG 111*	College Composition I	3
ITE 115	Intro Computer Applications and Concepts	3
PSY 200	Principles of Psychology	3

Firefighting and Prevention and Related Courses

EMS 112-113	Emergency Medical Technician I-II	6
FST 100	Principles of Emergency Services	3
FST 111	Fundamentals of Hazardous Materials	3
FST 135	Fire Instructor I	3
FST 140*	Fire Officer I	4

Total Minimum Credits for Certificate 28

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
EMS 112
FST 100
FST 111

Spring
EMS 113
FST 135
ITE 115

Second Year

Fall
ENG 111
FST 140
PSY 200

CERTIFICATE (695)

General Education

Purpose: The General Education Certificate is designed for students who plan to transfer to a four-year college or university following their studies at Virginia Western. This curriculum provides students with a strong foundation in the general education core competency areas of Communication (oral and written), Critical Thinking, Cultural and Social Understanding, Information Literacy, Personal Development, Quantitative Reasoning, and Scientific Reasoning. The General Education Certificate also provides students with evidence that they have made significant progress toward completing an associate's degree, which gives them a competitive advantage in transferring to a four-year institution.

Occupational Objective: To prepare students for transfer to a four-year college or university.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses **are** required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

Suggested Schedule

Fall	Spring
ENG 111	ENG 112
HIS 121 or HIS 111	HIS 122 or HIS 112
MTH 151 or MTH 163	Humanities/Fine Arts
SDV 100	Lab Science Elective
Humanities/Fine Arts	Social Science Elective
Lab Science Elective	

Curriculum and Other Requirements

General Education Core Courses		Credits
ENG 111-112[3,*]	College Composition I-II	6
HIS 121-122[3,4]	U. S. History I (or HIS 111-112)	6
MTH 151[3,4,*]	Mathematics for the Liberal Arts I (or MTH 163 or MTH 157)	3
SDV 100[3]	College Success Skills	1
E[1,3,4]	Humanities/Fine Arts Elective	6
E[2,3,4]	Laboratory Science Sequence	8
E[5]	Social Science Elective	3
Total Minimum Credits for Certificate		**33**

[1] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

[2] Natural Science elective must include a two-semester sequence of BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202. If planning on transfer, contact four-year institution for requirements.

[3] Meets VCCS Core Competency Requirements in the following areas: - Communication (ENG 111, ENG 112) - Critical Thinking (ENG 111, ENG 112, Laboratory Science, MTH 151) - Cultural and Social Understanding (HIS 121, HIS 122) - Information Literacy (ENG 111, ENG 112) - Personal Development (SDV 100) - Quantitative Reasoning (MTH 151) - Scientific Reasoning (Laboratory Science)

[4] Meets SACS General Education Requirements of 15 credit hours, at least one course in each of the three following areas:

- *Humanities/Fine Arts elective*
- *Social/Behavioral Sciences (HIS 121, HIS 122)*
- *Math/Natural Sciences (MTH 151 and Laboratory Science electives)*

[5] Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF SCIENCE (699)

General Studies

Purpose: The curriculum is specifically designed for students who want to transfer to a four-year college or university. For students who are uncertain about their vocational or educational goals, this curriculum offers sufficient flexibility so that students may take courses that are accepted in most four-year colleges and universities in a wide number of baccalaureate degree programs. It also provides greater opportunity than that offered in other college-transfer programs for the student to take courses that emphasize areas of academic strength and interest. Students are urged to acquaint themselves with the requirements of the major department in the college or university to which transfer is contemplated and further to consult with their faculty advisors or counselors at Virginia Western in planning their programs and selecting their electives. In order to prepare for junior-class standing at a four-year college or university, the student usually must complete a program of study at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

Occupational Objective: To prepare students for transfer to a four-year college or university

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

Curriculum and Other Requirements
General Education Core Courses

		Credits
CST 100	Principles of Public Speaking (or CST 105)	3
ENG 111-112[4,*]	College Composition I-II	6
ENG 241-242[5,*]	Survey of American Literature I-II (or ENG 243-244)	6
HIS 111-112[6]	History of World Civilization I-II (or HIS 121-122)	6
HLT/PED[8]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 151[2,*]	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152[2,*]	Mathematics for the Liberal Arts II (or MTH 157 or MTH 271)	3
SDV 100	College Success Skills (or SDV 108)	1
E[1]	Social Science Electives	6
E[3]	Laboratory Science Sequence	8
E[4]	Transfer Electives	9
E[7]	Humanities/Fine Arts Electives	6
Total Minimum Credits for Degree		**62**

[1] Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[2] The completion of a two-semester sequence of MTH 151-152, MTH 151-157 or MTH 163-271 is strongly recommended. If planning on transfer, contact four-year institution for requirements. If planning on transfer, contact four-year institution for requirements.

[3] Natural Science elective must include a two-semester sequence of BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202. If planning on transfer, contact four-year institution for requirements.

[4] Electives must be selected from the "Approved List of Transfer Courses." A two-semester sequence of the same course is recommended for transfer to most four-year institutions.

[5] A two-semester sequence of ENG 241-242 or ENG 243-244 is recommended for transfer to most four-year institutions. Contact four-year institution for requirements.

[6] A two-semester sequence of HIS 111-112 or HIS 121-122 is strongly recommended. If planning on transfer, contact four-year institution for requirements.

[7] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

ASSOCIATE OF SCIENCE (699)

General Studies cont'd

[s] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

**This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
ENG 111
ITE 115
MTH 151 or MTH 163
SDV 100
Social Science Elective
Lab Science Elective

Spring
ENG 112
MTH 152 or MTH 157 or MTH 271
Social Science Elective
Lab Science Elective
Transfer Elective

Second Year

Fall
CST 100 or CST 105
ENG 241 or ENG 243
HIS 111 or HIS 121
Humanities/Fine Arts
Transfer Elective

Spring
ENG 242 or ENG 244
HIS 112 or HIS 122
HLT/PED
Humanities/Fine Arts
Transfer Elective

CERTIFICATE (719)

Geographical Information Systems

Purpose: This program is designed to prepare students for entry-level positions in technologies using Geographic Information Systems (GIS) or to expand the knowledge and skills of individuals presently employed in these fields. The use of current ArcGIS® software is emphasized along with exposure to AutoCAD®. This program also provides an excellent foundation for continued study of GIS at the university and four year college level.

Occupational Objectives: GIS technician

Admission Requirements: Applicants must meet the general requirements for admission to the college. To be successful in this program, students must have demonstrated Math and English competency to be placed above Algebra I and into English 111. Students not achieving this level will be required to take developmental courses or receive departmental approval.

Program Requirements: To be successful in this program, students must possess basic computer literacy to include keyboard and mouse usage and file management. It is strongly recommended that students take ENG 111 in the first year of coursework.

Curriculum and Other Requirements

General Education Core Courses

		Credits
ENG 111*	College Composition I	3
SDV 101	Orientation to Engineering and Engineering Technology	1
E[1]	Mathematics Electives	3

GIS and Related Courses

DRF 201-202*	Computer Aided Drafting and Design I-II	6
EGR 216*	Computer Methods in Engineering and Technology	3
GEO 200	Introduction to Physical Geography	3
GIS 200-201*	Geographical Information Systems I-II	6
GIS 205**	GIS 3-Dimensional Analysis	3
GIS 210**	Understanding Geographic Data	3
Total Minimum Credits for Certificate		**31**

[1] Use MTH 115, MTH 120, MTH 163, or MTH 166. See advisor for limitations.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

*** This course has a co-requisite. Co-requisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	DRF 202
EGR 216	GEO 200
DRF 201	ENG 111
SDV 101	
Mathematics Elective	

Second Year	Spring
Fall	GIS 201
GIS 200	GIS 205
GIS 210	

CAREER STUDIES CERTIFICATE (221-719-93)

Geographical Information Systems: Career Exploration

Purpose: This program is designed to prepare students for entry-level positions in technologies using Geographic Information Systems (GIS). The use of current ArcGIS® software is emphasized along with exposure to AutoCAD®. This program also provides an excellent foundation for continued study of GIS.

Occupational Objectives: GIS operator

Admission Requirements: Applicants must meet the general requirements for admission to the college. To be successful in this program, students must have demonstrated Math and English competency to be placed above Algebra I and into English 111. Students not achieving this level will be required to take developmental courses or receive departmental approval.

Program Requirements: To be successful in this program, students must possess basic computer literacy to include keyboard and mouse usage and file management.

Curriculum and Other Requirements

GIS and Related Courses		Credits
DRF 201*	Computer Aided Drafting and Design I	3
EGR 216*	Computer Methods in Engineering and Engineering Technology	3
GEO 200	Introduction to Physical Geography	3
GIS 200*	Geographical Information Systems I	3
Total Minimum Credits for Certificate		**12**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

High School Schedule

Note: *Students should complete Algebra I-II and Geometry. Dual-enrolled high school students will not be able to officially enroll in and/or graduate from this program until the end of the last semester of their senior year.*

Junior	Senior
DRF 201	GEO 200
EGR 216	GIS 200

Graduate Schedule

Summer	Fall	Spring
DRF 201	EGR 216 or ITE 115	GEO 200
	GIS 200	

CAREER STUDIES CERTIFICATES

Health Technology

Purpose: Each of the Health Technology Career Studies Certificates is designed to provide students with a course of study that will assist them to prepare for admission to and success in the Virginia Western Health Technology AAS or Certificate restricted admission program of their choice. Graduates will have completed prerequisites and support courses that are required in one of Virginia Western's Associate Degree programs in Dental Hygiene, Nursing, Radiography; or the Certificate in Practical Nursing or Radiation Oncology. Students should be aware that completion of a career studies program **does not** guarantee admission to an Associate Degree or Certificate program.

Students who wish to apply for admission to the distance education programs in either Veterinary Technology, offered by Blue Ridge Community College (BRCC); or Surgical Technology, offered by Piedmont Community (PVCC) **must** apply to either BRCC or PVCC for admission to these programs.

Admission Requirements: Applicants must meet the general requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

All students, regardless of program interest, must hold either a high school diploma or GED. Science and mathematics prerequisites must be completed with a grade of "C" or better.

For Associate Degree programs in Dental Hygiene, and Nursing, students must complete one unit each of high school or college Biology, Chemistry and BIO 141, BIO 142 (Anatomy and Physiology I and II). For the Radiography Associate Degree Program, students must complete two units of high school or college Biology, Chemistry, or Physics.

In addition—

For Certificate programs:

- for students interested in **Practical Nursing:** one unit of high school or college Biology, Algebra I.
- for **Radiation Oncology:** two units of high school or college Biology, Chemistry, or Physics (recommended); Algebra I, Algebra II, and Geometry.

- for students interested in **Dental Hygiene:** Algebra I and Algebra II.
- for students interested in **Nursing:** Algebra I.
- for students interested in **Radiography**: Algebra I and Algebra II.

For application materials and additional program information, please see our Health Technology website at http://www.virginiawestern.edu/ht, for Veterinary Technology visit http://community.brcc.edu/vettech, and for Surgical Technology information visit http://www.pvcc.edu/surgtech.

Curriculum and Other Requirements

All Option - General Education Core Courses Only

Pre-Dental Hygiene Option (221-118-01)

BIO 141*	Human Anatomy and Physiology I	4
BIO 142*	Human Anatomy and Physiology II	4
ENG 111*	English Composition I	3
HLT 143[1]	Medical Terminology I	3
NAS 185*	Microbiology	4
PSY 230	Developmental Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
E[6]	Humanities/Fine Arts Elective	3
Total Credits for Certificate		**25**

Pre-Nursing Option (221-156-02)

BIO 141*	Human Anatomy and Physiology I	4
BIO 142*	Human Anatomy and Physiology II	4
ENG 111*	English Composition I	3
HLT 141[8]	Intro to Medical Terminology	1
ITE 102[3]	Computer & Information Systems	1
NAS 185*	Microbiology	4
PSY 200	Introduction to Psychology	3
PSY 230	Developmental Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
E[6]	Humanities/Fine Arts Elective	3
Total Credits for Certificate		**27**

Pre-Practical Nursing Option (221-157-02)

BIO 101*	General Biology I	4
ENG 111*	College Composition I	3
HLT 106	First Aid and Safety	2
HLT 143[1]	Medical Terminology I	3
PSY 200[7]	Introduction to Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
Total Credits for Certificate		**16**

CAREER STUDIES CERTIFICATE

Health Technology cont'd

Curriculum and Other Requirements	Credits

Pre-Radiography Option (221-172-01)

BIO 141[2,*]	Human Anatomy and Physiology I	4
BIO 142[2,*]	Human Anatomy and Physiology II	4
ENG 111*	English Composition I	3
HLT 143	Medical Terminology I	3
SDV 101	Orientation to Radiography (or SDV 100 or SDV 108)	1
E[6]	Humanities/Fine Arts Elective	3
E[4]	Social Science Elective	3
Total Credits for Certificate		**21**

Pre-Radiation Oncology Option (221-112-01)

BIO 141*	Human Anatomy and Physiology I	4
BIO 142*	Human Anatomy and Physiology II	4
ENG 111[4]	College Composition I	3
HLT 143[1]	Medical Terminology I	3
ITE 102[3]	Computer & Information Systems	1
MTH 163*	Pre-Calculus	3
SDV 100	College Success Skills (or SDV 108)	1
Total Credits for Certificate		**19**

Distance Learning Options

Pre-Surgical Technology Option (221-159-07)

for the Certificate offered by Piedmont Virginia Community College (PVCC)

BIO 141-142*	Anatomy and Physiology I-II	8
ENG 111*	College Composition I	3
HLT 143	Medical Terminology I	3
NAS 185*	Microbiology	4
SDV 100	College Success Skills (or SDV 108)	1
Total Credits for Certificate		**19**

Curriculum and Other Requirements	Credits

Pre-Veterinary Technology Option (221-188-01)

for the AAS degree offered by Blue Ridge Community College (BRCC)

CHM 111*	College Chemistry I	4
ENG 111*	College Composition I	3
HLT/PED	Health or Physical Education	2
SDV 100	College Success Skills (or SDV 108)	1
E[5]	Social Science Elective	3
E[6]	Humanities/Fine Arts Elective	3
Total Credits for Certificate		**16**

[1] Highly recommended for all students. Dental Hygiene, Radiation Oncology and Practical Nursing applicants may substitute a general elective.

[2] NAS 171 and an elective may be substituted for BIO 141 and BIO 142 for the Pre-Radiography curriculum only. NAS 171 is offered in fall semester only.

[3] If ITE 115 is taken, it may be substituted for ITE 102.

[4] Radiography students may select any Social Science elective from the "Approved List of Transfer Courses"; however, PSY 200 is the preferred choice for Radiography.

[5] Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[6] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

[7] Practical Nursing students are encouraged to complete PSY 200, however, a three credit elective can be substituted.

[8] Nursing students must take HLT 141. HLT 143 will not substitute for HLT 141.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

CERTIFICATE (285)

HIM: Electronic Medical Records Management

Purpose: Records management professionals are an integral part of any medical facility. This certificate is designed to prepare personnel to perform essential medical office management functions.

Occupational Objectives: Employment opportunities for medical office managers are plentiful throughout the country in physicians' offices, HMOs, urgent care centers, managed care practices, and other types of health agencies as practice managers.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Curriculum and Other Requirements

General Education Core Courses

		Credits
ENG 111*	College Composition I	3
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Management Technology	1

Medical Office Records Management and Related Courses

AST 101	Keyboarding I	3
AST 141*	Word Processing I	3
AST 154	Voice Recognition Applications	1
AST 205*	Business Communications	3
AST 232*	Microcomputer Office Applications	3
HIM 130	Healthcare Information Systems	3
HIM 149	Introduction to Medical Practice Management	2
HIM 150	Health Records Management	3
HIM 226	Legal Aspects of Health Records Documentation	2
HIM 230	Information Systems & Technology in Health Care	3
HIM 233*	Electronic Health Records Management	3
HLT 143	Medical Terminology I	3
HLT 144*	Medical Terminology II	3
Total Minimum Credits for Certificate		**42**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
AST 101
ENG 111
HIM 130
HIM 230
HLT 143
SDV 101

Spring
AST 141
HIM 150
HIM 233
HLT 144
PSY 120

Second Year

Fall
AST 154
AST 205
AST 232
HIM 149
HIM 226

CAREER STUDIES CERTIFICATE (221-152-06)

HIM: Health Records Coding

Purpose: The medical coding profession is experiencing high demand as coding positions are increasing across the nation. This growing program is designed to provide the technical knowledge and practical experience needed for employment as a health records coding technician. These technicians analyze and interpret a patient's record to determine the proper standardized code that represents the patient's diagnosis and treatment which is used mainly for billing purposes. Coders are a very important part of the medical office team.

Occupational Objectives: Coding professionals have many employment opportunities which include diagnostic outpatient coding in a medical facility, positions in physicians' offices, and inpatient coding positions. Graduates of the program are eligible to take the national certifying examinations administered by the American Health Information Management Association of American Academy of Professional Coder.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Program Requirements: Students with no coding background should take HIM 195 Introduction to Coding before committing to this program.

Curriculum and Other Requirements

General Education Core Courses		Credits
PSY 120	Human Relations	3

Health Records Coding and Related Courses

AST 101	Keyboarding I	3
AST 243*	Office Administration I	3
HIM 226	Legal Aspects of Health Records Documentation	2
HIM 253[1,*]	Health Records Coding	4
HIM 254[2,4,*]	Advanced Coding and Reimbursements	4
HIM 290[3]	Coordinated Internship	3
HLT 143	Medical Terminology I	3
HLT 144[1,*]	Medical Terminology II	3
Total Credits for Certificate		**28**

[1] Prerequisite(s): HLT 143. Students with no coding background must take Introduction to Coding.

[2] Prerequisites: HLT 143, HLT 144, HIM 253.

[3] Must be taken in the final term of the program or with instructor's permission.

[4] Strongly recommended to sit for CPC exam after completing HIM 254.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
AST 101
AST 243
HLT 143

Spring
HLT 144
HIM 253
PSY 120

Second Year

Fall
HIM 226
HIM 254

Spring
HIM 290

CAREER STUDIES CERTIFICATE (221-285-87)

HIM: Medical Office Specialist

Purpose: Positions in medical offices are plentiful across the nation. This career studies certificate is designed to prepare personnel to perform a variety of medical office functions. Examples include scheduling of appointments, maintaining health records, coding clinical data, completing health insurance forms, and carrying out billing and collections functions.

Occupational Objectives: Employment opportunities include positions in physicians' offices, HMOs, managed care practices, urgent care centers, and in other health related agencies.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

To be successful in the program, students must have demonstrated English competency to be placed in English 111. Students who do not achieve this level will be required to take developmental courses.

Program Requirements: Students with no coding background should take HIM 195 Introduction to Coding before committing to this program.

Curriculum and Other Requirements

Medical Office Specialist and Related Courses		Credits
AST 101	Keyboarding I	3
AST 107	Editing/Proofreading Skills	3
AST 141*	Word Processing I	3
HIM 149	Intro to Medical Practice Mngmnt	2
HIM 190	Coordinated Internship for HIM	2
HIM 226	Legal Aspects of Health Record Documentation	2
HIM 253*	Health Records Coding	4
HIM 254*	Advanced Coding and Reimbursements	4
HLT 143	Medical Terminology I	3
HLT 144*	Medical Terminology II	3
Total Minimum Credits for Certificate		**29**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

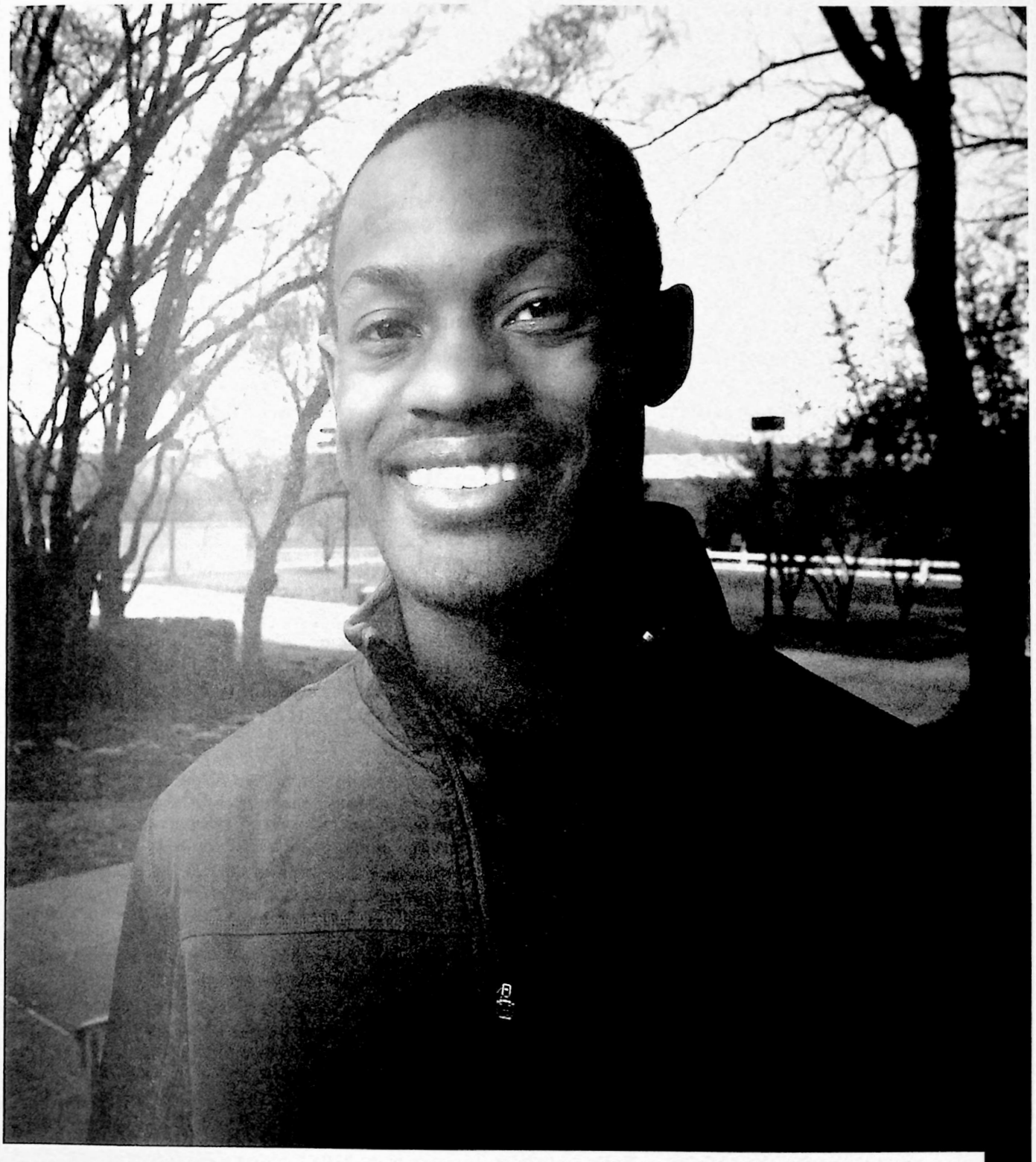
First Year

Fall
AST 101
AST 107
HIM 149 (fall only)
HIM 226
HLT 143

Spring
AST 141
HIM 253
HLT 144

Second Year

Fall
HIM 190
HIM 254



ASSOCIATE OF APPLIED SCIENCE DEGREE (335)

Horticulture Technology

Purpose: Horticulture, the science and art of growing fruits, vegetables, flowers or ornamental plants, is a billion-dollar industry in Virginia, and accounts for billions more dollars across the United States, which means jobs.

The Virginia Western Horticulture Program is an excellent way to take advantage of the many career opportunities in the green industry. The program offers an associate of applied science degree with emphasis on landscape management and plant production.

All horticulture classes have labs allowing you to get hands-on experience caring for plants in the two-acre campus arboretum, designing a landscape plan or growing flowers in the college's greenhouse. The program also emphasizes business classes because many students go on to run nurseries, garden centers, greenhouses or landscaping companies.

If you prefer a short-term curriculum, the department offers two Career Studies Certificates with specializations in Greenhouse Management and Landscaping.

Occupational Objectives: Manager or employee in a nursery or greenhouse; owner/manager of a landscaping firm; and employee in a retail horticulture business or a related industry.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Proficiency in high school English and one unit of high school Algebra. Deficiencies may be removed through developmental studies.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of classes. Students in this program will be provided an opportunity to obtain on-the-job training through cooperative arrangements between the college and prospective employers. Specific details about transfer arrangements can be obtained from the horticulture program head. Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Curriculum and Other Requirements		Credits
General Education Core Courses		
CST 105	Oral Communication (or CST 100)	3
ENG 111	College Composition I	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro to Computer Applications and Concepts	3
MTH 120*	Introduction to Mathematics	3
SDV 100	College Success Skills	1
E[2]	Humanities/Fine Arts Elective	3
E[3]	Social Science Elective	6
Horticulture and Related CoursesCourses		
BUS 165	Small Business Management	3
HRT 110	Principles of Horticulture	3
HRT 115	Plant Propagation	3
HRT 117	Tools & Equipment	2
HRT 201-202*	Landscape Plants I-II	6
HRT 205	Soils	3
HRT 207	Plant Pest Management	3
HRT 227	Professional Landscape Mngmnt	3
HRT 231	Planting Design I	3
HRT 232*	Planting Design II	3
HRT 246	Herbaceous Plants	2
HRT 269	Professional Turf Care	3
HRT 285	Mngmnt of a Horticulture Business	3
HRT 297	Cooperative Education (or HRT 296)	2
Total Minimum Credits for Degree		**66**

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (335)

Horticulture Technology cont'd

Suggested Schedule

First Year

Fall
ENG 111
HRT 110 (fall only)
HRT 201 (fall only)
ITE 115
SDV 100
Social Science Elective

Spring
HLT/PED
HRT 117 (spring only)
HRT 202 (spring only)
HRT 269 (spring only)
MTH 120
Social Science Elective

Second Year

Fall
CST 105 (or CST 100)
HRT 115 (fall only)
RT 207 (fall only)
HRT 231 (fall only)
HRT 246 (fall only)
Humanities/Fine Arts

Spring
BUS 165
HRT 205 (spring only)
HRT 227 (spring only)
HRT 232 (spring only)
HRT 285 (spring only)
HRT 297 (or HRT 296)

CAREER STUDIES CERTIFICATE (221-335-03)

Horticulture: Greenhouse Management

Purpose: This curriculum is designed to prepare students for entry-level positions in greenhouse, nursery, and garden center businesses, and to upgrade the skills of those currently employed in the industry. All of the courses offered in this program can be applied to the AAS degree in Horticulture Technology.

Occupational Objective: Assistant grower, wholesale and retail salesperson, production technician.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Curriculum and Other Requirements
Greenhouse Management Courses

HRT 110	Principles of Horticulture	3
HRT 115	Plant Propagation	3
HRT 117	Tools and Equipment	2
HRT 205	Soils	3
HRT 207	Plant Pest Management	3
HRT 246	Herbaceous Plant	2
HRT 285	Management of a Horticulture Business	3
Total Minimum Credits for Certificate		**19**

Suggested Schedule

Fall	Spring
HRT 110	HRT 117 (spring only)
HRT 115 (fall only)	HRT 205 (spring only)
HRT 207 (fall only)	HRT 285 (spring only)
HRT 246 (fall only)	

CAREER STUDIES CERTIFICATE (221-335-14)

Horticulture: Landscaping

Purpose: This curriculum is designed to prepare students for entry-level positions in landscaping businesses and to upgrade the skills of those currently employed in the industry. All of the courses offered in this program can be applied to the AAS degree in Horticulture Technology.

Occupational Objectives: Landscape designer, landscape technician.

Admission Requirements: Applicants must meet the general requirements for admission to the college.

Curriculum and Other Requirements

Landscaping Courses		Credits
HRT 117	Tools and Equipment	2
HRT 201-202	Landscape Plants I-II	6
HRT 207	Plant Pest Management	3
HRT 227	Professional Landscape Management	3
HRT 231	Planting Design I	3
HRT 232*	Planting Design II (or HRT 269)	3
HRT 246	Herbaceous Plant	2
Total Minimum Credits for Certificate		**22**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

Fall	Spring
HRT 201 (fall only)	HRT 117 (spring only)
HRT 207 (fall only)	HRT 202 (spring only)
HRT 231 (fall only)	HRT 227 (spring only)
HRT 246 (fall only)	HRT 232 (or HRT 269) (spring only)

CAREER STUDIES CERTIFICATE (221-335-20)

Horticulture: Viticulture

Purpose: This curriculum is designed to prepare students for employment in the grape production industry and to upgrade the skills of those currently employed in viticulture.

Occupational Objective: Graduates will be qualified for positions in vineyards and related areas of sales and services.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Curriculum and Other Requirements

Viticulture Courses		Credits
HRT 117	Tools and Equipment	2
HRT 205	Soils	3
HRT 207	Plant Pest Management	3
VEN 100	Introduction to Viticulture	3
VEN 110	Vineyard Establishment	3
VEN 125	Vineyard Management	3
Total Minimum Credits for Certificate		**17**

Suggested Schedule

Fall	Spring
HRT 207 (fall only)	HRT 117 (spring only)
VEN 100 (fall only)	HRT 205 (spring only)
VEN 110 (fall only)	VEN 125 (spring only)

ASSOCIATE OF APPLIED SCIENCE DEGREE (480)

Human Services

Purpose: Human Services course work prepares students for entry-level positions in the helping fields or transfer to a bachelor degree program. Through courses and a field placement in agencies, students develop skills and knowledge in working with people with physical and psychiatric disabilities, adolescents, the aged, the substance abuser, and the child or adult in crisis. Faculty will arrange individual consultations with students to help them in career planning.

Radford University Bachelor Degree Program: As a result of an articulation agreement with Radford University, any student who has completed the Associate of Applied Science (AAS) degree in Human Services will be granted admission to the Radford University Bachelor of Science (BS) degree in Social Work offered on the Virginia Western Community College campus. For more information, contact Dr. Annemarie Carroll, Human Services Program Director, at (540) 857-6178.

Old Dominion University Bachelor Degree Program: As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Human Services may earn a baccalaureate degree in Human Services on the Virginia Western Community College campus in Roanoke.

Occupational Objectives: Employment opportunities for graduates in Human Services include staff positions in hospitals, mental health clinics, group homes, training centers, and community service agencies. Graduates may transfer to a four-year college or university for bachelor degrees in fields such as social work, psychology, special education, gerontology, and human resources.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Algebra I, Algebra II and Geometry are prerequisites for the human services curriculum. Developmental courses may be recommended for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

MEN 101 is only offered in the fall semester and is a pre-requisite for many classes. Students entering the Human Service Program should make this their first class selection.

Admission to Internship: Admission to MEN 290 (Coordinated Internship) is selective and must be approved by the Internship Coordinator. Eligibility is based upon the following criteria: minimum GPA of 2.0, completion of course prerequisites (MEN 101 and MEN 102), faculty recommendations, expected graduation date, and any relevant internship site requirements. However, any internship student that does not meet the professional standards of Virginia Western Community College, the Human Services Program, and/or the participating clinical agency may be withdrawn from both the internship and the Human Service Program. Students who fail the internship or are removed may not take the internship again. Students who are removed or withdrawn from the internship for inappropriate conduct may be referred to the College's disciplinary committee.

ASSOCIATE OF APPLIED SCIENCE DEGREE (480)

Human Services cont'd

Curriculum and Other Requirements		Credits
General Education Core Courses		
BIO 101-102[1,4]	General Biology I-II	8
CST 100	Principles of Public Speaking	3
ENG 111-112	College Composition I-II	6
HLT/PED[2]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 157[1]	Elementary Statistics	3
SDV 100	College Success Skills (or SDV 108)	1
E[5]	Humanities/Fine Arts Elective	3
Human Services and Related Courses		
MEN 100	Introduction to Mental Health	3
MEN 101-102	Mental Health Skill Training I-II	6
MEN 221-222*[3]	Group Process I-II	6
MEN 225	Counseling Therapy	3
MEN 290*[4]	Coordinated Internship	5
PSY 200	Principles of Psychology	3
PSY 215	Abnormal Psychology	3
PSY 220	Intro to Behavior Modification	3
E[6]	Elective	3
E[7]	Elective	3
Total Minimum Credits for Degree		**67**

[1] MTH 120 can be substituted for MTH 157. MTH 120 will not transfer. Students should consult their faculty advisor before taking this option.

[2] Two credits of Health (HLT) or Physical Education (PED) are required of all students. It is recommended that students preparing for entry to Radford University complete HLT 110. Veterans will be awarded HLT/PED credit based on military service.

[3] Prerequisite: MEN 101-102 or departmental approval needed.

*[4] Prerequisite: MEN 101-102 **and** departmental approval needed.*

[5] Humanities/Fine Arts Elective must be chosen from the "Approved List of Humanities Transfer Courses.

[6] Students enrolling at Radford University should select a sociology elective.

[7] Select one of the following: PSY 230 or PSY 235.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
- ENG 111
- MEN 100 (fall only)
- MEN 101 (fall only)
- PSY 200
- PSY 220 (fall only)
- SDV 100 (or SDV 108)

Spring
- ENG 112
- HLT/PED
- MEN 102 (spring only)
- MEN 225 (spring only)
- PSY 215
- Elective

Second Year

Fall
- BIO 101
- MEN 221 (fall only)
- MEN 290
- MTH 157
- Humanities/Fine Arts

Spring
- BIO 102
- CST 100
- ITE 115
- MEN 222 (spring only)
- Elective

ASSOCIATE OF APPLIED SCIENCE DEGREE (299)

Information Systems Technology

Purpose: This curriculum is designed to prepare students for entry-level positions in Information Technology fields, and to update the technical knowledge of returning professionals. Classes in the program will educate the student in the vital skills needed to enter the modern, in-demand field of Information Technology. Every company in the modern age requires a technical staff that is well informed and up-to-date on the latest technology, and the AAS degree is designed to ensure that graduates have the knowledge that employers will look for and that returning professionals can quickly and easily update their knowledge in the field.

Accreditation: This program is accredited by the Association of Collegiate Business Schools and Programs (ACBSP). Virginia Western is accredited by the Southern Associate of Colleges and Schools (SACS).

Occupational Objectives: Students will gain the knowledge to enter or advance in a wide range of Information Technology fields, such as: Network Administrator, Web Programmer, Database Developer or GIS Developer.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. To be successful in this program, students must have demonstrated Math/English competency to be placed above Algebra I and into ENG 111. Students not achieving this level will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first year of coursework. Students are required to select one of the following concentrations: Database and Program Developer, Network & Database Administrator, Web Programmer or GIS Developer. Students should coordinate their concentration course selections with their faculty advisors.

Articulation: Based on an articulation agreement with Radford University, completion of this degree will allow students to pursue a BS degree in a variety of specializations in the College of Information Systems and Technology at Radford, either on campus at Radford or distance learning in Roanoke. Students who desire to pursue a BS must meet with an IT faculty advisor for more information.

Curriculum and Other Requirements		Credits
General Education Core Courses		
CST 100	Public Speaking	3
ECO 120[1]	Survey of Economics	3
ENG 111*	College Composition I	3
HLT/PED[2]	Health or Physical Education	1
ITE 115	Introduction to Computer Applications and Concepts	3
MTH 141*	Business Mathematics I	3
SDV 101	Orientation	1
E[3]	Humanities/Fine Arts Elective	3
E[4]	Social Science Elective	3
Information Systems Technology & Related Courses		
ACC 211*	Principles of Accounting I	4
BUS 100	Introduction to Business	3
BUS 116	Entrepreneurship	3
ITD 110	Web Page Design I	3
ITD 130	Database Fundamentals	3
ITN 109	Internet and Network Foundation	3
ITP 100	Software Design	3
ITP 170*	Project Management	3
E[5]	Info System Tech Concentration	18
Total Minimum Credits for Degree		**69**

[1] Students considering transfer to a four-year college should take ECO 201 or ECO 202.

[2] One credit of Health (HLT) or Physical Education (PED) is required of all students. Consult Health courses in the Description of Courses for selection of an approved course. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[3] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[4] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[5] An IT Concentration of 18 or 21 credits must be selected from the following four options:

- *Network & Database Administrator must take 21 credits consisting of ITD 250 , ITN 110, ITN 111, ITN 112, ITN 113, TEL 250*, Degree total - 69 Credits*
- *Web Programmer must take 21 credits consisting of ART 131, ITD 112*, ITD 210*, ITD 212*, ITD 220*, ITP 140*, ITP 225*, Degree total - 69 Credits*
- *Database and Program Developer must take 21 credits consisting of ITD 250*,ITD 251*, ITP 140*, (ITP 136*, 236*, 244*) or (ITP 120*, 220*, 246*), Degree total - 69 Credits*
- *GIS Developer must take 18 credits consisting of GIS 200*, GIS 201*, GIS 210*, ITP 136*, ITP 136L*, ITP 236*, Degree total 66 Credits*

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (299)

Information Systems Technology cont'd

Suggested Schedule

Network and Database Administrator

First Year	Spring
Fall	CST 100
ENG 111	ITD 130
ITD 110	ITE 115
ITN 109	ITN 111
ITN 110	MTH 141
ITP 100	Humanities/Fine Arts
SDV 101	

Second Year	Spring
Fall	ACC 211
BUS 100	ECO 120
BUS 116	ITN 113
ITD250	TEL 250
ITN 112	Social Science Elective
ITP 170	
HLT/PED	

Web Programmer

First Year	Spring
Fall	CST 100
ART 131	ENG111
ITD 110	ITD 130
ITD 112	ITD 210
ITN 109	ITE 115
ITP 100	MTH 141
SDV 101	

Second Year	Spring
Fall	ACC 211
BUS 100	ECO 120
BUS 116	HLT/PED
ITD 212	ITD 220
ITP 140	ITP 225
ITP 170	Social Science Elective
Humanities/Fine Arts	

Database and Program Developer

First Year	Spring
Fall	ACC 211
ENG 111	ITD 130
ITD 110	ITP 120 or ITP136
ITN 109	HLT/PED
ITN 110	MTH 141
ITP 100	Humanities/Fine Arts
SDV 101	

Second Year	Spring
Fall	BUS 100
BUS 116	CST 100
ITD 250	ECO 120
ITP 170	ITD 251
ITP 140	ITP246 or ITP 244
ITP 220 or ITP236	Social Science Elective

GIS Developer

First Year	Spring
Fall	BUS 100
ENG 111	CST 100
ITD 110	ITD 130
ITE 115	ITP136
ITN 109	ITP136L
ITP 100	MTH 141
SDV 101	

Second Year	Spring
Fall	ACC 211
BUS 116	ECO 120
GIS 200	GIS 201
GIS 210	HLT/PED
ITP 170	Humanities/Fine Arts
ITP 236	Social Science Elective

CAREER STUDIES CERTIFICATE (221-299-12)

IT: Database and Program Developer

Purpose: This program will provide students with skills in the aspects of client side database and programming development necessary for medium to large size companies. Courses will cover topics in database fundamentals, database administration design, and client side programming in either Java or C#.

Occupational Objectives: Students will gain the knowledge necessary for an entry level position in fields including Database Administrator, SQL Server Administrator, MySQL Administrator, Java Developer, C# Developer, and Software Architect.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. To be successful in this program, students must have demonstrated Math/English competency to be placed above Pre-Algebra and above ENG 4. Students not achieving this level will be required to take developmental courses.

Program Requirements: Students enrolling in the program will choose whether to specialize in Java or C# programming when they begin. Electives must be approved by their faculty advisor. This program may optionally be completed totally through Distance Learning with the permission of the IT faculty advisor or the IT Program Head.

Curriculum and Other Requirements

Database & Program Developer Courses		Credits
ITD 130	Database Fundamentals	3
ITD 250*	Database Architecture and Administration	4
ITD 251*	Database System Development	3
ITP 100	Software Design	3
ITP 120 & 220*.	Java Programming I and II	
or		
ITP 136 & 236*.	C# I and C# II	8
Total Minimum Credits for Certificate		**21**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	**Spring**
Fall	ITD 130
ITP 100	ITP 120 or ITP 136
Second Year	**Spring**
Fall	ITD 251
ITD 250	
ITP 220 or ITP 236	

CAREER STUDIES CERTIFICATE (221-732-02)

IT: Network and Database Administration

Purpose: The Network and Database Administration Career Studies Program seeks to give students the knowledge and skills to meet industries' needs for the "care takers" of computerized systems. A majority of corporations have large investments in their computer networks to facilitate business communications, which is an important element in success. These same companies also use the information available in corporate database as a strategic advantage over their competitors. This career studies seeks to give the student the ability to manage and keep these two valuable assets healthy and in proper working order.

Occupational Objectives: Students will gain the knowledge to obtain entry level positions as a Network or Database Administrator. Occupational job titles would include: Network Administrator, Database Administrator, Systems Administrator, Network Technician and Database Analyst.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

To be successful in this program, students must have demonstrated Math and English competency to be placed above Pre-Algebra and above ENG 4. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements

Network and Database Administration Courses		Credits
ITD 130	Introduction to Database Design	3
ITD 250*	Database Architecture and Administration	4
ITN 109	Internet and Network Foundation	3
ITN 110*	Client Operating System	3
ITN 111*	Server Administration	3
ITN 112*	Network Infrastructure	3
ITN 113*	Active Directory	4
Total Minimum Credits for Certificate		**23**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	ITD 130
ITN 109	ITN 111
ITN 110	

Second Year	Spring
Fall	ITN 113
ITN 112	
ITD 250	

CAREER STUDIES CERTIFICATE (221-352-03)

IT: Web Programmer

Purpose: This program will assist students in gaining skills in the aspects of web design necessary for medium to large size companies. Courses will cover topics in web page design, graphical software usage, computer languages, and database management.

Occupational Objectives: Students will gain the knowledge necessary for an entry level position in fields including Internet Application Developer, Web Programmer, and Web Designer.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. To be successful in this program, students must have demonstrated Math/English competency to be placed above Pre-Algebra and above ENG 4. Students not achieving this level will be required to take developmental courses.

Program Requirements: This program may optionally be completed totally through Distance Learning with the permission of the student's faculty advisor or the IT Program Head.

Curriculum and Other Requirements

Web Programmer Courses		Credits
ITD 110	Web Page Design 1	3
ITD 112	Designing Web Page Graphics	3
ITD 210*	Web Page Design II	3
ITD 212*	Interactive Web Design	3
ITD 220*	E-Commerce Administration	3
ITP 100	Software Design	3
ITP 140*	Client Side Scripting	3
ITP 225*	Web Scripting Languages	3
Total Minimum Credits for Certificate		**24**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	ITD 210
ITD 110	
ITD 112	
ITP 100	

Second Year	Spring
Fall	ITD 220
ITD 212	ITP 225
ITP 140	

CAREER STUDIES CERTIFICATE (221-520-21)

Interior Design

Purpose: The Interior Design Certificate program provides a foundation in visual presentation, special design, color coordination, the evolution of furniture and interior styles, and business procedures. The curriculum is designed to introduce students to the Interior Design field and to prepare students for entry-level positions or full-time employment. Curriculum students will develop the necessary skills to work with other interior design professionals.

Occupational Objectives: The certificate program prepares the student for employment in the interior design field in a variety of occupations such as a color consultant or retail sales associate in textiles, floor coverings, decorative accessories or home furnishings. Graduates of the program will be prepared to work as an interior design aide or establish their own client base.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in mathematics.

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Curriculum and Other Requirements		Credits
General Education Core Courses		
MTH 120*	Introduction to Mathematics	3
Interior Design and Related Courses		
IDS 100	Theory and Techniques of Interior Design	3
IDS 105	Architecture Drafting for Interior Design	3
IDS 109	Historical Styles of Furniture and Interiors	3
IDS 116*	Period Residential Design	4
IDS 205	Materials and Sources	3
IDS 206	Lighting and Furnishings	3
IDS 225	Business Procedures	3
IDS 245*	Computer Aided Drafting for Interior Designers	3
Total Minimum Credits for Certificate		**28**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	
Fall	**Spring**
IDS 100	IDS 105
IDS 109	IDS 116
IDS 205	IDS 206
IDS 245	IDS 225
MTH 120	

ASSOCIATE OF ARTS DEGREE (648)

Liberal Arts

Purpose: The curriculum is designed for persons who plan to transfer to a four-year program to complete a baccalaureate degree, usually the Bachelor of Arts degree in Liberal Arts or Social Sciences. Students in this program may wish to major in the following fields at four-year institutions: English, foreign language, humanities, journalism, philosophy, pre-law, social sciences, or speech/drama.

Students are urged to acquaint themselves with the requirements of the major department in the college or university to which transfer is contemplated and also to consult with their faculty advisor or counselor at Virginia Western in planning their program and selecting electives. In order to prepare for junior-class standing at a four-year college or university, the student usually must complete a program of study at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

Occupational Objective: To prepare students to transfer to a four-year college or university, especially those that require a foreign language.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

Curriculum and Other Requirements		Credits
General Education Core Courses		
CST 100	Principles of Public Speaking	3
ENG 111-112*	College Composition I-II	6
E G 241-242[4,*]	Survey of American Literature I-II (or ENG 243-244)	6
HIS 111-112	History of World Civilization I (or HIS 121-122)	6
HLT/PED[6]	Health or Physical Education	2
ITE 115	Intro to Computer Applications and Concepts	3
MTH 151[7,*]	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152[7,*]	Mathematics for the Liberal Arts II (or MTH 271)	3
SDV 100	College Succ ss Skills (or SDV 108)	1
E[1]	Social Science Elective	6
E[2]	Natural Science Sequence	8
E[3]	Intermediate Foreign Language Electives	6
E[3,5,6]	Humanities/Fine Arts Elective or Begin Foreign Language Electives	7
Total Minimum Credits for Degree		**60**

[1] Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[2] Natural Science elective must include a two-semester sequence of BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202. If planning on transfer, contact four-year institution for requirements.

[3] Foreign language electives must be selected from French or Spanish. Completion of intermediate level is required for graduation. Students may take the intermediate level, composed of two three-credit courses, during their first year to meet the foreign language requirement if they have completed two years of a high school foreign language with at least a "B" average. If not, students must take the beginning level, composed of two four-credit courses, during the first year and the intermediate level during the second year. Students who completed the intermediate-level foreign language during their first year of study must complete three credits of Health or Physical Education.

[4] Contact four-year institution for requirements.

[5] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

ASSOCIATE OF ARTS DEGREE (648)

Liberal Arts cont'd

[6] *Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.*

[7] *The completion of a two-semester sequence of MTH 151-152, MTH 151-157 or MTH 163-271 is strongly recommended. If planning on transfer, contact four-year institution for requirements. If planning on transfer, contact four-year institution for requirements.*

**This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
ENG 111
SDV 100 or SDV 108
Social Science Elective
Natural Science Sequence
Foreign Language Elective

Spring
ENG 112
ITE 115
Social Science Elective
Natural Science Sequence
Foreign Language Elective

Second Year

Fall
CST 100
ENG 241 or 243
HIS 111 or HIS 121
MTH 151 or MTH 163
Humanities/Fine Arts Elective or Foreign Language Elective

Spring
ENG 242 or 244
HIS 112 or HIS 122
HLT/PED
MTH 152 or MTH 271
Humanities/Fine Arts Elective or Foreign Language Elective

ASSOCIATE OF ARTS DEGREE (648)

Liberal Arts cont'd

Purpose: The curriculum is designed for persons who plan to transfer to a four-year program in a professional art school or to a four-year program in fine arts. Students who are interested in art but who do not elect immediately to transfer will also find this program suited to their needs. Students are urged to acquaint themselves with the requirements of the major department in the college or university to which transfer is contemplated and also to consult with their faculty advisor or counselor at Virginia Western in planning their program of study and selecting electives. In order to prepare for junior-class standing at a four-year college or university, the student usually must complete a program of study at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

Occupational Objective: To prepare students to transfer to a four-year college or university with a major in art or to an art school.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. A satisfactory aptitude in visual art is preferred for entry into the art program.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 04) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

Curriculum and Other Requirements	Credits
Fine Arts Specialization (01)	
General Education Core Courses	
CST 100 ..... Principles of Public Speaking (or CST 105)	3
ENG 111-112* College Composition I-II	6
ENG 241[4] ..... Survey of American Literature I (or ENG 243) (or Foreign Language Elective)	3
HIS 111-112 .... History of World Civilization I (or HIS 121-122)	6
HLT/PED[4,5] ..... Health or Physical Education	3
MTH 151[6,*] ..... Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152[6,*] Mathematics for the Liberal Arts II (or MTH 157 or MTH 271)	3
SDV 101 ..... Orientation to Visual Arts	1
E[1] ..... Interm Foreign Language Elective	6
E[2] ..... Social Science Elective	6
E[3] ..... Natural Science Sequence	8

Fine Arts Specialization Courses

ART 121-122* . Drawing I-II	6
ART 131 ..... Fundamentals of Design I	3
ART 132[4,*] ..... Fundamentals of Design II or Foreign Language Elective	3
Total Minimum Credits for Degree	**60**

[1] Foreign language electives must be selected from French or Spanish. Completion of intermediate level is required for graduation. Students may take the intermediate level, composed of two three-credit courses, during their first year to meet the foreign language requirement if they have completed two years of a high school foreign language with at least a "B" average. If not, students must take the beginning level, composed of two four-credit courses, during the first year and the intermediate level during the second year.

[2] Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[3] Natural Science elective must include a two-semester sequence of BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202. If planning on transfer, contact four-year institution for requirements.

[4] If students took the beginning level of foreign language during the first year, then they must take the intermediate level during the second year. If they took the intermediate level during the first year, they will take ENG 241 and ART 132.

ASSOCIATE OF ARTS DEGREE (648)

Liberal Arts cont'd

[5] *Three credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.*

[6] *The completion of a two-semester sequence of MTH 151-152, MTH 151-157 or MTH 163-271 is strongly recommended. If planning on transfer, contact four-year institution for requirements. If planning on transfer, contact four-year institution for requirements.*

**This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
ART 121
ENG 111
SDV 101
Foreign Language Elective
Social Science Elective

Spring
ART 122
ENG 112
CST 100 or CST 105
Foreign Language Elective
Social Science Elective

Second Year

Fall
ART 131
ENG 241 or ENG 243 or Foreign Language Elective
HIS 111 or HIS 121
MTH 151 or MTH 163
Natural Science Sequence

Spring
ART 132 or Foreign Language Elective
HIS 112 or HIS 122
HLT/PED
MTH 152 or MTH 271
Natural Science Sequence

CAREER STUDIES CERTIFICATE (221-731-98)

Maintenance Technology

Purpose: This program offers the skills to enhance a career in facilities maintenance. Students can learn the skills and concepts necessary to install, operate, maintain and repair control, piping, HVAC/R (heating, venting, air conditioning and refrigeration) and mechanical systems in large commercial, medical, institutional, and industrial buildings. Students will learn troubleshooting skills, problem-solving methods and electrical concepts. Continuous improvement techniques and effective written, verbal, and electronic communications skills are stressed.

Occupational Objectives: Students will be prepared to work in the maintenance department of small industry, health care facilities, and other heavy industry organizations.

Admission Requirements: Applicants must meet the general requirements for admission to the college. Proficiency in oral and written communication skills and general mathematics is required. To be successful in this program, students must have demonstrated Math competency to be placed above Pre-Algebra. Students not achieving this level will be required to take developmental courses.

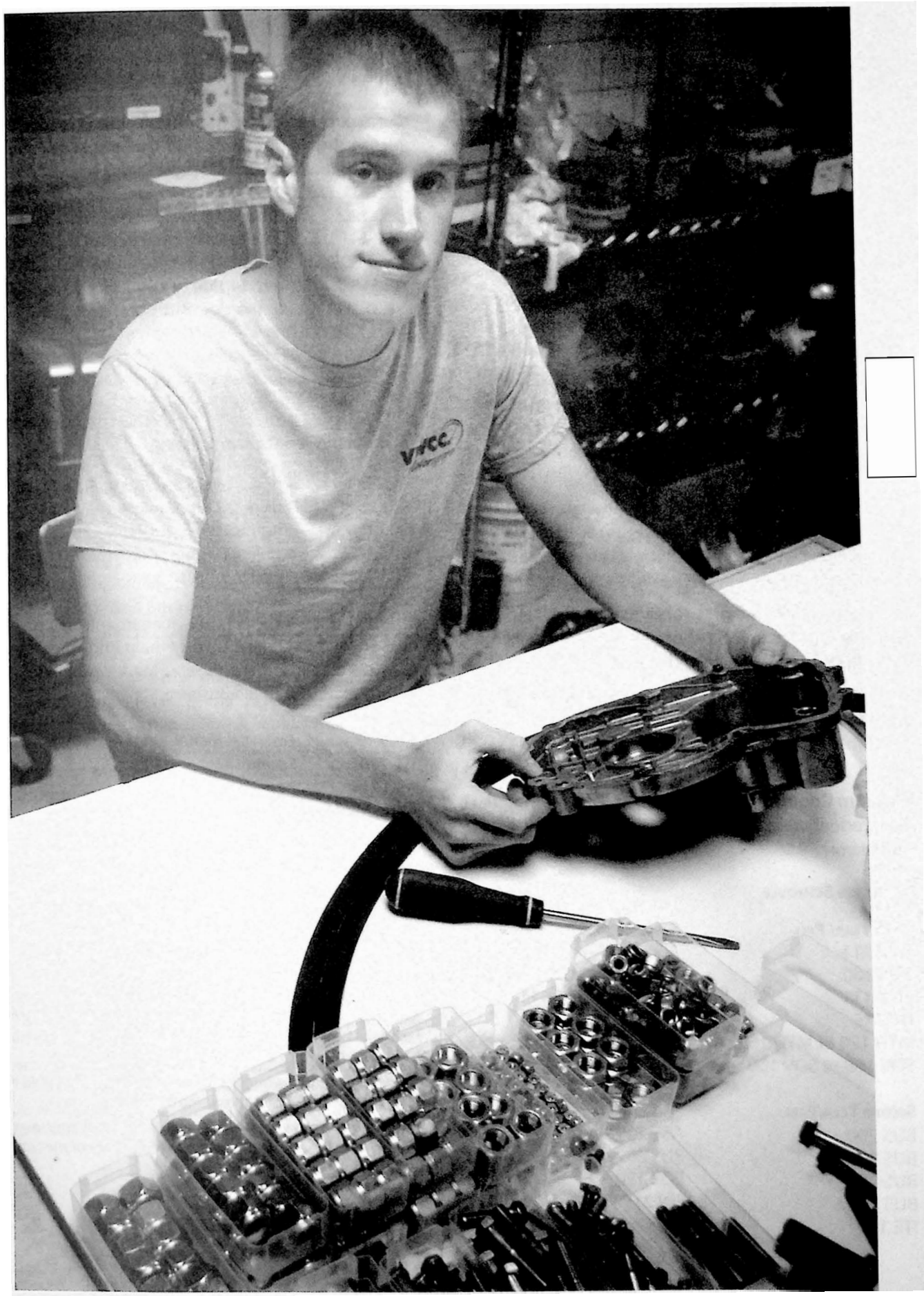
Curriculum and Other Requirements		Credits
Maintenance Technology and Related Courses		
AIR 121-122*	Air Conditioning & Refrigeration I-II	6
BLD 111	Blueprint Reading and the Building Code	3
ELE 130	Electricity	4
MEC 162	Fluid Mechanics Hydraulics/ Pneumatics	3
SAF 127	Industrial Safety	2
WEL 120	Fundamentals of Welding	3
Total Minimum Credits for Certificate		**21**

**This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

***Note:** AIR students are required to provide their own electrical multimeter and refrigerant gauges as detailed in the course syllabus.*

Suggested Schedule

Fall	Spring
AIR 121	AIR 122
ELE 130	BLD 111
WEL 120	MEC 162
	SAF 127



ASSOCIATE OF APPLIED SCIENCE DEGREE (212)

Management

Purpose: The curriculum is designed for persons who seek full-time employment in business and industry upon completion of this curriculum. Individuals who are seeking initial employment in a managerial position and those presently in business who are seeking promotion to management may benefit from this curriculum.

Accreditation: This program is accredited by the Association of Collegiate Business Schools and Programs.

Occupational Objectives: Management trainee, supervisor, real estate sales, banking, finance, retail merchandising, production operations, purchasing agent, sales management, and other related business and industry occupations.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Suggested Schedule

First Year/ Fall	Spring
ACC 211	ACC 212
BUS 100	BUS 125 or MTH 271
ENG 111	BUS 165 or BUS 111
ITE 115	CST 105
MTH 120 or MTH 163	HLT/PED
SDV 108 or SDV 100	MKT 100

Second Year/Fall	Spring
BUS 200	AST 205
BUS 205	BUS 202
BUS 225	ECO 120
BUS 241	FIN 215
ITE 140	Humanities/Fine Arts

Curriculum and Other Requirements — Credits

Management Major

General Education Core Courses

CST 105	Oral Communication	3
ECO 120[3]	Survey of Economics	3
ENG 111*	College Composition I	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Introduction to Computer Applications and Concepts	3
MTH 120*	Intro to Mathematics (or MTH 163)	3
SDV 100	College Success Skills (or SDV 108)	1
E[2]	Humanities/Fine Arts Elective	3

Management and Related Courses

ACC 211-212*	Principles of Accounting I-II	8
AST 205*	Business Communications	3
BUS 100	Introduction to Business	3
BUS 125*	Applied Business Math (or MTH 271)	3
BUS 165*	Small Business Management (or BUS 111)	3
BUS 200	Principles of Management	3
BUS 202*	Applied Management Principles	3
BUS 205	Human Resource Management	3
BUS 225*	Applied Business Statistics	3
BUS 241	Business Law I	3
FIN 215*	Financial Management	3
ITE 140	Spreadsheet Software	3
MKT 100	Principles of Marketing	3
Total Minimum Credits for Degree		**65**

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Students considering transfer to a four-year college should take ECO 201 or ECO 202 after consulting a faculty advisor.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (212)

Management cont'd

Curriculum and Other Requirements		Credits
Marketing Specialization (05)		
General Education Core Courses		
CST 105	Oral Communication	3
ECO 120[3]	Survey of Economics	3
ENG 111*	College Composition I	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Introduction to Computer Applications and Concepts	3
MTH 120*	Intro to Mathematics (or MTH 163)	3
SDV 100	College Success Skills (or SDV 108)	1
E[2]	Humanities/Fine Arts Elective	3
Marketing and Related Courses		
ACC 211-212*	Principles of Accounting I-II	8
AST 205*	Business Communications	3
BUS 100	Introduction to Business	3
BUS 125*	Applied Business Math (or MTH 271)	3
BUS 165*	Small Business Management	3
BUS 202*	Applied Management Principles	3
BUS 225*	Applied Business Statistics	3
BUS 241	Business Law I	3
FIN 215*	Financial Management	3
MKT 100	Principles of Marketing	3
MKT 110	Principles of Selling	3
MKT 216	Retail Organization & Management (or BUS 200)	3
MKT 220	Principles of Advertising	3
Total Minimum Credits for Degree		**65**

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Students considering transfer to a four-year college should take ECO 201 or ECO 202 after consulting a faculty advisor.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	
Fall	**Spring**
ACC 211	ACC 212
BUS 100	AST 205
ENG 111	BUS 125 or MTH 271
HLT/PED	BUS 165
ITE 115	HLT/PED
MTH 120 or MTH 163	MKT 100
SDV 108 or SDV 100	

Second Year	
Fall	**Spring**
MKT 216 or BUS 200	BUS 202
BUS 225	ECO 120
BUS 241	FIN 215
CST 105	MKT 220
MKT 110	Humanities/Fine Arts

ASSOCIATE OF APPLIED SCIENCE DEGREE (212)

Management cont'd

Purpose: The curriculum is designed for persons who seek full-time employment in business and industry upon completion of the degree requirements. Individuals who are seeking initial employment in an entry-level human resource position and those presently in business who are seeking promotions may benefit from this curriculum.

Accreditation: This program will be accredited by the Association of Collegiate Business Schools and Programs.

Occupational Objectives: Entry-level human resource assistant, management trainee and supervisor.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Suggested Schedule

First Year	Spring
Fall	ACC 212
ACC 211	BUS 111
BUS 100	BUS 125 or MTH 271
ENG 111	BUS 200
ITE 115	HLT/PED
MTH 120 or MTH 163	MKT 100
SDV 100	

Second Year	Spring
Fall	AST 205
ACC 124	BUS 202
BUS 205	BUS Elective
BUS 225	CST 105
BUS 241	FIN 215
ECO 120	Humanities/Fine Arts

Curriculum and Other Requirements	Credits
Human Resource Management Specialization (07)	
General Education Core Courses	
CST 105 ..... Oral Communication	3
ECO 120[3] ..... Survey of Economics	3
ENG 111* ..... College Composition I	3
HLT/PED[1] ..... Health or Physical Education	1
ITE 115 ..... Intro Computer Applications and Concepts	3
MTH 120 ..... Intro to Math (or MTH 163)	3
SDV 100 ..... College Success Skills (or SDV 108)	1
E ..... Business Elective (Adv Topics in HRM)	3
E[2] ..... Humanities/Fine Arts Elective	3
Human Resource Management and Related Courses	
ACC 211-212* . Principles of Accounting I-II	8
ACC 124 ..... Payroll Accounting	3
AST 205* ..... Business Communications	3
BUS 100 ..... Introduction to Business	3
BUS 111 ..... Principles of Supervision	3
BUS 125* ..... Applied Business Mathematics (or MTH 271)	3
BUS 200 ..... Principles of Management	3
BUS 202* ..... Applied Management Principles	3
BUS 205 ..... Human Resource Management	3
BUS 225* ..... Applied Business Statistics	3
BUS 241 ..... Business Law I	3
FIN 215* ..... Financial Management	3
MKT 100 ..... Principles of Marketing	3
Total Minimum Credits for Degree	**67**

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Students considering transfer to a four-year college should take ECO 201 or ECO 202 after consulting a faculty advisor.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

CAREER STUDIES CERTIFICATE (221-212-10)

Management: Entrepreneurship Plus

Purpose: This curriculum is designed for individuals who are interested in learning the fundamentals of starting and operating their own businesses. This curriculum is also designed for students who are pursuing or have completed an occupational/ business-related degree and would like to start their own business. Emphasis will be placed on developing a business plan.

Admission Requirements: Students must meet the general admission requirements for admission to the college. To be successful in this program, students must have demonstrated math and English competencies to be placed into Algebra II (MTH 4) and English 111. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements		Credits
Entrepreneurship and Related Courses		
ACC 110	Introduction to Computerized Accounting (or ACC 211)	1
BUS 116	Entrepreneurship	3
BUS 165*	Small Business Management	3
MKT 100	Principles of Marketing	3
E[1]	Approved Core Elective Sequences	6
Total Minimum Credits for Certificate		**16**

[1] Students must consult with one of the Management faculty advisors prior to selecting these courses.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

Fall	Spring
BUS 116	ACC 110
MKT 100	BUS 165
Core Elective	Core Elective

CAREER STUDIES CERTIFICATE (221-212-08)

Management: Human Resource Development

Purpose: This certificate is to prepare students for employment in the human resource management function of business and industry.

The program will take a generalist approach and is designed for students seeking initial employment and those seeking to advance their careers in human resource management. Emphasis will be placed on improving workplace readiness skills such as communications, critical analysis, problem-solving, teamwork, and work ethic.

Occupational Objectives: Students will be prepared for an entry level access to a payroll, management, preparation for employment and policies and procedures within the field of Human Resource Management.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. To be successful in this program, students must have demonstrated Math and English competencies to be placed into Algebra II (MTH 4) and English 111. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements	Credits
Human Resource Development and Related Courses	
ACC 124 ..... Payroll Accounting	3
BUS 100 ..... Introduction to Business	3
BUS 111 ..... Principles of Supervision	3
BUS 200 ..... Principles of Management	3
BUS 205 ..... Human Resources Management	3
E ..... Business Elective (Adv Topics in HRM)	3
Total Minimum Credits for Certificate	**18**

Suggested Schedule

Fall	Spring
ACC 124	BUS 111
BUS 100	BUS 205
BUS 200	BUS Elective

CAREER STUDIES CERTIFICATE (221-212-19)

Management: Organizational Leadership

Purpose: This curriculum is designed to prepare students for employment in business and industry at the supervisory level. The program is designed for students seeking initial employment in leadership, as well as those seeking to advance their careers into management. Emphasis will be placed on improving workplace readiness skills such as communications, critical analysis, problem-solving, teamwork, and work ethic.

Occupational Objectives: Students will be prepared to enter into the leadership roles while developing people skills and exercising the decision making process. This certificate is invaluable and can be used in all types of business including: Financial, Managerial, Operational, Technical, Sales and Service Industry.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Curriculum and Other Requirements		Credits
Organizational Leadership and Related Courses		
BUS 100	Introduction to Business	3
BUS 111	Principles of Supervision (or BUS 200)	3
BUS 165*	Small Business Management (or BUS 202)	3
BUS 205	Human Resources Management	3
MKT 100	Principles of Marketing	3
MKT 110	Principles of Selling	3
Total Minimum Credits for Certificate		**18**

** This course has a prerequisite/co-requisite. Prerequisites/ co-requisiites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall
BUS 100
BUS 111 or BUS 200

Spring
BUS 205
MKT 100

Second Year

Fall
BUS 165 or BUS 202
MKT 110

ASSOCIATE OF APPLIED SCIENCE DEGREE (956)

Mechanical Engineering Technology

Purpose: The Mechanical Engineering Technology program is designed to give the student broad experience and training in the basic concepts of the mechanical engineering technology field. In addition to the general education and mechanical technology courses, this program offers courses in machine design and in computer numeric control applications.

Graduates may seek immediate employment or consider opportunities available to transfer to Bachelor of Technology programs offered by some four-year colleges and universities.

Occupational Objectives: The mechanicale engineering technician usually serves as a liaison between the engineering and production departments working with the design and development of engineering plans. Responsibilities may include estimating, inspecting, and testing engineering equipment; operating, maintaining, and repairing engineering plants; research and development; sales and representation; and training and education.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics. Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Articulation Agreement: As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Mechanical Engineering Technology may earn a baccalaureate degree (BS) in Engineering Technology on the Virginia Western Community College campus in Roanoke.

Curriculum and Other Requirements		Credits
General Education Core Courses		
CST 100	Prin of Public Speaking (or CST 105)	3
ENG 111*	College Composition I	3
HLT/PED[3]	Health or Physical Education	2
MTH 115-116[5,*]	Technical Mathematics I-II	6
PHY 201*	General College Physics I	4
SDV 101	Orientation to Engineering Tech	1
E[1]	Humanities/Fine Arts Elective	3
E[2]	Social Science Elective	6
Mechanical Engineering and Related Courses		
DRF201-202-203*	Computer Aided Drafting and Design I-II-III	9
DRF 226*	Computer Aided Machining	3
DRF 238*	Computer Aided Modeling & Rendering	3
EGR 216*	Computer Methods in Engineering	3
ETR 113*	DC and AC Fundamentals I	4
MEC 113	Materials and Processes of Industry	3
MEC 119	Introduction to Basic CNC and CAM	3
MEC 131	Mechanics I-Statics for Engin Tech	3
MEC 132*	Mechanics II-Strength of Materials for Engineering Technology	3
E[4]	Technical Elective	3
Total Minimum Credits for Degree		**65**

[1] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[2] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult Health courses in the Description of Courses for selection of an approved course. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[4] Technical elective should be selected from EGR 126, EGR 206, MTH 157, PHY 202, or see advisor for additional options.

[5] Students may substitute MTH 166 and MTH 175. See advisor for details.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (956)

Mechanical Engineering Technology cont'd

Suggested Schedule

First Year

Fall
DRF 201
EGR 216
ENG 111
MEC 119
MTH 115
SDV 101

Spring
DRF 202
DRF 226
MEC 113
MEC 131
MTH 116
Humanities/Fine Arts

Second Year

Fall
DRF 203
ETR 113
HLT/PED
MEC 132
PHY 201
Social Science Elective

Spring
CST 100
DRF 238
HLT/PED
Social Science Elective
Technical Elective

CAREER STUDIES CERTIFICATE (221-731-68)

Microcomputer Systems Technology

Purpose: This program is designed to prepare a student for employment in the microcomputer-based telecommunications industry ranging from video and display systems to computer systems and networks. The curriculum involves three semesters of study and practice in specific technical subjects required for competence in this field. Emphasis on the basics along with hands-on troubleshooting of electronic systems affords graduates flexibility in choosing an occupation. Courses on A+® Certification and Cisco® CCNA™ are included in the curriculum.

Occupational Objectives: Computer technician, LAN/WAN technician, and technical representative/ salesperson.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Proficiency in high school English and completion of Algebra I. To be successful in this program, students must have Math and English competency to be placed in Algebra I and English. Students not achieving this level will be required to take developmental courses or receive departmental approval.

Curriculum and Other Requirements		Credits
Microcomputer Systems Tech and Related Courses		
ETR 113*	DC and AC Fundamentals I	4
ETR 123-124**	Electronic Applications I-II	2
ETR 141-142**	Electronics I-II	6
ETR 285	Fundamentals of Microcomputer Repair	4
TEL 150-151*	Internetworking I-II	8
Total Minimum Credits for Certificate		**24**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

***This course has a co-requisite. Co-requisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

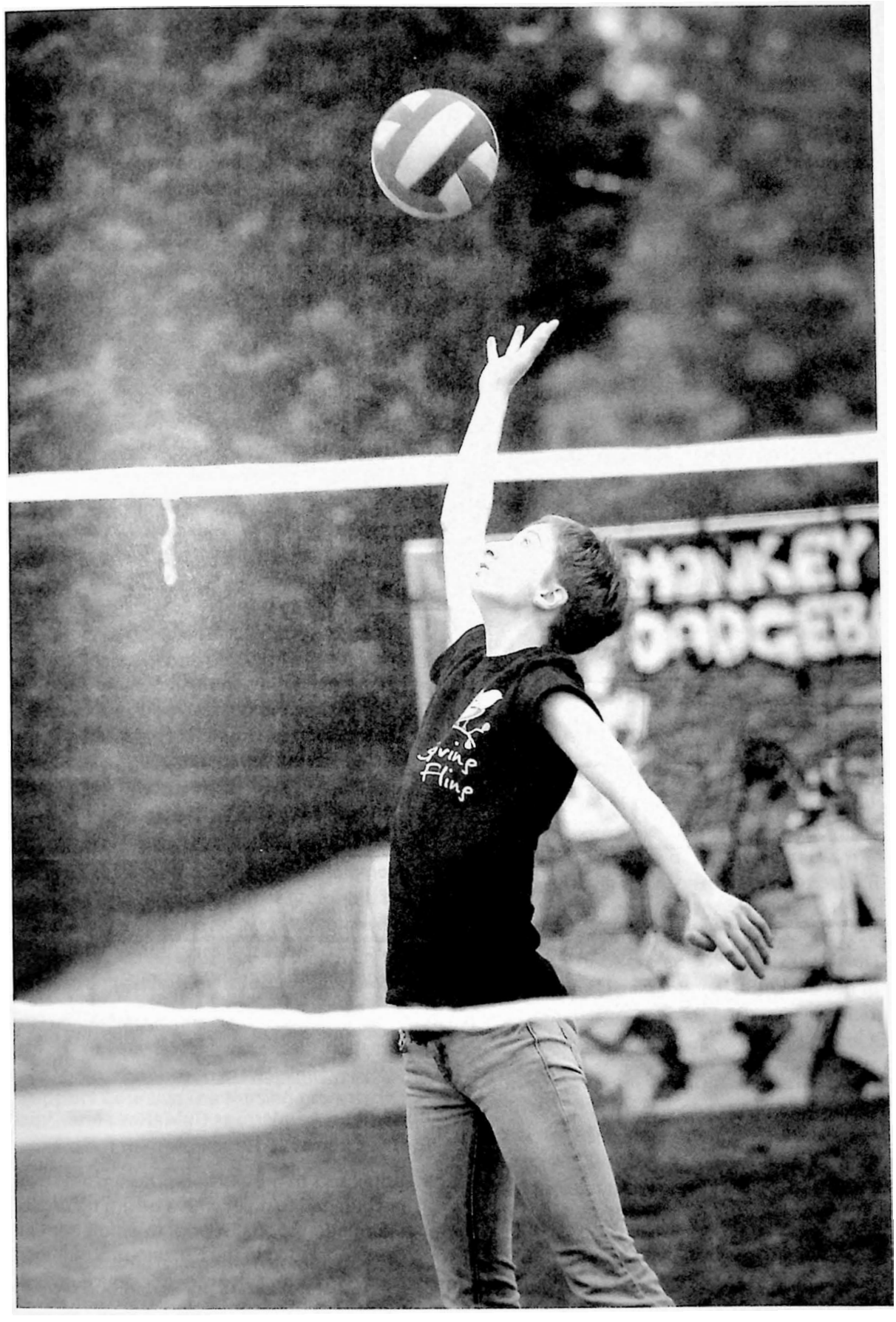
First Year

Fall
ETR 113
TEL 150

Spring
ETR 123
ETR 141
ETR 285
TEL 151

Second Year

Fall
ETR 124
ETR 142



ASSOCIATE OF APPLIED SCIENCE DEGREE (156)

Nursing

Purpose: The curriculum is designed to prepare selected students to qualify as contributing members of the health team implementing direct patient care as beginning practitioners in a variety of health service facilities. At the successful completion of the program, students will be eligible to take the National Council Licensure Exam leading to the designation of registered nurse (NCLEX-RN).

Mission: The VWCC Associate Degree Nursing Program mission is to prepare professionally educated nurses who are culturally competent, compassionate health care providers able to meet the changing health care needs of patients, families, and communities.

Note: Clinical agencies require that students have periodic background checks and drug screenings completed at the student's expense before beginning clinical rotations in the agency. A positive background check may include fingerprinting and drug screening and may deny a nursing student access to clinical agencies. Inability to participate in clinical rotations will disqualify the student from completing the Nursing Program.

Conviction of a felony, misdemeanor or any offense substantially related to the qualifications, functions and duties of a registered nurse may constitute grounds for denial of licensure; this is a decision that can only be made by the State Board of Nursing. In the state of Virginia, if someone has been convicted of a felony or a misdemeanor they may not be allowed to take the RN licensing exam. The question of eligibility to take the RN licensing exam cannot be determined until application for licensure is received by the State Board of Nursing (BON). VWCC has no control over whether or not the VA-BON or Boards of Nursing in other states will allow the student to take the RN-NCLEX exam.

Approval/Accreditation: This program is approved by the Virginia Board of Nursing and is a member of the National League of Nursing. Virginia Western is accredited by the Southern Association of Colleges and Schools (SACS). The VWCC Nursing Program does not participate in voluntary NLN-AC accreditation.

Occupational Objectives: Employment opportunities for the registered nurse include staff positions in hospitals, nursing homes, health departments, physicians' offices, clinics, day care centers, and home health agencies.

Admission Requirements:

1. Applicants must meet the general admission requirements for admission to the college.
2. Completion of one unit of high school Biology and Chemistry with a grade of "C" or better by Spring semester.
3. Algebra I or equivalent must be completed by end of Spring semester. Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.
4. Students who do not place into college level English on the placement test will be required to take developmental courses.
5. The applicant's cumulative high school grade point average (GPA) must be at least 2.5. If the applicant has been to college, the applicant's cumulative college GPA must also be at least 2.5 based on at least 12 credit hours of college credit in a 12-month timeframe. The GPA is determined at the end of fall semester prior to admission. High school graduates and GED holders who earned less than a 2.5 GPA during high school will be considered for admission if they have generated a college GPA of 2.5 or above based on at least 12-semester college credit hours within a 12-month period.
6. BIO 141, Anatomy and Physiology I, must be completed with a "C" grade or better by the end of the spring semester and BIO 142, Anatomy and Physiology II, must be completed with a "C" or better by the end of the summer semester prior to beginning the nursing program.

For application materials and additional program information, please see our website at *http://www.virginiawestern.edu/ht/nursing/.*

Curriculum Admissions Guidelines and Procedures for the Class of 2012:

1. Applicants to the Nursing program are strongly encouraged to meet with a health technology information specialist prior to enrollment in any course included in the Nursing program or in any course to correct an academic deficiency. **Please note:** Receipt of completed academic transcripts are required prior to this meeting.

ASSOCIATE OF APPLIED SCIENCE DEGREE (156)

Nursing cont'd

2. Applications for the 2012 class will be accepted beginning May 1, 2011 and must be completed no later than March 1, 2012. The complete application includes: an application to the college, official transcripts from all colleges attended (transcripts from VWCC or other Virginia community colleges are not required), official transcripts showing completion of a high school diploma or records showing completion of GED with scores, results of the nursing entrance test which is taken at the student's expense (nonrefundable), and a 2012 Nursing Application form. Nursing Application forms are available in the Admissions Office, the Health Technology Information Office, and on our website, *http://www.virginiawestern.edu/ht/nursing.* Qualified applicants, during the spring semester, will be required to take the nursing entrance tests and may be contacted for an interview with the Nursing Program Head. It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts (transcripts from VWCC or other Virginia community colleges are not required) in one envelope to the Virginia Western Health Technology Information office. After March 1, a Nursing Admissions Committee will review all completed applications. Applicants should be aware that meeting the curriculum admission standards does not guarantee program admission. In May, all applicants will receive a letter to notify them of their status with the program.

Admission Priorities: When the applications are reviewed in late April, priority will be given to applicants with a cumulative GPA of 3.0 or higher who have the strongest academic record, strongest entrance test results, and who have either already completed all prerequisites or anticipate completion of the missing prerequisites before summer 2012.

Nursing Support Courses: The Nursing program is an academically challenging program. Some students prefer to spread out their workload by completing support courses before beginning the Nursing program. Applicants are encouraged to take support courses before starting the program.

NUR 135 (Drug Dosage) is strongly recommended in the summer session preceding admission to increase the potential for success in the program.

Please note BIO 141, BIO 142, and NAS 185 must be repeated if they were completed more than five years prior to the date of admission into the program.

Essential Nursing Program Functions: To successfully complete the clinical component of the program, the student must be able to perform all of the essential functions of a clinical nurse:

1. Communicate satisfactorily with clients, physicians, peers, family members and the health care team.
2. See and hear adequately to note slight changes in the client's condition.
3. Hear adequately to perceive and interpret various equipment signals.
4. See adequately to read monitors in order to correctly interpret data on monitor.
5. Stand and/or walk six to twelve hours/day.
6. Walk rapidly for a prolonged period from one area to another.
7. Bend or squat frequently.
8. Assist in lifting or moving clients of all age groups and weights.
9. Demonstrate adequate eye/hand coordination for dexterity in manipulation of equipment.
10. Use hands for grasping, pushing, pulling. and fine manipulation.
11. Work with arms fully extended overhead for short periods.
12. Manage care of a client in an elevated hospital bed or stretcher, including one-man CPR when necessary.
13. Differentiate the color spectrum for color coding of charts and monitoring equipment.
14. Possess the visual acuity to correctly read handwritten orders, medication records, chart contents, and provide safety for clients and visitors.

Despite the foregoing, a qualified person with a disability who can perform these essential functions with reasonable accommodation will be considered for admission along with other qualified applicants.

Clinical Environment: The student should realize that student nurses are, by nature of the profession,

ASSOCIATE OF APPLIED SCIENCE DEGREE (156)

Nursing cont'd

exposed regularly to highly stressful and demanding situations, infectious diseases, difficult clients, and organizational and time pressures in a variety of client care settings. Students may also be exposed to a variety of communicable diseases.

Student Responsibilities after Acceptance into the Program:

1. Admission is contingent upon a satisfactory medical examination and CPR certification [for "healthcare provider" or "professional rescuer"]. This documentation must be returned to the Nursing Program Head at orientation in July or the student will be dropped from the program unless there are extenuating circumstances (e.g. late admission). The physical examination must include evidence of two Rubella vaccinations or Rubella titer, chickenpox vaccination or chickenpox titer, two-stage PPD skin test (or chest x-ray). Synthetic Hepatitis B vaccination series is required. Students must begin the vaccine series prior to the start of the program and complete the series prior to Level II courses. Satisfactory criminal background check and negative urine drug screening is required to attend clinical experiences. Random drug and alcohol screening may be required during the Nursing program. Costs of the drug screenings are the responsibility of the student.
2. Mandatory Nursing orientation during the summer session prior to program entry. Students will register for their classes. Tuition payment will be according to College guidelines for fall semester.
3. Successful completion of the program requires the student to maintain a grade of "C" or better in all Nursing program courses and a satisfactory evaluation in all clinical components.
4. NUR 135 (Drug Dosage) is strongly recommended in the summer session preceding admission to increase the potential for success in the program and decrease student workload in the fall. NUR 135 is a prerequisite for NUR 122. Failure in NUR135 during the Fall semester would prohibit continuing into the Nursing Program the following Spring.
5. Providing transportation to and from agencies utilized for clinical experience.
6. Purchasing required lab supplies, uniforms, and accessories.
7. Being prepared to attend classes and/or clinicals on day, evening shift, or weekends, 6, 8, or 12 hour shifts.

Retention Policies: A complete statement of these policies is contained in the Nursing Program Handbook, which is available upon admission to the program.

Readmission to the Nursing Program:

- Students who meet the readmission criteria set forth in the Nursing Program Handbook may request readmission to the Nursing program. Requests should be directed in writing to the Nursing Program Head as soon as the student has made the decision to reapply. Readmission is based on availability of space. Requests must be made **prior** to March 1st for fall semester and June 1st for spring semester.

- Readmission is not guaranteed. Criteria to be considered when a student applies for readmission are outlined in the Nursing Program Handbook which is available upon admission to the program.

Transfer to Baccalaureate Degree Programs: Students who are planning to transfer to a Baccalaureate Degree program following the AAS degree are advised to take appropriate college transfer courses. **Communication with the transfer institution early in the student's AAS education is strongly recommended so that students are aware of program admission requirements.**

ASSOCIATE OF APPLIED SCIENCE DEGREE (156)

Nursing cont'd

Curriculum and Other Requirements		Credits
General Education Core Courses		
BIO 141[5] -142[7].	Human Anatomy and Physiology I-II	8
ENG 111*	College Composition I	3
ITE 102	Computers & Information Systems	1
NAS 185*	Microbiology	4
PSY 200	Principles of Psychology	3
PSY 230	Developmental Psychology	3
SDV 100	College Success Skills (or SDV 101 or SDV 108)	1
E[4]	Humanities/Fine Arts Elective	3
Nursing and Related Courses		
HLT 141[6]	Intro to Medical Terminology	1
NUR 121-122[1,3]	Nursing Fundamentals I-II	20
NUR 135[2]	Drug Dosage Calculation	2
NUR 238-239[1,3]	Integrated Nursing Principles I-II	20
Total Minimum Credits for Degree		**69**

[1] *Includes instruction in fundamental mathematical skills and drug dosage calculations.*

[2] ***NUR 135 is a prerequisite for NUR 122. It is strongly recommended that the student take NUR 135 the summer semester prior to NUR 121.***

[3] *Health and wellness are an integral part of the Nursing curriculum. Health and disease, health promotion, preventive behavior, nutrition, and community health are all addressed across the lifespan within the curriculum (NUR 121, NUR 122, NUR 238 and NUR 239). Includes instruction in dosage calculations.*

[4] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." If planning on transfer, contact four-year institution for requirements.*

[5] *This course is a prerequisite for program admission and must be completed by the end of Spring semester for admission eligibility.*

[6] *HLT 143 cannot substitute for HLT 141 unless the sequence is completed; both HLT 143 and HLT 144.*

[7] *Must be completed by the end of summer session.*

* *This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	NAS 185
HLT 141	NUR 122
NUR 121	
NUR 135-RN	
SDV 100, SDV 101 or SDV 108	

Second Year	Spring
Fall	NUR 239
ENG 111	PSY 230
ITE 102	Humanities/Fine Arts
NUR 238	
PSY 200	

**Support courses (non-NUR courses) and NUR 135 may be taken prior to entry into the program.*

Notes:

BIO 141 must be completed with a "C" or better by the end of the spring semester. BIO 142 must be completed with a "C" or better by the end of the summer session. NAS 185 must be completed prior to entering NUR 238. (BIO 141, BIO 142, and NAS 185 must be repeated if they were completed more than five years prior to the date of admission into the program.)

ASSOCIATE OF APPLIED SCIENCE DEGREE (156)

Nursing cont'd
Licensed Practical Nurse to Registered Nurse Transition

Purpose: This curriculum plan offers qualified Licensed Practical Nurses (LPNs) a mechanism to utilize their knowledge and skills, and with additional academic preparation, transition into the Associate of Applied Science Degree Nursing program.

Occupational Objectives: Employment opportunities for the registered nurse include staff positions in hospitals, nursing homes, health departments, physicians' offices, clinics, day care centers, and home health agencies.

Admission Requirements:

1. Applicants must meet the general admission requirements for admission to the college.
2. Students who do not place into college level English on the placement test will be required to take developmental courses.
3. Applicants must have completed one unit of high school Biology and Chemistry with a grade of "C" or better by the end of Spring 2012 semester.
4. Applicants who have not completed Algebra I in high school with a "C" or better will be required to take the placement test. Those who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4 or higher) on the placement test will be required to take developmental courses. Algebra I must be successfully completed by the end of Spring 2012.
5. BIO 141, Anatomy and Physiology I, must be completed with a "C" grade or better by the end of the spring semester and BIO 142, Anatomy and Physiology II, must be completed with a "C" or better by the end of the summer semester prior to beginning the nursing program.
6. If the applicant is deficient in one or more of these high school or college prerequisites, the information specialist at Virginia Western can recommend appropriate college courses that can be substituted for the high school courses.
7. Applicants must be a graduate of an approved Practical Nursing Program.
8. Applicants must be currently licensed as an LPN in Virginia.
9. Applicants must meet the application deadline of **March 1, 2012** for the fall 2012 class.
10. Applications for the 2012 class will be accepted beginning May 1, 2011 and must be completed no later than March 1, 2012. Should spaces be available, later applications will be considered. The complete application includes: an application to the college, official transcripts from all colleges attended (transcripts from VWCC or other Virginia community colleges are not required), official transcripts showing completion of a high school diploma or records showing completion of GED with scores, results of the nursing entrance test which is taken at the student's expense (nonrefundable), and a 2012 LPN to RN Transition Application form. Nursing Application forms are available in the Admissions Office, the Health Technology Information Office, and on our website, *http://www.virginiawestern.edu/ht/nursing/LPNtoRNTransitionProgram.html*. Qualified applicants, during the spring semester, will be required to take the nursing entrance test and may be contacted for an interview with the Nursing Program Head. It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts (transcripts from VWCC or other Virginia community colleges are not required) in one envelope to the Virginia Western Health Technology Information Office. After March 1, a Nursing Admissions Committee will review all completed applications. Applicants should be aware that meeting the curriculum admission standards does not guarantee program admission. In May, all applicants will receive a letter to notify them of their status in the program.

Transfer to Baccalaureate Degree Programs:

Students who are planning to transfer to a Baccalaureate Degree program following the AAS degree are advised to take appropriate college transfer courses. **Communication with the transfer institution early in the student's AAS education is strongly recommended so that students are aware of program admission requirements.**

The **Essential Functions, Clinical Environment, and Student Responsibilities** described on the previous Nursing program pages apply to all students admitted to the LPN to RN Transition.

ASSOCIATE OF APPLIED SCIENCE DEGREE (260)

Paralegal Studies

Purpose: The Paralegal Studies curriculum is designed to provide an individual working under the direction and supervision of a lawyer with a sufficient level of knowledge, understanding, and proficiency to perform tasks in meeting the needs of clients. A paralegal will have a basic understanding of the general process of American law and will have the ability to perform specific tasks under the supervision of a lawyer in the fields of criminal and civil law.

Occupational Objectives: Employment in both public and private sectors for individuals and businesses in a law-related environment.

Admission Requirements: Applicants must meet the general requirements for admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English or mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e. ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework. Students should take all LGL courses as shown in the section titled "Suggested Course Sequence."

Suggested Schedule

First Year/Fall	Spring
ENG 111	AST 205
ITE 115	CST 105
LGL 110	LGL 125
LGL 115	LGL 126
LGL 117	MTH 141
LGL 200	PSY 120
SDV 100 or SDV 108	

Second Year/Fall	Spring
ACC 211	Humanities/Fine Arts
HLT/PED	LGL 215
LGL 210	LGL 216
LGL 225	LGL 218
LGL 230	LGL 238
LGL 235	

Curriculum and Other Requirements	Credits
General Education Core Courses	
CST 105 ..... Oral Communications	3
ENG 111* ..... College Composition I	3
HLT/PED[1] ..... Health or Physical Education	1
ITE 115 ..... Introduction Computer Applications and Concepts	3
MTH 141* ..... Business Mathematics	3
PSY 120 ..... Human Relations	3
SDV 100 ..... College Success Skills (or SDV 108)	1
E[2] ..... Humanities/Fine Arts Elective	3
Paralegal and Related Courses	
ACC 211* ..... Principles of Accounting I	4
AST 205* ..... Business Communications	3
LGL 110 ..... Intro to Law and the Legal Assistant	3
LGL 115 ..... Real Estate Law for Legal Assistants	3
LGL 117 ..... Family Law	3
LGL 125 ..... Legal Research	3
LGL 126* ..... Legal Writing	3
LGL 200 ..... Ethics for the Legal Assistant	1
LGL 210 ..... Virginia and Federal Procedures	3
LGL 215 ..... Torts	3
LGL 216* ..... Trial Preparation and Discovery Practice	3
LGL 218 ..... Criminal Law	3
LGL 225 ..... Estate Planning and Probate	3
LGL 230 ..... Legal Transactions	3
LGL 235 ..... Legal Aspects of Business Organizations	3
LGL 238 ..... Bankruptcy	3
Total Minimum Credits for Degree	**67**

[1] One credit of Health (HLT) or Physical Education (PED) is required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog*

CERTIFICATE (157)

Practical Nursing

Also See Nursing

Purpose: The Certificate program in Practical Nursing is designed to prepare students for a career as a Licensed Practical Nurse (LPN). The program will provide instruction leading to licensure as a practical nurse, preparing qualified students to meet the health care needs of the community within the scope of practice of practical nursing, as defined by the Virginia Board of Nursing. Graduates of this program earn a Certificate in Practical Nursing and will be eligible to take the NCLEX-PN examination.

Note: Individuals who have a felony or misdemeanor conviction may not be allowed to take the Practical Nursing licensing exam. The question of eligibility to take the PN licensing exam cannot be determined until application for licensure is received by the State Board of Nursing. If you wish to discuss this issue, please call the Practical Nursing Program Head at (540) 857-6245.

Approval: This program is fully approved by the Virginia Board of Nursing.

Occupational Objective: Employment opportunities include nursing homes, hospices, public health and community nursing, medical offices and clinics, and acute and long-term care facilities.

Curriculum Admission Guidelines and Procedure for the Class of 2012:

Students enroll once a year in August. While applications are accepted at any time, to be eligible for admission in any year, the application packet must be completed by **April 1**. Applications may be accepted after this date on a space available basis.

Qualified applicants are considered without regard to race, color, gender, age, religion, disability, national origin, or other non-merit factors.

Admission Requirements:

1. Applicants must meet the general admission requirements for admission to the college. The applicant must be:
   a. graduate from an accredited high school or
   b. holder of a GED (battery score average equal to or greater than 450).
2. Students who do not place into college level English on the placement test will be required to take developmental courses.
3. Applicants must have completed one unit of high school Biology with a grade of "C" or better.
4. Applicants must have completed one unit of high school Algebra I with a grade of "C: or better. Students who have not completed Algebra I in high school with a grade of "C" or better will be required to take the placement test. Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.
5. Applicants must have a cumulative high school or collegiate GPA of 2.0 based on at least 12 credit hours of college credit in a 12-month time frame. The GPA is determined at the end of fall semester prior to admission.
6. Students must complete required evaluative tests administered at Virginia Western.
7. Applicants must attend a personal interview demonstrating satisfactory oral and written communication skills, if required. Recommended high school elective course is Chemistry.

For application materials and additional program information, please see our Health Technology website at *http://www.virginiawestern.edu/ht/practicalnursing*.

Admissions Procedures: Applicants interested in admission to the program must meet the above admission requirements and have a completed application packet. A complete application packet includes: an application to the College; official transcripts from all colleges attended (transcripts from VWCC or another Virginia community college are not required); and official transcripts showing completion of a high school diploma, GED with scores, a 2012 Practical Nursing Program Application form with the required essay in the format requested. It is required that applicants submit the above admission items in one envelope to the Health Technology Information Office with the Virginia Western application.

Admission Priorities: When the applications are reviewed in late April, priority will be given to the

CERTIFICATE (157)

Practical Nursing cont'd

applicants with a cumulative G.P.A. of 2.5 or higher who have the strongest academic record, and who have either already completed all high school prerequisites or anticipate completion of prerequisites by the end of spring 2012. (Prerequisites must be completed by the end of summer 2012.)

Essential Practical Nursing Program Functions: To successfully complete the clinical component of the program, the student must be able to perform all of the essential functions of a clinical nurse:

1. Communicate satisfactorily with clients, physicians, peers, family members, and the health care team.
2. See and hear adequately to note slight changes in the client's condition.
3. Hear adequately to perceive and interpret various equipment signals.
4. See adequately to read monitors in order to correctly interpret data on monitor.
5. Stand and/or walk six to eight hours/ day.
6. Walk rapidly for a prolonged period from one area to another.
7. Bend or squat frequently.
8. Assist in lifting or moving clients of all age groups and weights.
9. Demonstrate adequate eye/hand coordination for dexterity in manipulation of equipment.
10. Use hands for grasping, pushing, pulling, and fine manipulation.
11. Work with arms fully extended overhead for short periods.
12. Manage care of a client in an elevated hospital bed or stretcher, including one-man CPR when necessary.
13. Differentiate the color spectrum for color coding of charts and monitoring equipment.
14. Possess the visual acuity to correctly read handwritten orders, medication records, chart contents, and provide safety for clients and visitors.

Despite the foregoing, a qualified person with a disability who can perform these essential functions with reasonable accommodation will be considered for admission along with other qualified applicants.

Clinical Environment: The student should realize that student nurses are, by nature of the profession, exposed regularly to highly stressful and demanding situations, infectious diseases, combative and difficult clients, and organizational and time pressures in a variety of client care settings.

Student Responsibilities after Acceptance into the Program:

1. All students admitted to the Practical Nursing program must attend orientation, register for all classes, and pay tuition prior to August 1. Final admission is contingent upon a satisfactory medical examination. Results must be returned to the Practical Nursing Program Head 30 days before fall classes begin. This medical examination must include evidence of rubella (German measles) screening and/or vaccine, tuberculin skin test (or chest x-ray), and Hepatitis B vaccination (medical form provided upon admission to the program).
2. The student is responsible for transportation to and from agencies utilized for clinical experience and the purchase of student uniforms and accessories.
3. Acceptance into the program is contingent upon a satisfactory criminal background check and negative drug screening. Costs of tests are at the student's expense.
4. Verification of current CPR certification will be required prior to the beginning of classes and must be kept through enrollment in the program.

Retention Policy: A complete statement of these policies is contained in the Practical Nursing Program Handbook, which is provided upon admission to the program. Successful completion of the program requires the student to maintain a grade of "C" or better in all Practical Nursing courses and a satisfactory evaluation in all clinical components.

CERTIFICATE (157)

Practical Nursing cont'd

Curriculum and Other Requirements	Credits
General Education Core Courses	
ENG 111 * ..... College Composition I	3
SDV 100[2] ..... College Success Skills (or SDV 108)	1
Practical Nursing Courses	
NUR 135-PN ..... Drug Dosage Calculation	2
PNE 110-111 ... Practical Nursing Health and Disease I-II	10
PNE 120 ..... Introduction to Nursing Process	1
PNE 135 ..... Maternal and Child Health	5
PNE 141 ..... Nursing Skills I	3
PNE 142 ..... Nursing Skills II	3
PNE 145 ..... Trends in Practical Nursing	1
PNE 155 ..... Body Structure and Function	4
PNE 156[1] ..... Nursing Across the Life Span	4
PNE 158 ..... Mental Health & Psychiatric Nursing	2
PNE 174 ..... Applied Pharmacology for Practical Nurses	2
PNE 181-182 ... Clinical Experience I-II	10
Total Minimum Credits for Certificate	**51**

[1] Includes gerontological nursing.

[2] Students who have not previously completed SDV 100 or SDV 108 must enroll in SDV 100 or SDV 108 during the first semester of the practical nursing program.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year	Spring
Fall	PNE 110
ENG 111	PNE 142
NUR 135-PN*	PNE 156
PNE 120	PNE 174
PNE 141	
PNE 145	
PNE 155	
SDV 100 or SDV 108	

Second Year	Spring
Fall	PNE 135
PNE 111	PNE 182
PNE 158	
PNE 181	

** Note: NUR 135 PN only available in Fall.*

CERTIFICATE (112)

Radiation Oncology

Purpose: The Radiation Oncology curriculum is designed to prepare selected students to qualify as contributing members of the allied health care team who provide a variety of diagnostic and therapeutic services under the supervision of qualified professionals. Upon successful completion of the program, graduates will be eligible to apply to take the American Registry of Radiologic Technologists (ARRT) registry examination leading to certification as a registered Radiation Therapist, RT-T.

Voluntary Accreditation Status: The program has been accredited by the authority of the Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-2901. Phone (312) 704-5300.

Occupational Objectives: Graduates may apply for employment in private offices, hospitals, cancer centers, education, management, government agencies, and marketing and research.

Admission Requirements:

1. Applicants must meet the general admission requirements for admission to the college. High school diploma or equivalent.
2. Developmental courses are required for students with deficiencies in English and mathematics.
3. Completion of two units of high school or college laboratory science from the following: Biology, Chemistry, or Physics (preferred) with a "C" or better in each by the end of spring semester.
4. Completion of 3 units of high school or college mathematics– Algebra I, Algebra II and Geometry or equivalent with a grade of "C" or better in each by end of spring semester.

   Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.
5. Current high school or cumulative college grade point average 2.5 or above. Cumulative college GPA is based on 12 or more credit hours in a 12-month timeframe. GPA is calculated at the end of fall semester prior to admission.
6. Applicants who are RTs must be certified by a nationally-recognized Radiologic Science credentialing agency. Applicants who are currently enrolled in an accredited Radiography program must submit current transcripts demonstrating good academic standing.
7. Other health care providers from nationally accredited agencies and other individuals meeting admissions criteria will also be considered for admission.
8. Due to the nature of the patient population, the student should demonstrate maturity and a desire to work with cancer patients.
9. Due to the nature of the curriculum, applicants should have a strong background in mathematics and science.

For application materials and additional program information, please see our Health Technology website at *http:// www.virginiawestern.edu/ht/oncology*.

Essential program functions: To successfully complete the clinical component of the Radiation Oncology program, the student must be able to perform certain tasks requiring specific physical abilities. The candidate must be able to perform all of the following essential functions of a Radiation Therapist:

- Communicate satisfactorily with the patients, physicians, peers, and ancillary staff.
- See and hear adequately to note slight changes in patient condition.
- Hear adequately to perceive and interpret various equipment signals.
- See adequately to read emergency monitor data.
- Work with arms fully extended overhead.
- Lift and move 50 pounds at waist level or below waist level.
- Stand in place for extended periods of time.
- Walk rapidly for a prolonged period from one area to another (20–100 feet) carrying up to 25 lbs.

Despite the foregoing, a qualified person with a disability who can perform these essential functions with reasonable accommodation will be considered for admission.

Clinical Environment: Applicants should realize that students will be, by nature of the profession, exposed to ionizing radiation, infectious diseases, and difficult patients. Students will be exposed to stressful and demanding situations, as well as organizational and time pressures in the clinical setting.

CERTIFICATE (112)

Radiation Oncology cont'd

Admission Procedure: Upon completing an application to the College and Joint Venture site NOVA if applicable and a 2012 Radiation Oncology Application, students seeking admission to the Radiation Oncology program must have official transcripts from all schools and colleges attended forwarded to the VWCC Health Technology Information Office, including transcripts showing completion of a high school diploma or GED.

It is **required** that applicants submit official high school transcripts, GED scores, and all official college transcripts (if you have attended a community college in Virginia these transcripts are not necessary) in one envelope to the Virginia Western Health Technology Information Office.

In addition, applicants need to submit a copy of their professional licensure or certification, if applicable, and two letters of recommendation from employers or professors. These letters should be mailed to the attention of the Health Technology Information Office at Virginia Western, P.O. Box 14007, Roanoke, VA 24038.

Applicants must also take the math COMPASS placement test at Virginia Western. Additional information regarding the math COMPASS evaluation procedures will be mailed to applicants upon receipt of the completed academic file.

Upon receipt and review of academic file, applicants are encouraged to contact the Health Technology Information Specialist for information, evaluation, and advising regarding the program. Early application is advisable due to constraints in the number of clinical positions available.

Upon receipt of the qualified student's completed file, the applicant will be contacted for an interview appointment during the spring semester. Early application is encouraged for advising purposes.

Applicants whose credentials are completed by **March 15** will be considered by the Radiation Oncology Admissions Committee.

Applicants will be notified in writing of the action taken by the committee. If the number of qualified applicants falls below the maximum enrollment, the application deadline may be extended.

Readmission: Students who have withdrawn for any reason from the Radiation Oncology program are required to petition the Program Director for readmission by March 15 for the fall semester and by July 1 for the spring semester. Readmission is not guaranteed.

Student Responsibilities:

1. All students admitted to the Radiation Oncology program must attend orientation, register for all classes, and pay tuition prior to August 1. Final admission is contingent upon a satisfactory medical examination. Results must be returned to the Radiation Oncology Program Director 30 days before fall classes begin. This medical examination must include evidence of rubella (German measles) screening and/or vaccine, tuberculin skin test (or chest x-ray), and Hepatitis B vaccination. (Medical form provided upon admission to the program).
2. The student is responsible for transportation to and from agencies utilized for clinical experience and the purchase of student uniforms and accessories.
3. Acceptance into the program is contingent upon a satisfactory criminal background check and negative drug screening test at the student's expense.
4. Verification of current CPR certification will be required prior to the beginning of classes and must be kept current through enrollment in the program.

Retention Policies: Successful completion of the program requires students to maintain a "C" or better in all Radiation Oncology courses and MTH 163. MTH 163 must be successfully completed by the end of the first Fall semester. A complete statement of the above policies is outlined in the Radiation Oncology Student Handbook, which is available in the School of Science, Mathematics and Health Professions Office.

CERTIFICATE (112)

Radiation Oncology cont'd

Curriculum and Other Requirements	Credits
General Education Core Courses	
ENG 111* ..... College Composition I	3
ITE 102 ..... Computers & Information Systems	1
MTH 163* ..... Pre-Calculus I	3
SDV 100 ..... College Success Skills (or SDV 108)	1
Radiation Oncology Courses	
ROC 110[1] ..... Introduction to Radiation Oncology	2
ROC 120 ..... Radiation Oncology/Pathology I	3
ROC 121* ..... Radiation Oncology/Pathology II	3
ROC 125 ..... Pre-Clinical Techniques (2,0)	2
ROC 131 ..... Clinical Clerkship I	4
ROC 132* ..... Clinical Clerkship II	5
ROC 141* ..... Therapy Physics I	2
ROC 142 ..... Patient Care in Oncology	1
ROC 145* ..... Quality Improvement	2
ROC 151* ..... Cross-Sectional Anatomy	2
ROC 225 ..... Emerging Technology in Radiation Oncology (1)	1
ROC 231* ..... Clinical Clerkship III	5
ROC 232* ..... Clinical Clerkship IV	5
ROC 241* ..... Therapy Physics II	2
ROC 242* ..... Clinical Radiobiology	2
ROC 243* ..... Dosimetry	2
ROC 244* ..... Professional Seminar	2
Total Minimum Credits for Certificate 53	

[1] Health and wellness are an integral part of the Radiation Oncology curriculum.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Required Schedule*

First Year

Fall	Spring	Summer
ENG 111	ITE 102	ROC 132
MTH 163	ROC 120	
ROC 110	ROC 131	
ROC 125	ROC 145	
ROC 142	ROC 151	
SDV 100		

Second Year

Fall	Spring
ROC 121	ROC 225
ROC 141	ROC 232
ROC 231	ROC 241
ROC 243	ROC 242
	ROC 244

** Support courses (non-ROC courses) may be taken prior to entry.*

***Note:** Completion of HLT 143 (Medical Terminology), BIO 141 (Anatomy and Physiology I), BIO 142 (Anatomy and Physiology II) within five years prior to beginning the program is strongly recommended.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (172)

Radiography

Purpose: The curriculum is designed to prepare selected students to qualify as contributing members of the health team who care for patients under the supervision of qualified physicians. Upon completion of the curriculum, which includes a one-semester internship, the student is eligible to apply to take the National Registry Examination leading to certification as a Registered Radiographer, RT-R. Successful completion of the program and certifying exam will qualify a graduate to gain employment as a radiographer.

The Program has been accredited by the authority of the Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-2901; (312) 704-5300.

Occupational Objectives: Graduates may apply for employment in hospitals, education, industry, clinics, government agencies, physician's offices, and emergency care centers.

Admission Requirements:

1. Applicants must meet the general requirements for admission to the college. High school diploma or equivalent.
2. Completion of two units of high school or college laboratory science from the following: Biology, Chemistry, or Physics with a "C" or better in each by the end of spring semester.
3. Completion of two units of high school or college mathematics- Algebra I and Algebra II or equivalent with a grade of "C" or better in each by the end of Spring semester. Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.
4. Students who do not place into college level English on the placement test will be required to take developmental courses.
5. Current high school or cumulative college grade point average 2.5 or above. Cumulative college GPA is based on 12 or more credit hours in a 12-month timeframe. GPA is calculated at the end of fall semester prior to admission.

For application materials and additional program information, please see our Health Technology website at *http://www.virginiawestern.edu/ht/radiography*.

Essential Program Functions: To successfully complete the clinical component of the program, the student must be able to perform certain tasks requiring specific physical abilities. The candidate must be able to perform all of the following essential functions of a Radiographer:

1. Communicate satisfactorily with the patients, physicians, peers, and ancillary staff.
2. See and hear adequately to note slight changes in patient condition.
3. Hear adequately to perceive and interpret various equipment signals.
4. See adequately to read emergency monitor data.
5. Work with arms fully extended overhead.
6. Lift and move 50 pounds at waist level or below waist level.
7. Stand in place for extended periods of time (30 minutes to 3 hours).
8. Walk rapidly for a prolonged period from one area to another (20–100 feet) carrying up to 25 pounds.

Despite the foregoing, a qualified person with a disability who can perform these essential functions with reasonable accommodations will be considered for admission.

Clinical Environment: The candidate should realize that student Radiographers may be, by nature of the profession, exposed to ionizing radiation, infectious diseases, and difficult patients.

Admission Procedure: Upon completing an application to the college and a 2012 Radiography Application, students seeking admission to the Radiography program must have official transcripts from high school and all colleges attended (transcripts from VWCC or other Virginia community colleges are not required) forwarded to the Health Technology Information Specialist's office at Virginia Western including transcripts showing completion of a high school diploma or GED.

It is **required** that applicants submit official high school transcripts, GED scores, and all official college transcripts in one envelope to the Virginia Western Health Technology Information Office. Once the above documents have been received and evaluated by the

ASSOCIATE OF APPLIED SCIENCE DEGREE (172)

Radiography cont'd

Health Technology Information Specialist, applicants are encouraged to see the Health Technology Information Specialist for information, evaluation, and advising regarding the program. Early application is encouraged for advising purposes.

Upon receipt of the qualified student's completed file by the Program Director, the applicant will be contacted for an interview. Interviews typically begin in February for the fall program. Applicants whose credentials are completed by **February 15** will be considered by the Radiography Admissions Committee.

Applicants will be notified in writing of the action taken by the committee in May.

Advanced Placement: Advanced placement is available for Radiographers who wish to pursue an Associate Degree and for transfer students from other Radiography programs. Transfer students must furnish their transcripts, program curriculum, and a letter of reference from the Program Director for consideration into the Radiography program. All inquiries for advanced placement must be directed to the Radiography Program Director and will be considered on an individual basis.

Readmission: Students who have withdrawn from the Radiography program are required to petition the Program Director at least one month prior to the beginning of the semester they wish to be considered for readmission.

Student Responsibilities: All students admitted to the Radiography program must attend Radiography orientation, register for all classes, and pay tuition prior to August 1.

1. Final admission is contingent upon a satisfactory medical examination. Results must be returned to the Radiography Program Director 30 days before fall classes begin. This health history must include evidence of rubella (German measles) screening and/or vaccine, tuberculin skin test (or chest x-ray), Hepatitis B vaccination, and routine CBC. (Medical form provided upon admission to the program.)
2. The student is responsible for the purchase of uniforms and transportation to and from agencies utilized for clinical experience.
3. Acceptance into the program is contingent upon a satisfactory criminal background check and negative drug screening test at the student's expense.
4. Verification of current CPR certification will be required prior to the beginning of Radiography classes and must be kept current.
5. The student is responsible for paying a $20 film badge fee each semester.

Retention Policies: Successful completion of the program requires the student to maintain a "C" or better in all Radiography courses, NAS 171 and HLT 143. A complete statement of all the above policies is outlined in the Radiography Handbook, which is available upon admission into the program. Students must maintain a 2.0 or better GPA to remain in the program.

Upon successful completion of the Radiography program, students can make application to a wide variety of imaging modality programs: Ultrasonography, Radiation Therapy, Vascular-Intervention, Nuclear Medicine or Bachelor's Degree programs.

Information and applications to modality programs are available through the Radiography Program Director's office.

ASSOCIATE OF APPLIED SCIENCE DEGREE (172)

Radiography cont'd

Curriculum and Other Requirements	Credits
General Education Core Courses	
ENG 111[4,*] ..... College Composition I	3
SDV 100 ..... College Success Skills (or SDV 108)	1
E[2] ..... Social Science Elective	3
E[2] ..... Humanities/Fine Arts Elective	3
Radiography and Related Courses	
HLT 143[1] ..... Medical Terminology I	3
NAS 171* ..... Human Anatomy and Physiology I	4
RAD 106[3] ..... Introduction to Radiologic Science	2
RAD 111-112[3] . Radiologic Science I-II	8
RAD 121[1] ..... Radiographic Procedures I	4
RAD 125 ..... Patient Care Procedures	3
RAD 131-132 .. Elementary Clinical Procedures I-II	6
RAD 190* ..... Coordinated Practice	3
RAD 205[3] ..... Radiation Protection & Radiobiology	3
RAD 215 ..... Correlated Radiographic Theory	2
RAD 221[1,*] ..... Radiographic Procedures II	4
RAD 231-232 .. Advanced Clinical Procedures I-II	10
RAD 240 ..... Radiographic Pathology	3
RAD 290* ..... Coordinated Internship	4
Total Minimum Credits for Degree	**69**

[1] Health and wellness are an integral part of the Radiography curriculum.

[2] Social Science and Humanities/Fine Arts Electives may be selected from the "Approved List of Transfer Courses."

[3] Includes instruction in fundamental mathematics skills, develops skills in analysis, quantifications and synthesis, and application of problem-solving strategies.

[4] ENG 111-112 (College Composition I-II) with CST 100 is recommended for students planning to transfer to a baccalaureate degree program.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Required Schedule*

First Year

Fall	Spring	Summer
HLT 143	RAD 106	RAD 190
NAS 171	RAD 125	RAD 205
RAD 121	RAD 132	
RAD 131	RAD 221	
SDV 100 or SDV 08		

Second Year

Fall	Spring	Summer
ENG 111	RAD 112	RAD 215
RAD 111	RAD 232	RAD 290
RAD 231	Humanities/Fine Arts	
RAD 240	Social Science	

** Support courses (non-RAD courses) may be taken prior to entry.*

***Note:** NAS 171 (or BIO 141-142) must be repeated if they were completed more than five years prior to the date of admission into the program.*

of Science, Mathematics and Health Professions

ASSOCIATE OF SCIENCE DEGREE (880)

Science

Purpose: The Associate of Science-Science Degree is designed to prepare students for transfer to a four year college or University to complete a Bachelor's Degree in a science discipline or pre-professional program. Students who complete the degree may be eligible to participate in the Guaranteed Admission Agreement available through public and private colleges in Virginia. To view these agreements visit *www.vccs.edu/transfer.*

Occupational Objectives:

1. The AS degree in Science provides five options: Science, Specialization in Computer Science, Specialization in Health Science, Specialization in Integrated Environmental Studies, Specialization in Mathematics, and Specialization in Medical Technology.
2. Each option, in combination with available science electives, allows flexibility for students preparing for majors in the sciences, mathematics, or computer science. Refer to the next page for recommended courses for various transfer majors. Some graduation requirements can be adjusted when changes are needed to comply with curriculum requirements at the transfer institution.

Admission Requirements: Applicant must meet the general requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into the pre-requisite course for calculus (MTH 163 or 166) on the placement test will be required to take developmental courses. Students who place into college-level classes and have not completed Pre-calculus or Trigonometry in high school with a grade of "A" within the past three years or who have not completed a college level Pre-calculus or Pre-calculus with Trigonometry (or equivalent) course will be required to take MTH 163 or MTH 166.

Curriculum and Other Requirements General Education Core Courses		Credits
CST 100	Principles of Public Speaking	3
ENG 111-112	College Composition I-II	6
HIS 121	US History (or HIS 111)	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro to Computer Applications and Concepts (or CSC 201)	3
MTH 163[7,*]	Pre-Calculus I (or MTH 175)	3
MTH 271[7,*]	Applied Calculus I (or MTH 176)	3
MTH 272[5,*]	Applied Calculus II (or MTH 241)	3
SDV 100	College Success Skills (or SDV 108)	1
E[3]	Humanities/Fine Arts Elective	3
E[4]	Transfer Elective	5
E[6]	Social Science Elective	6
Science Courses		
E[2]	Science Elective	3
E[2]	Science Elective with Lab	16
Total Minimum Credits for Degree		**60**

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Natural Science courses must be selected from the Biology, Chemistry, Geology, Natural Science, and Physics courses listed in the "Approved List of Transfer Courses."

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

[4] Electives must be chosen from the "Approved List of Transfer Courses."

[5] Students who complete MTH 175-176 and MTH 177-178 may substitute MTH 277 or an elective.

[6] Social Science electives must be selected from the "Approved List of Transfer Courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[7] Students taking MTH 175-176 should consider taking MTH 177-178 as electives.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF SCIENCE DEGREE (880)

Science cont'd

Suggested Schedule

First Year

Fall	Spring
ENG 111	ENG 112
HLT/PED	MTH 271 or MTH 176
ITE 115 or CSC 201	Science Elective with Lab
MTH 163 or MTH 175	Humanities/Fine Arts
SDV 100 or SDV 108	Transfer Elective
Science Elective with Lab	

Second Year

Fall	Spring
HIS 121 or HIS 111	CST 100
MTH 272 or MTH 241	Science Elective
Science Elective with Lab	Science Elective with Lab
Social Science Elective	Social Science Elective

Science Courses with Lab (all are transfer courses)

BIO 101-102 General Biology I & II
BIO 141-142 Anatomy & Physiology I & II
CHM 111-112 College Chemistry I & II
CHM 241/245 Organic Chemistry I (lecture & lab)
CHM 242/246 Organic Chemistry II (lecture & lab)
GOL 105 Physical Geology
GOL 106 Historical Geology
NAS 131-132 Astronomy I & II
NAS 185 Microbiology
PHY 201-202 General College Physics I & II
PHY 241-242 University Physics I & II

Science Transfer Electives

BIO 215 Plant Life of Virginia
BIO 220 Immunology
BIO 227 Animal Life of Virginia
BIO 270 General Ecology
BIO 271 Introduction to Ecological Systems
BIO 285 Biological Problems in Contemporary Society
ENV 161 Introduction to Environmental Compliance
ENV 162 Environmental Principles in Public Health

Students preparing for a major in **pre-medicine, pre-dentistry, pre-pharmacy, or pre-veterinary** should complete the curricular program in Science and select BIO 101-102 and CHM 111-112 to fulfill required 16 credits of Science Elective with Lab. It is strongly recommended that PHY 201-202 General College Physics be taken to fulfill the Science Elective and Transfer Elective requirements. Many pre-professional programs also require Organic Chemistry; this sequence is offered every other year in even years.

Consultation with the transfer institution and a faculty advisor to select the sequence and Science electives based on the major is strongly advised.

Students preparing for a major in life science such as agriculture, **biology, nutrition, horticulture or science education** or a major in **natural or earth sciences** should complete the curricular program in Science and select two science sequences from BIO 101-102, CHM 111-112, GOL 105-106, NAS 131-132 to fulfill the required 16 credits of Science Elective with Lab. Consultation with the transfer institution and a faculty advisor to select the sequence and Science electives based on the major is **strongly advised**.

Students preparing for a major in **environmental science, ecology, or forestry** should pursue the Integrated Environmental Studies Specialization or follow the Science curriculum and select BIO 101-102 and CHM 111-112 to fulfill the required 16 credits of Science Elective with Lab; and BIO 215, 270, and 285 for the Science and transfer electives. Consultation with the transfer institution and a faculty advisor to select the sequence and Science electives based on the major is strongly advised.

Students preparing for a major in **mathematics, mathematics education, or statistics** should pursue the Specialization in Mathematics.

Students preparing for a major in **computer science** should pursue the Specialization in Computer Science.

Students preparing for a major in a health field such as **Nursing or other allied health field** and who desire a BS degree, should pursue the Specialization in Health Sciences.

ASSOCIATE OF SCIENCE DEGREE (880)

Science cont'd

Purpose: The **Specialization in Health Sciences** is designed for students who plan to transfer to a four-year college or university and major in a health field. Curricular needs are not the same in every health field, so students should confer with their faculty advisor or counselor and check with the four-year institution that they plan to attend in order to identify specific requirements for the field that they are interested in pursuing.

Students completing the Associate of Science - Specialization in Health Sciences degree are eligible for competitive admission to Radford University's Baccalaureate Degree program in Nursing under the Guaranteed Admission Agreement (GAA) between the Virginia Community College System and Radford University. To be eligible for admission to RU, students must complete the requirements to become GAA students, graduate with a cumulative GPA of 2.8 and complete all courses with a grade of "C" or better. Students must also apply for admission to the School of Nursing; admission is competitive and students are **strongly advised** to consult with an RU transfer advisor. If admitted, students may complete the upper division nursing courses at the Roanoke Higher Education Center, so it is possible to complete all of the Baccalaureate Degree Nursing requirements without leaving the Roanoke Valley.

Students who are preparing to attend a nursing program at a college other than Radford University should check that college's degree requirements to determine if substitutions in Virginia Western's course requirements should be requested. Early contact with an advisor at the transfer institution is **strongly encouraged**.

Occupational Objectives: In addition to Nursing other transfer options include: Nutrition, Health Education, or Allied Health Programs such as physical or occupational therapy.

Admission Requirements: Applicants must meet the general requirements for admission to the college.

Developmental courses **are** required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

Students who place into college-level classes and have not completed Pre-calculus or Trigonometry in high school with a grade of "A" within the past three years or who have not completed a college level Pre-calculus or Pre-calculus with Trigonometry (or equivalent) course will be required to take MTH 163 or MTH 166.

Health Sciences Specialization (02)

Curriculum and Other Requirements		Credits
General Education Core Courses		
CST 100	Principles of Public Speaking	3
ENG 111-112	College Composition I-II	6
ENG 241*	Survey of American Literature I (or ENG 243)	3
HIS 121	United States History I (or HIS 111)	3
ITE 115	Intro Computer Applications and Concepts	3
MTH 151*	Liberal Arts Mathematics I	3
MTH 152[1,*]	Liberal Arts Mathematics II (or MTH 157)	3
PLS 211	U.S. Government I (or ECO 201)	3
PSY 200	Principles of Psychology	3
PSY 230[2]	Developmental Psychology (or PSY 231)	3
SOC 200	Principles of Sociology	3
SDV 100	College Success Skills (or SDV 108)	1
Health Sciences and Related Courses		
BIO 141-142	Human Anatomy & Physiology I-II	8
CHM 111-112*	College Chemistry I-II	8
HLT 230	Principles of Nutrition and Human Development	3
NAS 185*	Microbiology	4
Total Minimum Credits for Degree		**60**

[1] Students interested in transferring to Radford University must take MTH 157.

[2] Students interested in transferring to Radford University must take PSY 235.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF SCIENCE DEGREE (880)

Science cont'd

Suggested Schedule

First Year

Fall
CHM 111
ENG 111
HIS 121 or HIS 111
MTH 151
PSY 200
SDV 100 or SDV 108

Spring
CHM 112
ENG 112
HLT 230
ITE 115
MTH 152 or MTH 157

Second Year

Fall
BIO 141
ENG 241 or ENG 243
PLS 211or ECO 201
SOC 200

Spring
BIO 142
CST 100
NAS 185
PSY 230 or PSY 231

ASSOCIATE OF SCIENCE DEGREE (880)

Science cont'd

Purpose: The **Specialization in Integrated Environmental Studies** is designed for students seeking a variety of professional and/or technical goals in the sciences, such as environmental science, ecology or forestry. Students will integrate knowledge from the sciences, mathematics, social sciences, and technology to develop skills and prepare for technical positions or for transfer to four-year institutions. Students preparing for transfer are urged to familiarize themselves with requirements of the major department at the college/university where transfer is contemplated, and consult with their faculty advisor.

Occupational Objectives: Graduates may choose to transfer to college/universities offering Bachelor of Science Degrees in Environmental Science, Forestry, Wildlife Science, Environmental Resource Management and Watershed Management. Graduates may also pursue employment at the technical level as natural resource technicians, agricultural technicians, land resources technicians, or waste water management technicians.

Admission Requirements: Applicant must meet the general requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

Suggested Schedule

First Year/Fall	Spring
BIO 101	BIO 102
ENG 111	ENG 112
ENV 161	ENV 162
PHI 102	MTH 157
PLS 211	PLS 212
SDV 100 or SDV 108	
Second Year/Fall	**Spring**
Pick 2 of next 3 courses:	Pick 2 of next 3 courses:
*BIO 270	*BIO 271
*CHM 111	*CHM 112
*ENV 221	*GOL 105
HLT/PED	BIO 285
GEO 210	HUM 202
MTH 271	

Integrated Environmental Studies (IES) Specialization (05)

Curriculum and Other Requirements General Education Core Courses	Credits
BIO 101-102* .. General Biology I-II	8
ENG 111-112* College Composition I-II	6
GEO 210 ..... Cultural Geography	3
HLT/PED[3] ..... Health or Physical Education	1
HUM 202[1] ..... Survey of Western Culture II	3
PHI 102[1] ..... Introduction to Philosophy	3
PLS 211-212[2] ... U.S. Government I-II	6
SDV 100 ..... College Success Skills (or SDV 108)	1

IES and Related Courses

BIO 285 ..... Biological Problems in Contemporary Society	3
ENV 161 ..... Intro to Environmental Compliance	3
ENV 162 ..... Environmental Principles in Public Health	3
MTH 157* ..... Elementary Statistics	3
MTH 271[4] ..... Applied Calculus I	3
Four IES electives from the following 4-credit courses	16
BIO 270* General Ecology	
BIO 271* Introduction to Ecological Systems	
CHM 111*[5] College Chemistry I	
CHM 112*[5] College Chemistry II	
ENV 221 Natural Resource Management	
GOL 105* Physical Geology	
Total Minimum Credits for Degree	**62**

[1] Students who have completed two years of high school Spanish with a "B" average may complete SPA 201 instead of HUM 202 or PHI 102. Students without high school Spanish may substitute SPA 101 and SPA 102 for HUM 202 and PHI 102.

[2] ECO 201-202 may be taken in place of PLS 211-212.

[3] One credit of Health (HLT) or Physical Education (PED) is required of all students. Consult approved Transfer Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service. Some four-year schools require 2 credits of HLT/PED.

[4] Based on their academic history, students may be required to take MTH 163 prior to enrolling in MTH 271. If needed, MTH 163 should be taken the semester before a student enrolls in MTH 271.

[5] Chemistry requirements vary with 4-year schools. Please check the degree requirements at the school you plan to transfer to as a guide for determining which chemistry courses, if any, you should complete for your degree program.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF SCIENCE DEGREE (880)

Science cont'd

Purpose: The **Specialization in Mathematics** is designed for students who plan to transfer to a four-year college or university and major in mathematics, mathematics education, or statistics.

Occupational Objectives: Students who complete the two-year AS degree will be prepared to begin junior-level mathematics courses at any college or university offering a mathematics degree. The program is also suitable for students pursuing transfer and degrees in physics, chemistry, engineering or computer science.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into the pre-requisite course for calculus (MTH 163 or 166) on the placement test will be required to take developmental courses. Students who place into college-level classes and have not completed Pre-calculus or Trigonometry in high school with a grade of "A" within the past three years or who have not completed a college level Pre-calculus or Pre-calculus with Trigonometry (or equivalent) course will be required to take MTH 163 or MTH 166.

Suggested Schedule

First Year/Fall	Spring
CHM 111	CHM 112
EGR 126 (CSC 201)	ENG 112
ENG 111	HIS 121
HLT/PED	HLT/PED
MTH 175	MTH 176
SDV 100 or SDV 108	MTH 178
Second Year/Fall	**Spring**
MTH 277	CST 100
MTH 285	MTH 287
PHY 241	MTH 291
Humanities/Fine Arts	PHY 242
Social Science Elective	Social Science Elective

Mathematics Specialization (04)

Curriculum and Other Requirements		Credits
General Education Core Courses		
CST 100	Principles of Public Speaking	3
ENG 111-112	College Composition I-II	6
HIS 121	United States History I (or HIS 111)	3
HLT/PED[1]	Health or Physical Education	1
MTH 175-176*	Calculus of One Variable I-II	6
MTH 178	Topics in Analytic Geometry	2
SDV 100	College Success Skills (or SDV 108)	1
E[2]	Social Science Elective	6
E[3]	Humanities/Fine Arts Elective	3
Mathematics and Related Courses		
CHM 111-112*	College Chemistry I-II	8
EGR 126	Computer Programming for Engineers (or CSC 201)	3
MTH 277*	Vector Calculus	4
MTH 285*	Linear Algebra	3
MTH 287	Mathematical Structures	3
MTH 291	Differential Equations	3
PHY 241-242*	University Physics I-II	8
Total Minimum Credits for Degree		**63**

[1] One credit of Health (HLT) or Physical Education (PED) is required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Social Science electives must be selected from the "Approved List of Transfer Courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF SCIENCE DEGREE (880)

Science cont'd

Purpose and Occupational Objectives: The **Specialization in Medical Technology** is designed specifically for those students who plan to obtain an AS degree in Science from Virginia Western and then transfer to Radford University, Department of Biology to complete the upper division coursework required for the degree in Medical Technology through the articulation agreement in place between VWCC and RU. Students may elect to complete the Associate Degree on either a full time or part-time basis.

In order to meet the requirements of the articulation agreement, the following conditions must be met.

1. Students must fulfill all of the course and credit hour requirements of the curriculum plan for Pre-Medical Technology majors leading to the Associate of Science-Science Degree, with a minimum of 25% of the credits completed at VWCC. Comparable courses and credits transferred from another VCCS institution may be accepted to fulfill the Associate Degree requirements; transfer courses must be completed with a grade of "C" or better.
2. Students will sign a letter of intent at least one year prior to transfer, and will work with an assigned advisor at Radford University and VWCC to ensure that an appropriate curriculum map and plan for timely graduation is established.
3. In order to receive transfer credit at Radford University, all coursework must be complete with a grade of "C" or better. A minimum grade point average of 2.5 is required for admission to the Medical Technology program.

Admission Requirements: Applicant must meet the general admission requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

Medical Technology Specialization (06)

Curriculum and Other Requirements General Education Core Courses		Credits
BIO 101*	General Biology I	4
CST 100	Principles of Public Speaking	3
ECO 201	Principles of Macroeconomics	3
ENG 111-112	College Composition I-II	6
HIS 121-122	United States History I-II	6
ITE 115	Intro Computer Applications and Concepts	3
MTH 157*	Elementary Statistics	3
MTH 163*	Pre-Calculus I	3
SDV 108	College Survival Skills (or SDV 100)	1
E[1]	Humanities/Fine Arts Elective	3

Medical Technology and Related Courses

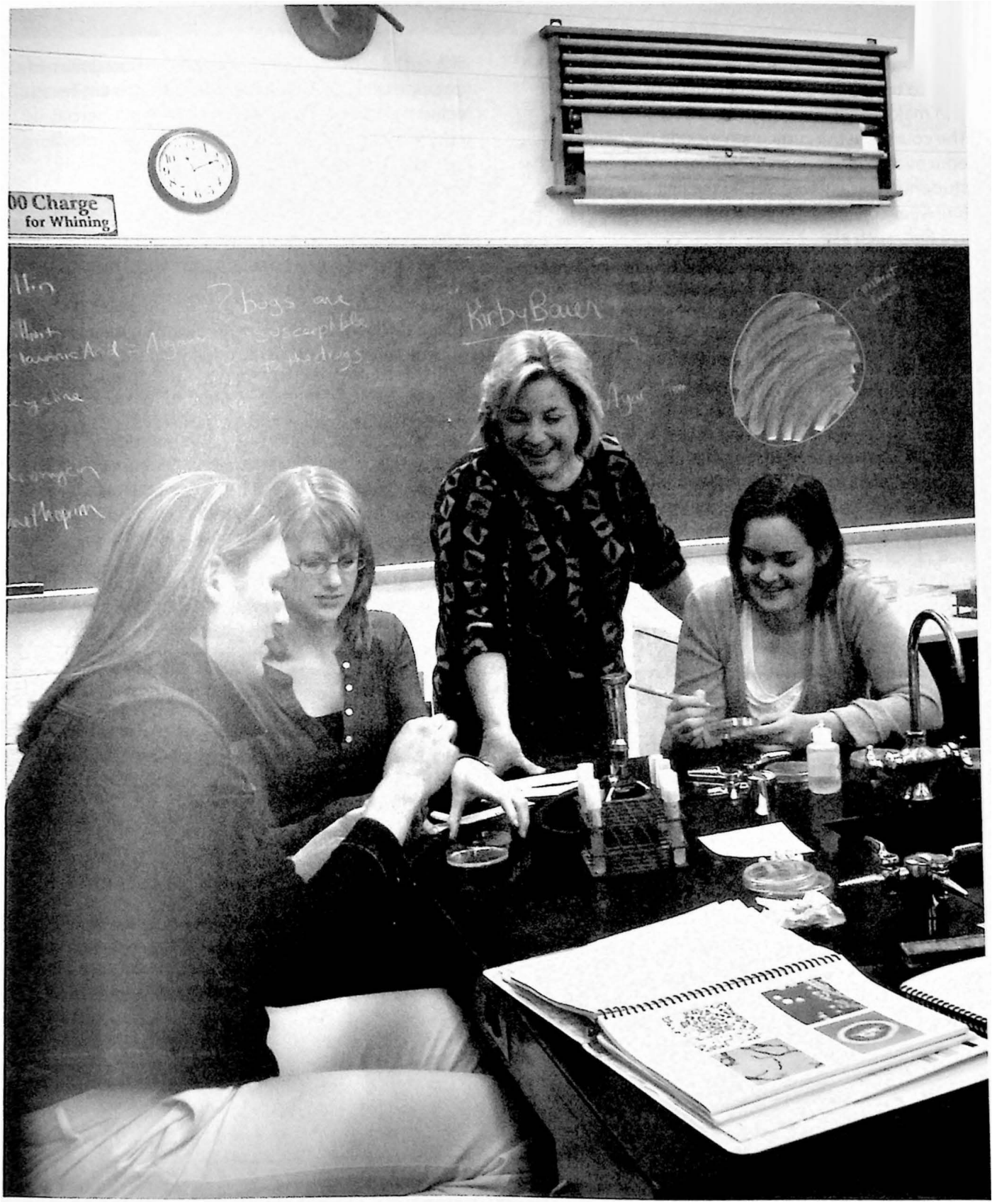
BIO 141-142*	Anatomy and Physiology I-II	8
CHM 111-112*	College Chemistry I-II	8
HLT 230	Principles of Nutrition and Human Development	3
NAS 185*	Microbiology	4
PHY 201*	General College Physics I	4
Total Minimum Credits for Degree		**62**

[1] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year/Fall	Spring
BIO 101	CHM 112
CHM 111	CST 100
ENG 111	ECO 201
ITE 115	ENG 112
MTH 157	MTH 163
SDV 108	
Second Year/Fall	**Spring**
BIO 141	BIO 142
HIS 121	HIS 122
HLT 230	NAS 185
PHY 201	Humanities/Fine Arts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ASSOCIATE OF SCIENCE DEGREE (882)

Social Sciences

Purpose: The curriculum is designed for students who plan to transfer to a four-year college or university and major in a field in the area of Social Sciences. The courses in the curriculum include the general education courses and introductory major courses that students typically take during the first two years at a four-year college or university when they are majoring in a field such as:

- anthropology
  economics
- history
- pre-law
  political science
  psychology
- sociology

A Social Science A.S. Degree with a Specialization in Education is also offered for students who want to prepare to teach at the elementary or secondary school level. When selecting electives and arranging their program of study, students should consult with their faculty advisors and check the specific requirements of the major department in the college or university where they plan to transfer.

Occupational Objectives: A Social Sciences degree prepares students for a career in any field that deals with social aspects of human behavior. Social science graduates enter a wide variety of employment sectors including: business and finance areas, commercial, industrial and public sector management, professional and technical occupations, health and social work, the criminal justice system and education. Many students who pursue an undergraduate degree in social sciences eventually specialize in disciplines like anthropology, sociology, psychology, history, geography, and political science.

Admission Requirements: Applicants must meet the general requirements for admission to the college.

Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra II (MTH 4) and into college level mathematics (MTH 151, MTH 157, MTH 163) on the placement test will be required to take developmental courses.

ASSOCIATE OF SCIENCE DEGREE (882)

Social Sciences cont'd

Curriculum and Other Requirements General Education Core Courses	Credits
CST 100 ..... Principles of Public Speaking	3
ENG 111-112* College Composition I-II	6
ENG 241* ..... Survey of American Literature I (or ENG 243)	3
HIS 121-122 .... United States History I-II (or HIS 111-112)	6
HLT/PED ..... Health or Physical Education	2
ITE 115 ..... Intro Computer Applications and Concepts	3
MTH 151[2,*] ..... Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152[2,*] ..... Mathematics for the Liberal Arts II (or MTH 157 or MTH 271)	3
PSY 200 ..... Principles of Psychology	3
SOC 200 ..... Principles of Sociology	3
SDV 100 ..... College Success Skills (or SDV 108)	1
E[3] ..... Humanities/Fine Arts Elective	3
E[4] ..... Natural Science Sequence	8
E[5] ..... Social Science Electives	12
E[6] ..... Elective	3
Total Minimum Credits for Degree	**62**

[1] *Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.*

[2] *The completion of a two-semester sequence of MTH 151-152, MTH 151-157 or MTH 163-271 is strongly recommended. If planning on transfer, contact four-year institution for requirements. If planning on transfer, contact four-year institution for requirements.*

[3] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses." A two-semester sequence of the same course is strongly recommended. If planning on transfer, contact four-year institution for requirements.*

[4] *Natural Science elective must include a two-semester sequence of BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202. If planning on transfer, contact four-year institution for requirements.*

[5] *Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.*

[6] *Electives must be selected from the "Approved List of Transfer Courses." A two-semester sequence of the same course is recommended for transfer to most four-year institutions.*

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall	Spring
ENG 111	ENG 112
HIS 121 (or HIS 111)	HIS 122 (or HIS 112)
MTH 151 or MTH 163	MTH 157 or MTH 152 or MTH 271
SDV 100 or SDV 108	Social Science Elective
Social Science Elective	Natural Science Sequence
Natural Science Sequence	

Second Year

Fall	Spring
ENG 241 or ENG 243	CST 100
ITE 115	HLT/PED
PSY 200	Humanities/Fine Arts
Elective	SOC 200
Social Science Elective	Social Science Elective

Students preparing for future careers in mental health, psychology, or social work should contact immediately Richard Gaynor at (540) 857-7288 or Dr. Annemarie Carroll at (540) 857-6178.

ASSOCIATE OF SCIENCE DEGREE (882)

Social Sciences cont'd

Education Specialization (01)

Purpose: While this is a Social Sciences degree, the Specialization in Education is designed for persons who plan to transfer to a four-year college or university to prepare for a teaching career in Virginia at the elementary or secondary level. Students who wish to be teachers in Virginia must major in a content area such as history, English, mathematics, science, or interdisciplinary studies. Although the students will be required to complete several special professional education courses at the senior institution, they must major in an area besides education.

The following program of study is specifically designed for students transferring to either Radford University or Roanoke College that are preparing to teach at the elementary school level. Students who plan to transfer elsewhere or to teach at a different grade level should consult their faculty advisor and check senior institution requirements when planning their program of study and electives. Students who are considering certification in Early Childhood Education should contact the Early Childhood Program Head, Kim Gregory, at (540) 857-7270 for guidance. In order to prepare for junior class standing at a four-year college or university, the student usually must complete a program at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

Occupational Objectives: A Social Sciences degree with a specialization in education prepares students for a teaching career at the elementary or secondary school level. Social science graduates with a specialization in education may also find employment in sectors including: business and finance areas, commercial, industrial and public sector management, professional and technical occupations, health and social work, or the criminal justice system.

PRAXIS Exams: To teach in Virginia, students must pass the PRAXIS I and PRAXIS II examinations, which have replaced the National Teachers Exam. The PRAXIS I exam measures basic skills in reading, writing, and mathematics. It is used by some four-year colleges and universities as an admissions requirement into their teacher education programs. Virginia Western education students should check with the college or university that they plan to attend about the requirements for completing the PRAXIS I exam. The PRAXIS II exam measures content knowledge in the student's major field and is usually taken in the senior year at the four-year college or university.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

ASSOCIATE OF SCIENCE DEGREE (882)

Social Sciences cont'd

Curriculum and Other Requirements	Credits
Education Specialization (01)	
General Education Core Courses	
BIO 101-102[1,*] General Biology I-II	8
CST 100 Principles of Public Speaking	3
ENG 111-112 College Composition I-II	6
ENG 241* Survey of American Literature I	3
GEO 210 Cultural Geography	3
HIS 121-122 United States History I-II (or HIS 111-112)	6
HLT/PED[3] Health or Physical Education	2
ITE 115 Intro Computer Applications and Concepts	3
MTH 151[4] Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152[4,*] Mathematics for the Liberal Arts II (or MTH 157 or MTH 271)	3
PHI 101 Introduction to Philosophy (or PHI 102)	3
PLS 211 U.S. Government I (or ECO 201)	3
PSY 200 Principles of Psychology	3
SDV 100 College Success Skills (or SDV 108)	1
SOC 200 Principles of Sociology	3
E[5] Social Science Elective	3
Education and Related Courses	
ART 101 Art Appreciation I	3
EDU 100 Introduction to Education	1
MUS 121[6] Music Appreciation I	3
Total Minimum Credits for Degree	**63**

[1] Students transferring to Roanoke College may substitute CHM 111-112 or GOL 105-106 for BIO 101-102.

[2] Students transferring to Roanoke College should take PSY 235 instead of HIS 122. Students are urged to check with the transferring institution to which they plan to attend to determine if HIS 111/112 will better satisfy the history requirement.

[3] Students transferring to Roanoke College should take two different PED courses instead of HLT 110.

[4] The completion of a two-semester sequence of MTH 151-152, MTH 151-157 or MTH 163-271 is strongly recommended. If planning on transfer, contact four-year institution for requirements.

[5] Students transferring to Roanoke College should take PSY 236 instead of MUS 121.

[6] Social Science electives must be selected from the "Approved List of Transfer courses." If the student is transferring to a four-year institution, the student should select the Social Science Courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

First Year

Fall	Spring
BIO 101	BIO 102
ENG 111	EDU 100
HIS 121 or HIS 111	ENG 112
MTH 151 or MTH 163	HIS 122 or HIS 112
PSY 200	MTH 152 or MTH 157 or MTH 271
SDV 100 or SDV 108	PHI 101 (or PHI 102)

Second Year

Fall	Spring
ENG 241	ART 101
ITE 115	CST 100
GEO 210	HLT/PED
MUS 121	PLS 211 or ECO 201
SOC 200	Social Science Elective

Students preparing for future careers in mental health, psychology, or social work should immediately contact Richard Gaynor at (540) 857-7288 or Dr. Annemarie Carroll at (540) 857-6178.

CERTIFICATE

Surgical Technology

Distance Learning Program

Offered through partnership with Piedmont Virginia Community College

The Surgical Technology Certificate is offered through a distance learning partnership between Piedmont Virginia Community College, Virginia Western Community College, and Lewis-Gale Medical Center. Students complete general education requirements at Virginia Western. Surgical technology courses are offered through PVCC at Virginia Western via web-based conferencing technology.

Purpose: The one-year Certificate program is designed to provide the community with individuals who can function as surgical technologists. This program of study will provide students with an entry-level career in the health care field that is rewarding, in demand, and provides an opportunity for career advancement.

Program Philosophy: The Surgical Technology program is organized around the belief that as members of the surgical team, surgical technologists assist in the promotion of optimal health for persons with acute or chronic illnesses throughout the lifespan.

Surgical technology education balances the humanities, sciences, ethical principles, and technical skill ability. The curriculum is designed to support the personal and career development of students, and supports the belief that as students perform in the operating room they learn and develop their highest potential in a challenging environment. The Surgical Technology program values the diversity of our students' age, life experiences, and culture as this diversity reflects the society they will serve.

With today's rapidly changing health care system, students must develop skills and an appreciation for lifelong learning. For the Surgical Technology certificate graduate this may include further acquisition of technical skills and knowledge within the work setting and/or pursuit of additional formal education.

Occupational Objective: Surgical technologists currently are in high demand. This three-semester Surgical Technology certificate program will prepare individuals to perform selected activities in the operating room as an entry-level member of the surgical team. The certificate curriculum is designed to provide graduates the opportunity to become nationally certified as a surgical technologist.

Admission Requirements: Students who plan to complete the program through distance education at Virginia Western should follow this admission procedure:

1. Complete an online PVCC application, (www.pvcc.edu), in addition to the Surgical Technology Program application.

2. Have official copies of your high school and all other college transcripts sent to the PVCC Office of Admissions and Records. It is the student's responsibility to verify that transcripts have been received at PVCC. Transfer credits are evaluated by the registrar.

3. Complete assessment testing in reading, writing, arithmetic, and basic Algebra. Assessment testing must be completed by May 1 in order to be considered for August admission. This testing may be done at any community college and the results sent to PVCC.

4. Meet with the Health Technology Information Specialist at Virginia Western for interpretation of the assessment results. In addition, the specialist will recommend appropriate courses to be taken prior to entry into the Surgical Technology program. Completion of general education coursework on a part-time basis sometimes takes several years.

5. Complete all necessary prerequisite courses:

   A. **English** – this prerequisite may be satisfied through one of the following:

      1) Successful completion of required developmental English courses

      2) Test into ENG 111 by means of placement test, or previous college English class passed with a grade of "C" or better.

   B. **Math** – this prerequisite may be satisfied through one of the following:

CERTIFICATE

Surgical Technology cont'd

1) Successful completion of required developmental math courses through Math 3 (Algebra I) **within the past 8 years**.

2) Test out of Math 3 (Algebra I) by means of placement test or **within the past 8 years**.

3) Another college-level math course passed with a "C" or better **within the past 8 years** may be substituted for Algebra with the approval of the program director. **Completion of this course must be verified by an official transcript. Technical math and certain liberal arts math courses will not satisfy this prerequisite.**

C. **Science (Biology)** – this prerequisite may be satisfied through one of the following:

1) Completion of high school biology with a grade of "C" or better.

2) Completion of acceptable college-level biology.

3) Completion of NAS 2–Foundations of Life Science.

4) **Completion of above courses must be verified by an official transcript.**

6. Completion of the Surgical Technology program application by **May 1**. Go to: *http://www.pvcc.edu/surgtech*.

7. Attend an observational experience in an operating room at a local hospital.

This experience will be scheduled after the written application has been received and reviewed.

(See the Surgical Technology Program Information Booklet for more detailed description of requirements and admission procedures.) The booklet can be requested by phoning (434) 961-5445.

Students accepted into the program must provide the college with a health record as evidence of good physical and mental health and must be free of any condition which adversely affects performance as a surgical technologist.

Waiting List: Qualified applicants beyond space available will be ranked in order of priority for admission and placed on a waiting list. They will be notified in writing immediately if space becomes available in the entering class.

Curriculum Requirements: Students must receive a grade of "C" or better in the required general education and Surgical Technology courses. Because the Surgical Technology curriculum is cumulative, students must successfully complete all courses outlined in semester one before proceeding to semester two Surgical Technology courses, and all semester two courses must be passed before advancing to the third semester course.

Satisfactory performance in each laboratory and clinical component is necessary in all Surgical Technology courses. Attendance at all scheduled clinical experiences or faculty approved make-up time is mandatory. The College policy for classroom attendance is followed. In addition, Surgical Technology faculty reserve the right to take corrective action that may include withdrawal from the program for any student engaging in unprofessional or disruptive behavior in the classroom or clinical setting.

Part-time Study: Students are encouraged to complete some or all of the general education requirements before seeking admission to the program and beginning the surgical technology course sequence. (See the Surgical Technology Program Information Booklet for more detailed description of requirements and admission procedures.) The booklet can be requested at (434) 961-5445.

Other Requirements: Applicants must not have had legal action against them nor have pending legal action against them that would prevent employment in a health care setting. Students will be required to submit to a background check and drug test screening prior to beginning clinical.

CERTIFICATE

Surgical Technology cont'd

Curriculum and Other Requirements **Credits**

General Education Core Courses

ENG 111* ..... College Composition I 3
SDV 100 ..... Orientation 1

Surgical Technology and Related Courses

BIO 141-142* .. Human Anatomy and Physiology I-II 8
HLT 143 ..... Medical Terminology 3
NAS 185* ..... Microbiology 4
SUR 140 ..... Introduction to Surgical Care 4
SUR 145 ..... Fundamentals of Surgical Care 4
SUR 210 ..... Surgical Procedures 8
SUR 250 ..... Surgical Pharmacology 2
SUR 254 ..... Professional Issues 1
SUR 260 ..... Clinical Practicum 5
Total Minimum Credits for Certificate 43

** This course has a prerequisite. Prerequisites for all courses are listed in the course descriptions section in the back of the catalog.*

Suggested Schedule

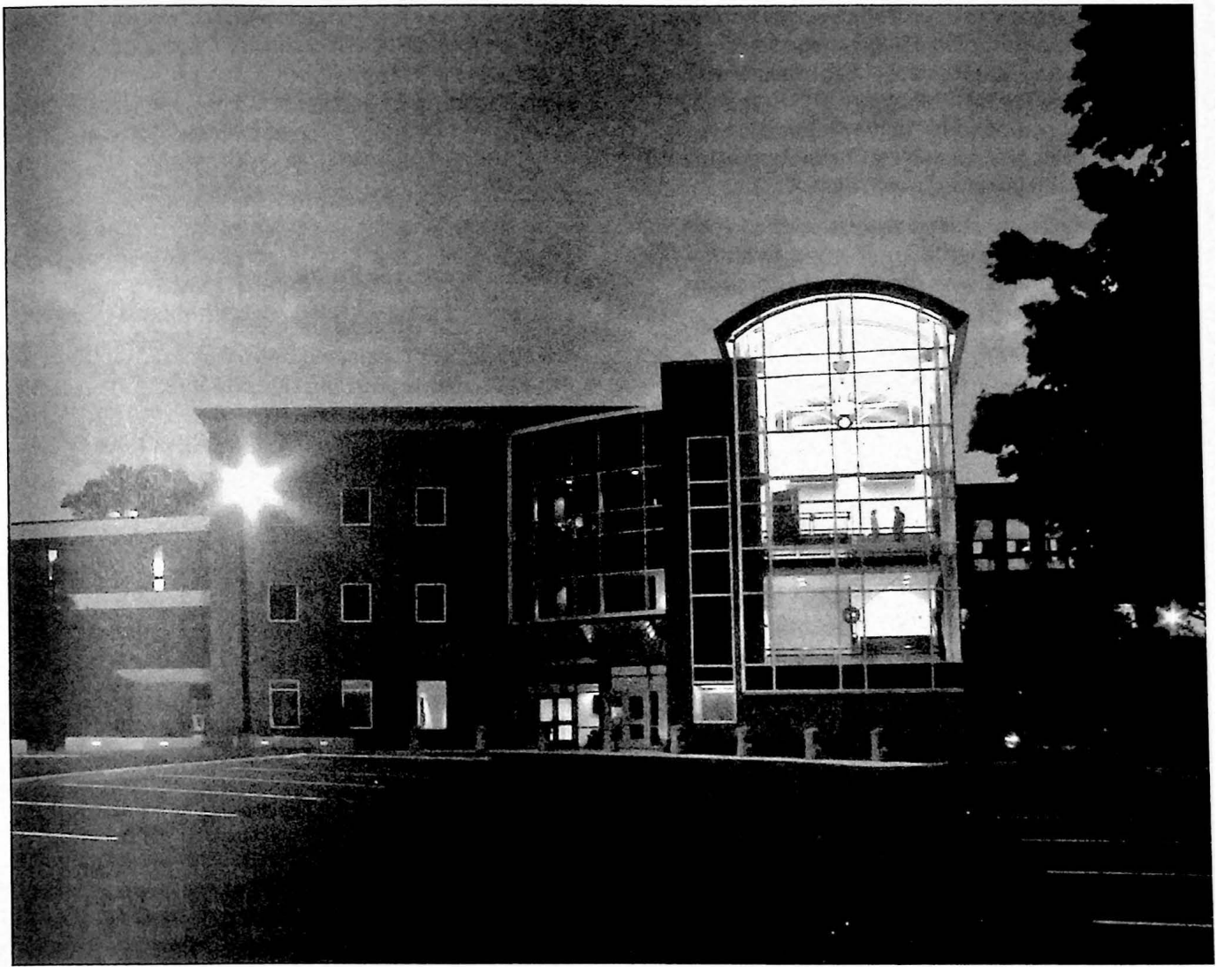
First Year

Fall	Spring
BIO 141	BIO 142
HLT 143	SDV 100
SUR 140	SUR 210
SUR 145	SUR 250

Second Year

Fall
ENG 111
NAS 185
SUR 254
SUR 260

***Note:** Surgical technology classes will be completed at Virginia Western through Web-based conferencing technology from PVCC.*



ASSOCIATE OF APPLIED SCIENCE DEGREE (718)

Technical Studies

Purpose: The Technical Studies curriculum is designed to meet the rapidly changing workforce training needs of business and industry. Focused on meeting short-term educational needs, the degree can also be used as a general studies degree to enhance the education and training of current employees or ensure basic technical and general work-based skills for new employees. The curriculum allows employers to develop a specific plan of study negotiated with, and approved by, appropriate college faculty and administrators. The basic structure of the curriculum includes four components (general education, a technical core, occupational-technical content area(s), and work-based learning.)

Customized plans of study may be designed and developed to meet specific company or industry needs, in accordance with the structure described below.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Suggested Schedule

First Year/Fall
ENG 111
ITE 115
MTH 120 (or MTH 151 or 166)
SAF 127
SDV 100 or SDV 108
Content Skills Elective
Technical Elective

Spring
CST 100
Content Skill Elective
Humanities/Fine Arts
Science/Technical Principles Elective
Technical Elective

Second Year/Fall
ENG 115 or AST 205
HLT/PED
IND 190
IND 230
Content Skills Elective
Social Science Elective

Spring
HLT/PED
IND 290
Content Skills Elective
Content Skills Elective
Social Science Elective
Technical Elective

Curriculum and Other Requirements

General Education Core Courses		Credits
CST 100	Principles of Public Speaking	3
ENG 111*	College Composition I	3
ENG 115	Technical Writing (or AST 205*)	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 120, 151 or MTH 166*	Introduction to Mathematics	3
SDV 100	College Success Skills (or SDV 108)	1
E[2]	Humanities/Fine Arts Elective	3
E[3]	Social Science Elective	6

Technical Studies and Related Courses		
EGR/IST	Technical Elective	3
IND 190	Coordinated Internship	3
IND 230	Applied Quality Control	3
IND 290	Coordinated Internship	3
IND/PHY	Science/Technical Principles Elective	4
SAF 127	Industrial Safety	2
TEL	Telecommunications Tech Elective	3
E	Content Skills Elective	3
E	Content Skills Elective	12
E	Technical Elective	4
Total Minimum Credits for Degree		**67**

Note: *Company representatives are invited to contact the School of Business, Engineering and Technology, (540) 857-7275, for more information.*

[1] *Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.*

[2] *Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.*

[3] *Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.*

** This course has a prerequisite. Prerequisites for all courses are listed in the course descriptions section in the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE DEGREE (718)

Technical Studies cont'd

Purpose: This degree combines the concepts and practices of mechanical and electrical processes in order to manipulate motorized, hydraulic, and pneumatic machines to perform complex automated functions in an industrial or manufacturing setting. Students develop the skills to assemble, install, test and troubleshoot, calibrate, and service a variety of devices, products and electronic instruments. Coursework also includes collaborative projects in which students form teams with another program area to build a factory, enabling them to apply their skills and knowledge to a simulated work experience.

Occupational Objectives: Entry-level or advancement opportunities at automated manufacturing and computer aided industrial sites. Positions include mechanical, maintenance, electrical, quality, computer, process, and manufacturing technicians. Other job titles may include electronic service technician or industrial electrician.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. Developmental courses are required for students with deficiencies in English and mathematics.

Students who do not place into college-level English on the placement test will be required to take developmental courses (i.e., ENG 1, ENG 3, ENG 4, ENG 7).

Students who do not place above Algebra I (MTH 3) and into Algebra II (MTH 4) or higher on the placement test will be required to take developmental courses.

Program Requirements: It is strongly recommended that students take ENG 111 in the first semester of coursework.

Suggested Schedule

First Year/Fall	Spring
ELE 133	ELE 134
ENG 111	ETR 123
ITE 115	ETR 141
MTH 115 or MTH 166	HLT/PED
SAF 127	IND 230
SDV 101	MEC 162
Second Year/Fall	**Spring**
BLD 111	ETR 286
CST 100	IND 290
ELE 239	MEC 155
ENG 115 or AST 205	PHY 202
MEC 119	Humanities/Fine Arts
PHY 201	Social Science Elective

Curriculum and Other Requirements — Credits

Mechatronics Technology Specialization (01)

General Education Core Courses

CST 100	Principles of Public Speaking	3
ENG 111*	College Composition I	3
ENG 115	Technical Writing (or AST 205*)	3
HLT/PED[1]	Health or Physical Education	2
MTH 115*	Tech. Mathematics (or MTH 166)	3
PHY 201-202*	General College Physics I-II	8
SDV 101	Orientation: Introduction to Engineering and Tech	1
E[2]	Humanities/Fine Arts Elective	3
E[3]	Social Science Elective	3

Mechatronics Technology and Related Courses

BLD 111	Blueprint Reading and the Building Code	3
ELE 133-134*	Practical Electricity I-II	6
ELE 239*	Programmable Logic Controller Systems I	3
ETR 123**	Electronic Applications I	1
ETR 141**	Electronics I	3
ETR 286*	Prin and Applications of Robotics	3
IND 230	Applied Quality Control	3
IND 290	Coordinated Internship	3
ITE 115	Introduction to Computer Applications and Concepts	3
MEC 119	Introduction to Basic CNC and CAM	3
MEC 155	Mechanisms	2
MEC 162	Applied Hydraulics and Pneumatics	3
SAF 127	Industrial Safety	2
Total Minimum Credits for Degree		**67**

Note: *Company representatives are invited to contact the School of Business, Engineering and Technology, (540) 857-7275, for more information.*

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.

[2] Any three credit 100 or 200 level ART, ENG, FRE, HUM, MUS, PHI, REL or SPA elective may be used, except ENG 111, ENG 112 or ENG 210. CST 130, 131, 132 or 136 may also be used. Students intending to transfer should contact the four-year college and choose a humanities course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

[3] Any 100 or 200 level social science elective may be used. Students intending to transfer should contact the four-year college and choose a social science course from the "Approved List of Transfer Courses" that is recommended by their transfer institution.

**This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

***This course has a co-requisite. Co-requisites for all courses are listed in the course description section at the back of the catalog.*

ASSOCIATE OF APPLIED SCIENCE DEGREE

Veterinary Technology

Distance Learning Program

Offered through partnership with Blue Ridge Community College (BRCC)

This program is designed for those students who for personal or financial reasons cannot travel to Weyers Cave for the on-campus program. Students may complete general education requirements at Virginia Western. Veterinary technology courses are interactive, two-way audio and video, and are transmitted from Blue Ridge Community College to Virginia Western via compressed video technology three hours a day, two days a week.

Purpose: The program is designed to prepare students as veterinary technicians. In Virginia, licensed veterinary technicians working under the direct supervision of a licensed veterinarian may perform those tasks related to animal health except the diagnosis of disease, prescribing drugs, or performing surgery. Graduates of this program are eligible to take the National Veterinary Technician Exam (NVTE).

Occupational Objective: Veterinary technicians may be employed in a veterinary hospital, diagnostic/ research laboratory, the pharmaceutical industry, zoos/ wildlife centers, as sales and livestock managers, or veterinary educators.

Curriculum Admissions Standards: Applicants for the distance education program must:

1. Be a high school graduate or equivalent;
2. Have successfully completed high school Algebra and Biology;
3. Complete an application for admission to BRCC and submit official transcripts from high school and all colleges and universities attended;
4. Have completed or be in the process of completing the general education courses required for the AAS degree in Veterinary Technology.
5. Observe in a veterinary hospital for 16 hours;
6. Complete an interview with a member of the Veterinary Technology faculty at BRCC; Have completed or be in the process of completing the general education courses required for the AAS degree in Veterinary Technology;
7. Work for at least 20 hours per week with a veterinarian willing to provide supervision and opportunities to practice the tasks taught in the various courses;
8. Be committed to enrolling in all the courses for this program as they are offered;
9. Have documentation of current CPR certification.

The distance learning program has limited space and students will be selected on a competitive basis. An interview at BRCC will be required. Applications for the next class will be due January 31, 2012. Classes will start in June 2012.

Note: It is the student's responsibility to verify that transcripts have been received at BRCC. Transfer credits are evaluated by the registrar. Blue Ridge Community College currently transmits the Veterinary Technology Program to John Tyler Community College (Midlothian), Germanna Community College (Locust Grove), Tidewater Community College (Virginia Beach campus) and Virginia Western Community College in Roanoke using compressed video technology. Courses will be offered in sequence to allow a student who takes every course to finish in 9 semesters. The first VWCC class graduated in May 2003.

Students will be required to travel to the Weyers Cave Campus three times during the semester for laboratory work and practical exams.

ASSOCIATE OF APPLIED SCIENCE DEGREE

Veterinary Technology cont'd

Curriculum and Other Requirements	Credits
General Education Core Courses	

The following general education courses may be completed at Virginia Western prior to program admission:

ENG 111*	College Composition I (or ENG 137)	3
SDV 100	Orientation	1
CHM 111*	College Chemistry I	4
HLT/PED	Health or Physical Education	2
E[1]	Humanities/Fine Arts Elective	3
E[1]	Social Science Elective	3

The following courses will be transmitted by BRCC to the VWCC distance site:

VET 100	Introduction to Animal Science	4
VET 105	Introduction to Veterinary Tech	3
VET 111	Anatomy and Physiology of Domestic Animals	4
VET 115	Laboratory Techniques I	4
VET 120	Veterinary Medical Terminology and Calculations	3
VET 121	Clinical Practices I	4
VET 210	Animal Diseases and Microbiology	4
VET 215	Laboratory Techniques II	4
VET 216	Animal Pharmacology	3
VET 217	Intro. to Laboratory, Zoo, and Wildlife Medicine	3
VET 221	Advanced Clinical Practices III	4
VET 222	Advanced Clinical Practices IV	4
VET 230	Veterinary Hospital Management	3
VET 236	Companion Animal Behavior	3
VET 290	Coord Practice in Veterinary Tech	4
VET 295	Advanced Surgical Nursing	3
Total Minimum Credits for Degree		**73**

[1] *Humanities/Fine Arts and Social Science electives must be selected from the "Approved List of Transfer Courses."*

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

CAREER STUDIES CERTIFICATE (221-828-72)

Water and Wastewater Technology

Purpose: The Water and Wastewater Technology career studies certificate program is designed to prepare students to become a water or wastewater plant operator in municipal and industrial treatment facilities and laboratories. Water treatment plant and system operators treat water so that it is safe to drink. Wastewater treatment plant and system operators remove harmful pollutants from domestic and industrial liquid waste so that it is safe to return to the environment. Operators in both types of plants control equipment and processes that remove or destroy harmful materials, chemical compounds, and microorganisms from the water. They also control pumps, valves, and other equipment that moves the water or wastewater through the various treatment processes, after which they dispose of the removed waste materials.

Occupational Objectives: Coursework in this program prepares students for the state certification exam required for a water or wastewater operator's license. This license is essential for career advancement. There are minimum educational and experience requirements depending on the various licensure levels. All levels require a high school or GED diploma, training, and on-the-job experience.

Operators must pass an examination certifying that they are capable of overseeing water/ wastewater plant operations. There are different levels of certification, depending on the operator's experience and training. Both Water and Waste Water operators are licensed by experience and education by the Virginia Board for Waterworks and Wastewater Works Operators through the Virginia Department of Professional and Occupational Regulation (DPOR).

Admission Requirements: Applicants must meet the general requirements for admission to the college. To be successful in this program, students must have demonstrated Math competency to be placed in Pre-Algebra. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements	Credits
General Education Core Courses	
PSY 120 ..... Human Relations	3
Water and Waste Water Technology and Related Courses	
ENV 110 ..... Introduction to Water and Wastewater Treatment Technology	3
ENV 115 ..... Water Purification	3
ENV 148 ..... Math for Water and Wastewater Op	3
ENV 149 ..... Wastewater Treatment Plant Op	3
SAF 127 ..... Industrial Safety	2
Total Minimum Credits for Certificate	**17**

Suggested Schedule

Fall	Spring
ENV 110	ENV 115
ENV 148	ENV 149
SAF 127	PSY 120

Note: *Additional courses may be offered for DPOR Water and Wastewater Licensure.*

CAREER STUDIES CERTIFICATE (221-995-94)

Welding: Intensive Welding Training

Purpose: The demand for welding professionals continues to rise across the country. Welders work in manufacturing, construction, maintenance and repair occupations in a wide variety of fields. This intensive program is designed to prepare the student for entry-level full-time employment in the welding trade. As distinguished from the college's traditional Welding certificate (995) program, this is an intensive program designed to prepare one for the workplace as quickly as possible. Courses, developed with significant input from area employers, include mathematics, print reading, drafting, industrial dynamics and lab-oriented welding classes. Students also participate in a welding internship with a local company that could be a future employer.

Intensive welding is a cohort-based summer semester program held each year from May until August (actual dates vary each year). Programs held in even numbered years (2010) are operated during morning and early afternoon hours. Programs held in odd numbered years (2011) are operated during late afternoon and evening hours. Classes are normally held Mondays through Fridays and have a strict attendance policy. All classes will be held on the main campus. Call (540) 857-6076 for more information, details on the application process and application deadlines.

Occupational Objectives: Entry level welder with skills in SMAW, GMAW, and GTAW.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

To be successful in this program, students must have demonstrated Math competency to be placed in Pre-Algebra. Students not achieving this level will be required to take developmental courses.

Curriculum and Other Requirements	Credits
General Education Core Courses	
SDV 106 ..... Preparation for Employment	1
Intensive Welding and Related Courses	
DRF 161 ..... Blueprint Reading I	2
IND 75 ..... Industrial Measurements and Conversions	1
WEL 116 ..... Welding 1	2
WEL 121* ..... Arc Welding	2
WEL 135* ..... Inert Gas Welding (MIG)	2
WEL 136 ..... Inert Gas Welding (TIG)	2
WEL 150 ..... Welding Drawing and Interpretation	3
WEL 290 ..... Welding Internship	1
Total Minimum Credits for Certificate	**16**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

Summer
DRF 161
IND 75
SDV 106
WEL 116
WEL 121
WEL 135
WEL 136
WEL 150
WEL 290

CAREER STUDIES CERTIFICATE (221-995-47)

Welding: Welding and Metal Processing

Purpose: The Career Studies in Welding and Metal Processing offers instruction in the principles and practices of welding processes. Successful completion of the program provides sufficient training for entry into the field of production-type welding. Students have access to the latest instructional and practical experiences in a high-technology, modern shop facility.

Occupational Objectives: Arc, gas, mig, and/or tig welder; metal fabricator.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college. To be successful in this program, students must have proficiency in oral and written communication skills and general mathematics.

Program Requirements: The purchase of personal safety equipment is the financial responsibility of the individual student.

Curriculum and Other Requirements **Credits**
Welding and Metal Processing Courses

DRF 161	Blueprint Reading I	2
SAF 127	Industrial Safety	2
WEL 120	Fundamentals of Welding	3
WEL 121*	ARC Welding	2
WEL 130*	Inert Gas Welding	3
WEL 135*	Inert Gas Welding	2
WEL 145	Welding Metallurgy	3
Total Minimum Credits for Certificate		**17**

** This course has a prerequisite. Prerequisites for all courses are listed in the course description section at the back of the catalog.*

Suggested Schedule

Fall	Spring
DRF 161	SAF 127
WEL 120	WEL 121
WEL 145	WEL 130
	WEL 135

CAREER STUDIES CERTIFICATE (221-190-02)

Wellness

Purpose: Many students seek post secondary career programs of study that are less than the conventional one or two-year programs. This certificate in Wellness is intended for the young student or adult who wishes to explore their potential in a college setting and examine avenues for personal growth and improvement. Each of the required courses are selected to enhance an individual's own potential and many will transfer to four year schools should the student elect to continue their education.

Occupational Objective: This program is designed to provide skills related to developing and maintaining a healthy lifestyle and understanding the dimensional components of personal wellness.

Admission Requirements: Applicants must meet the general admission requirements for admission to the college.

Curriculum and Other Requirements	Credits
General Education Core Courses	
PSY 200 ..... Principles of Psychology (or PSY 230)	3
SDV 100 ..... College Survival Skills	1
Wellness and Related Courses	
HLT 100 ..... First Aid, Safety and CPR	3
HLT 116 ..... Intro to Personal Wellness	2
HLT 240 ..... Consumer Health	3
PED 107 ..... Exercise and Nutrition	2
PED 109 ..... Yoga	1
PED 170 ..... Tai Chi for Health	1
E ..... Physical Education Elective	1
Total Minimum Credits for Degree	**17**

Suggested Schedule

Fall	Spring
HLT 116	HLT 100
HLT 240	PED 109
PED 107	PSY 200
PED 170	PE Elective

Description of Courses

Continuing Education and Community Services Programs

In order to provide the widest possible diversification of educational opportunity, Virginia Western Community College schedules credit and noncredit courses and programs to meet educational and training needs outside the realm of traditional college studies. These include classes, institutes, forums, workshops, lectures, and courses to provide: (1) individual cultural enrichment; (2) individual job skill improvement; (3) hobby and leisure-time activity training; (4) service to business and industry in upgrading employee skills; and (5) special services focused on societal and community development. State general-fund tax dollars are not used to support noncredit community service programs.

General Course Information

Course Numbers

Courses numbered 01-09 are developmental studies courses. These courses are designed to prepare students for college-level courses (primarily in the areas of English and mathematics). The credits earned in these courses are not applicable toward associate degree programs. These courses are graded on a Satisfactory/ Unsatisfactory basis and they do not affect students' grade point average. Students enrolled in developmental courses who do not achieve a Satisfactory (S) grade should re-enroll in order to complete all course objectives. Students ordinarily may repeat a course only once (refer to the policy on Repeating a Course).

Courses numbered 10-99 are basic occupational courses for certificate programs. The credits earned in these courses are applicable toward diploma and certificate programs but are not applicable toward an associate degree.

Courses numbered 100-199 are freshman courses applicable toward an associate degree or certificate, and courses numbered 200-299 are sophomore courses applicable toward an associate degree or certificate.

Course Credits

The credit for each course is indicated after the title in the course description. One credit is equivalent to one collegiate semester hour.

Course Hours

The number of lecture hours in class each week (including lecture, seminar, and discussion hours) and/or the number of laboratory hours in class each week (including laboratory, shop, supervised study, and cooperative work experiences) are indicated for each course in the course description. The number of lecture and laboratory hours in class each week are also "contact" hours because it is time spent under the direct supervision of a faculty member.

Course Prerequisites

If any prerequisites are required before enrolling in a course, these prerequisites will be identified in the course description. Courses in special sequences (usually listed as I-II-III) require that prior courses or their equivalent be completed before enrolling in the advanced courses in that sequence. When corequisites are required for a course, usually the co-requisites must be taken at the same time. The prerequisites or their equivalent must be completed satisfactorily before enrolling in a course unless special permission is obtained from the division chair and the Dean of Academic and Student Affairs.

General Usage Courses

The following "General Usage Courses" apply to multiple curricula and all prefix disciplines. General usage courses may be repeated for credit, and may include lecture, laboratory, out-of- class study, or a combination thereof.

(Insert appropriate prefix) 90, 190, 290 Coordinated Internship in *(Insert appropriate discipline)* (1–5 CR). Supervises on-the-job training in selected business, industrial, or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(Insert appropriate prefix) 93, 193, 293 Studies in ***(Insert appropriate discipline)*** (1–5 CR). Covers new content not covered in existing courses in the discipline. Allows instructor to explore content and instructional methods to assess the course's viability as a permanent offering. A "Studies in" course is intended as an experimental course to test its viability as a permanent offering. Each offering of the course must be approved by the Chief Academic Officer or designee. An experimental course may be offered twice, after which

course must be approved under the appropriate discipline according to VCCS processes for adding new courses to the Master Course File. Variable hours per week.

(Insert appropriate prefix) 95, 195, 295 Topics in *(Insert appropriate discipline)* (1–5 CR). Provides an opportunity to explore topic areas of an evolving nature or of short-term importance in the discipline. Variable hours per week. A "Topics in" course is intended to cover topics of an evolving nature or of short-term importance in the discipline. The course shall be approved by the academic VP or designee for a period up to two years. The Chief Academic Officer or designee may approve an extension of another two-year period, after which the course must be approved under the appropriate discipline according to VCCS processes for adding new courses to the Master Course File.

(Insert appropriate prefix) 96, 196, 296 On-site Training in *(Insert appropriate discipline)* (1–5 CR). Offers opportunities for career orientation and training without pay in selected businesses and industry. Supervised and coordinated by the college. Credit/work ratio not to exceed 1:5 hours. Variable hours per week.

(Insert appropriate prefix) 97, 197, 297 Cooperative Education in *(Insert appropriate discipline)* (1–5 CR). Provides on-the-job training for pay in approved business, industrial and service firms. Applies to all career-technical curricula at the discretion of the college. Credit/work ratio not to exceed 1:5 hours. Variable hours per week.

(Insert appropriate prefix) 98, 198, 298 Seminar and Project in *(Insert appropriate discipline)* (1–5 CR). Requires completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(Insert appropriate prefix) 99, 199, 299 Supervised Study in *(Insert appropriate discipline)* (1–5 CR). Assigns problems for independent study outside the normal classroom setting under the guidance and direction of an instructor. Incorporates prior experience and instruction in the discipline. Variable hours per week. Exceptions to the credit limit may be granted by the Chief Academic Officer.

ACC- Accounting

ACC 110 Introduction to Computerized Accounting I (1 CR) Introduces the computer in solving accounting problems. Focuses on the operation of computers. Presents the accounting cycle and financial statement preparation in a computerized system and other applications for financial and managerial accounting. Lecture 1 hour per week.

ACC 124 Payroll Accounting I (3 CR) Presents accounting systems and methods used in computing and recording payroll to include payroll taxes and compliance with federal and state legislation. Lecture 3 hours per week.

ACC 211 Principles of Accounting I (4 CR) Prerequisite: Math and Algebra or the equivalent proficiency. Presents accounting principles and their application to various businesses. Covers the accounting cycle, income determination, and financial reporting. Studies services, merchandising, and includes internal controls. Computerized component is included. Lecture 4 hours.

ACC 212 Principles of Accounting II (4 CR) Prerequisites: ACC 211. Continues Accounting Principles 211 with emphasis on the application to partnerships, corporations and the study of financial analysis. Includes an introduction to cost and managerial accounting. Computerized component is included. Lecture 4 hours.

ACC 215 - Computerized Accounting (3 CR) Introduces the computer in solving accounting problems. Focuses on operation of computers. Presents the accounting cycle and financial statement preparation in a computerized system and other applications for financial and managerial accounting. Prerequisite or corequisite ACC 211 or equivalent. Lecture 3 hours per week.

ACC 221 Intermediate Accounting I (4 CR) Prerequisites: ACC 212 or equivalent and BUS 125. Offered in fall semester only. Covers accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities and investments. Introduces various accounting approaches and demonstrates the effect of these approaches on the financial statement users. Lecture 4 hours per week.

ACC 231 Cost Accounting I (3 CR) Prerequisite: ACC 212 or equivalent. Offered in fall semester only. Studies cost-accounting methods and reporting

as applied to job order, process, and standard cost accounting systems. Includes cost control and other topics. Lecture 3 hours per week.

ACC 261 Principles of Federal Taxation I (3 CR) Prerequisite: ACC 211. Presents the study of federal taxation as it relates to individuals and related entities. Includes tax planning, compliance and reporting. Lecture 3 hours per week.

ADJ - Administration of Justice

ADJ 100 Survey of Criminal Justice (3 CR) Presents an overview of the United States criminal justice system; introduces the major system components–law enforcement, judiciary, and corrections. Lecture 3 hours per week.

ADJ 105 The Juvenile Justice System (3 CR) Presents the evolution, philosophy, structures and processes of the American juvenile delinquency system; surveys the rights of juveniles, dispositional alternatives, rehabilitation methods and current trends. Lecture 3 hours per week.

ADJ 107 Survey of Criminology (3 CR) Surveys the volume and scope of crime; considers a variety of theories developed to explain the causation of crime and criminality. Lecture 3 hours per week.

ADJ 120 Introduction to Courts (3 CR) Presents an overview of the American judiciary (the federal and 50 state judicial systems) with emphasis on criminal court structures, functions, and personnel; surveys the judicial system in the Commonwealth of Virginia. Lecture 3 hours per week.

ADJ 130 Introduction to Criminal Law (3 CR) Surveys the general principles of American criminal law, elements of major crimes, and basic steps of prosecution procedure. Lecture 3 hours per week.

ADJ 140 Introduction to Corrections (3 CR) Focuses on societal responses to the offender. Traces the evolution of practices based on philosophies of retribution, deterrence, and rehabilitation. Reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system. Lecture 3 hours per week.

ADJ 227 Constitutional Law for Justice Personnel (3 CR) Surveys the basic guarantees of liberty described in the U.S. Constitution and the historical development of these restrictions on government power, primarily through U.S. Supreme Court decisions. Reviews rights of free speech, press, assembly, as well as criminal procedure guarantees (to counsel, jury trial, habeas corpus, etc.) as they apply to the activities of those in the criminal justice system. Lecture 3 hours per week.

ADJ 229 Law Enforcement and the Community (3 CR) Considers current efforts by law enforcement personnel to achieve an effective working relationship with the community. Surveys and analyzes various interactive approaches of law enforcement agencies and the citizenry they serve. Lecture 3 hours per week.

ADJ 236 Principles of Criminal Investigation (3 CR) Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling and preserving of evidence. Lecture 3 hours per week.

ADJ 237 Advanced Criminal Investigation (3 CR) Prerequisite: ADJ 236 or division approval. Introduces specialized tools and scientific aids used in criminal investigation. Applies investigative techniques to specific situations and preparation of trial evidence. Lecture 3 hours per week.

ADJ 290 Administration of Justice Internship (1–5 CR) Supervised on-the-job training in administration of justice business or firm coordinated by the college. Variable hours per week

AIR – Air Conditioning and Refrigeration

AIR 121 Air Conditioning and Refrigeration I (3 CR) Prerequisite: MTH 2 or equivalent. Co-requisite: ELE 130 or ELE 133. Studies refrigeration theory, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Provides laboratory application of refrigerators and freezers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 122 Air Conditioning and Refrigeration II (3 CR) Prerequisite: AIR 121. Co-requisite: ELE 130 or ELE 134. Presents operations of commercial refrigeration systems, ice machines, design, installation and service, air conditioning and heat pumps. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 123 Air Conditioning and Refrigeration III (3 CR) Prerequisite: AIR 122. Psychometric properties of air, heat load and gain calculation, heated and chilled

ter systems, duct, design, air distribution and air comfort requirements. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 154 Heating Systems I (3 CR) Prerequisite: AIR 122 and ELE 130 or ELE 134. Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance and servicing. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ARC - Architecture

ARC 100 Introduction to Architecture (3 CR) Outlines history and impact of architecture. Emphasizes dynamics and social aspects of architecture and society; focuses on 19th and 20th century architectural forms. Lecture 3 hours per week.

ARC 133 Construction Methodology and Procedures I (3 CR) Studies materials used in construction of buildings, covering foundations to structural framing systems. Includes appropriate use of materials for various construction types. Includes specification of materials and installation procedures; types of specifications and writing procedures; bidding procedures and, contract documents. Lecture 3 hours per week.

ARC 221 Architectural CAD Applications Software I (3 CR) Prerequisite: DRF 202. Teaches the principles and techniques of architectural drawing practices through the use of architecture specific CAD software. Utilizes the commands and features of the software to generate drawings that emphasize architectural design and structural systems. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ARO - Aviation

ARO 121 Private Pilot Ground School (3 CR) Presents the fundamental principles of flight, including theory of flight, aircraft standards and specifications, basic aircraft construction, weight and balance, navigation, meteorology, principles of radio communication, and application of aerophysics. Prepares students for the FAA examination for private pilot rating. Lecture 3 hours per week.

ART – Art

ART 101-102 History and Appreciation of Art I-II (3 CR, 3 CR) Presents history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of western civilization to present. Lecture 3 hours per week.

ART 121-122 Drawing I-II (3 CR, 3 CR) Prerequisite for ART 122: ART 121. Develops basic drawing skills and understanding of visual language through studio instruction/lecture. Introduces concepts such as proportion, space, perspective, tone, and composition as applied to still life, landscape, and the figure. Uses drawing media such as pencil, charcoal, ink wash, and color media. Includes field trips and gallery assignments as appropriate. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 131-132 Fundamentals of Design I-II (3 CR, 3 CR) Prerequisite for ART 132: ART 131. Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 141 Typography I (3 CR) Prerequisites: ART 131 and 180. Studies the history of letter forms and typefaces and examines their uses in contemporary communications media. Emphasizes applications to specific design problems. Includes identification and specification of type, copy fitting and hands-on typesetting problems. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 180 Introduction to Computer Graphics (3 CR) Provides a working introduction to computer-based electronic technology used by visual artists and designers. Presents the basics of operating platforms and standard industry software. Introduces problems where students can explore creative potential of the new electronic media environment. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 221-222 Drawing III-IV (3 CR, 3 CR) Prerequisites: ART 121 and ART 122 for ART 221; ART 221 for ART 222. Introduces advanced concepts and techniques of drawing as applied to figure, still life, and landscape. Gives additional instruction in composition, modeling, space, and perspective. Encourages individual approaches to drawing. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 241-242 Painting I-II (3 CR, 3 CR) Prerequisites: For ART 241, prerequisite is ART 121 or departmental approval; for ART 242, the prerequisite is ART 241. Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 243-244 Watercolor I-II (3 CR, 3 CR) Prerequisites: For ART 243, prerequisite is ART 121 or departmental approval; for ART 244: ART 243. Presents abstract and representational painting in watercolor, with emphasis on design, color, composition, technique, and value. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 247 Painting Technique for Illustrators (3 CR) Prerequisites: ART 241 or ART 243. Introduces materials and techniques used by the illustrator. Includes water-soluble paints (watercolor, acrylic, gouache), oil-based paints, and mixed media. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 250 History of Design (3 CR) Surveys the development of graphic design and illustration with emphasis on the 19th and 20th centuries. Analyzes the work of outstanding designers and illustrators. Lecture 3 hours per week.

ART 251-252 Communication Design I-II (3 CR, 3 CR) Prerequisites: For ART 251 and 252: ART 180, ART 132, and ART 141. Studies principles of visual communications as applied to advertising in newspapers, magazines, direct mail advertising, house organs, etc.; studies these principles through both print design and web design. Analyzes the influence of contemporary art on design. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 282 Graphic Techniques (3 CR) Prerequisites: For ART 282: ART 180, ART 132, and ART 141. Focuses on using drawing instruments and materials. Introduces printing processes and mechanics of reproduction. Focuses on production and prepress issues as well as various technologies within the printing field. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 283-284 Computer Graphics I-II (3 CR, 3 CR) Prerequisite: ART 180. Utilizes microcomputers and software to produce computer graphics. Employs techniques learned to solve studio projects, which reinforce instruction and are appropriate for portfolio use. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 287 Portfolio and Resume Preparation (3 CR) Prerequisites: ART 141, ART 251, ART 282, and ART 283. Focuses on portfolio preparation, resume writing, and job interviewing for students. Recommended for final semester program students. Requires instructor's approval. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

ASL – American Sign Language

ASL 101-102 American Sign Language I-II (3 CR) ASL 102 prerequisite: ASL 101. Introduces the fundamentals of American Sign Language (ASL) used by the Deaf Community, including basic vocabulary, syntax, fingerspelling, and grammatical non-manual signals. Focuses on communicative competence. Develops gestural skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf Community. Lecture 3 hours per week.

ASL 201-202 American Sign Language III-IV (3 CR, 3 CR) Prerequisites: For ASL 201, prerequisite is ASL 102; for ASL 202: ASL 201. Develops vocabulary, conversational competence, and grammatical knowledge with a total immersion approach. Introduces increasingly complex grammatical aspects including those unique to ASL. Discusses culture and literature. Contact with the Deaf Community is encouraged to enhance linguistic and cultural knowledge. Lecture 3 hours.

AST – Administrative Support Technology

AST 101 Keyboarding I (3 CR) Teaches the alphanumeric keyboard with emphasis on correct techniques, speed, and accuracy. Teaches formatting of basic personal and business correspondence, reports, and tabulation. Lecture 3 hours per week.

AST 102 Keyboarding II - Windows (3 CR) Prerequisite: AST 101. Develops keyboarding and document production skills emphasizing preparation of specialized business documents and includes instruction in Windows. Continues skill-building for speed and accuracy. Lecture 3 hours per week.

AST 107 Editing/Proofreading Skills (3 CR) Develops skills essential to creating and editing business documents. Covers grammar, spelling, diction, punctuation, capitalization, and other usage problems. Lecture 3 hours per week.

AST 113 Keyboarding for Speed and Accuracy (1 CR) Prerequisite: AST 101 or equivalent. Focuses on improving keyboarding speed and accuracy through assigned exercises that diagnose problem areas. Emphasizes increased productivity

through improved speed and accuracy. Lecture 1 hour per week.

AST 114 Keyboarding for Information Processing (2 CR) Teaches the alphabetic and numeric keys; develops correct techniques and competency in the use of computer keyboards. May include basic correspondence and report formats. Lecture 2 hours per week.

AST 141 Word Processing I (Microsoft® Word) (3 CR) Prerequisite: AST 101 or equivalent. Teaches creating and editing documents, including line and page layouts, columns, fonts, search/replace, cut/paste, spell/ thesaurus, and advanced editing/formatting features of word processing software. Lecture 3 hours per week.

AST 154 Voice Recognition Applications (1 CR) Teaches the computer user to use the voice as an input device to compose documents and to give commands directly to the computer. Lecture 1 hour per week.

AST 205 Business Communication (3 CR) Prerequisites: A placement recommendation for ENG 111 or successful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG7). Teaches oral/ written communication techniques. Emphasizes writing and presenting business-related materials. Lecture 3 hours per week.

AST 232 Microcomputer Office Application (3 CR) Prerequisites: AST 101 and AST 141. Teaches production of business documents using presentations, databases, and spreadsheets. Emphasizes document production to meet business and industry standards. Lecture 3 hours per week.

AST 236 Specialized Software Applications (Microsoft® Office Web Expressions, Microsoft® Office Publisher) (2-4 CR) Prerequisites: AST 101 and AST 154. Teaches specialized integrated software applications on the microcomputer using web page design and desktop publishing. Emphasizes document production to meet business and industry standards. Lecture 3 hours per week.

AST 238 Word Processing Advanced Operations (3 CR) Prerequisite: AST 141. Teaches advanced word processing features including working with merge files, macros, and graphics; develops competence in the production of complex documents. Lecture 3 hours per week.

AST 243 Office Administration I (3 CR) Prerequisite: AST 101. Develops an understanding of the administrative support role and the skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes the development of critical-thinking, problem-solving, and job performance skills in a business office environment. Lecture 3 hours per week.

AST 244 Office Administration II (3 CR) Prerequisite: AST 243 or equivalent. Enhances skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes administrative and supervisory role of the office professional. Includes travel and meeting planning, office budgeting and financial procedures, international issues, and career development. Lecture 3 hrs. per week.

AST 245 Medical Machine Transcription (3 CR) Prerequisites: AST 107 and HLT 143. Develops machine transcription skills, integrating operation of transcribing equipment with understanding of medical terminology. Emphasizes dictation techniques and accurate transcription of medical documents in prescribed formats. Lecture 3 hours per week.

AST 247 Legal Machine Transcription (3 CR) Prerequisites: AST 102 and AST 107. Develops machine transcription skills, integrating operation of transcribing equipment with understanding of legal terminology. Emphasizes dictation techniques and accurate transcription of legal documents in prescribed formats. Lecture 3 hours per week.

AUT – Automotive Analysis and Repair

AUT 126 Auto Fuel and Ignition Systems (5 CR) Prerequisite: AUT 241. Studies automobile ignition and fuel systems, their functions in operation of engine. Includes carburetors, fuel pumps, ignition systems, troubleshooting, engine test and adjustment, tune-up. Lecture 2-4 hours. Laboratory 3-9 hours. Total 7-11 hours per week.

AUT 241-242 Automotive Electricity I-II (4 CR, 4 CR) Introduces electricity and magnetism, symbols, and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments, and gauges and accessories. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 265 Automotive Braking System (4 CR) Presents operation, design, construction, repair, and servicing of braking system, including anti-lock brake systems (ABS). Explains uses of tools and test equipment, evaluation of test results, estimation of repair cost for power, standard, and disc brakes. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 266 Auto Alignment, Suspension and Steering (4 CR) Introduces use of alignment equipment in diagnosing, adjusting, and repairing front and rear suspensions. Deals with repair and servicing of power and standard steering systems. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

BIO - Biology

BIO 100 Basic Human Biology (3 CR) Presents basic principles of human anatomy and physiology. Discusses cells, tissues, and selected human systems. Lecture 3 hours per week.

BIO 101 General Biology I (4 CR) Prerequisite: A placement recommendation for ENG 111 or succesful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG 7). Explores fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms, their structure, function, and evolution. Part I of II. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hrs. per week.

BIO 102 General Biology II (4 CR) Prerequisite: BIO 101 or equivalent. Explores fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms, their structure, function, and evolution. Part II of II. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hrs. per week.

BIO 141 Human Anatomy and Physiology I (4 CR) Prerequisite: recent high school biology or BIO 101. Integrates anatomy and physiology of cells, tissues, organs, and systems of the body. Integrates concepts of chemistry, physics and pathology. Part I of II. Lecture 3 hours per week. Laboratory 2-3 hours per week. Total 5-6 hours per week.

BIO 142 Human Anatomy and Physiology II (4 CR) Prerequisite: BIO 141 or equivalent. Integrates anatomy and physiology of cells, tissues, organs, and systems of the body. Integrates concepts of chemistry, physics and pathology. Part II of II. Lecture 3 hours per week. Laboratory 2-3 hours per week. Total 5-6 hours per week.

BIO 206 Cell Biology (4 CR) Prerequisite: one year of college biology or one year of college chemistry. Introduces the ultrastructure and functions of cells. Emphasizes cell metabolism, cell division, and control of gene expression. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

BIO 215 Plant Life of Virginia (3 CR) Focuses on identification and ecological relationships of the native plants of Virginia. Emphasizes shrubs, vines, weeds, wildflowers, ferns, and mushrooms. Lecture 2 hours. Recitation and laboratory 3 hours. Total 5 hours per week.

BIO 220 Immunology (3 CR) Prerequisites: BIO 101 or equivalent and BIO 150 or equivalent. Provides students with an in-depth understanding of the mammalian immune system. Students begin with a detailed study of the immune system components and move on to an integrated look at the immune response with respect to clinical applications and human health. Lecture 3 hours per week.

BIO 270 General Ecology (4 CR) Prerequisite: BIO 101-102 or division approval. Studies interrelationships between organisms and their natural and cultural environments with emphasis on populations, communities, and ecosystems. Lecture 3 hours. Recitation and laboratory 3 hrs. Total 6 hrs. per week.

BIO 271 Introduction to Ecological Systems (4 CR) Prerequisites: BIO 101. Examines the basic biological, meteorological and geologic/geographic factors at play in determining various critical ecosystems. Emphasis on wetlands and wetlands reconstruction, endangered and threatened species habitats, and aquatic systems. Remote sensing technology and use of GIS in ecological management will be examined. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

BIO 285 Biological Problems in Contemporary Society (3 CR) Discusses major biological problems facing society, which may include environmental and health concerns such as pollution, bioengineering, drug abuse, conservation, famine and others. Lecture 3 hours per week.

BLD - Building

BLD 110 - Introduction to Construction (3 CR) Covers basic knowledge and requirements needed in the construction trades. Introduces use of tools and equipment, with emphasis on construction safety, including personal and tool safety. Provides a working introduction to basic blueprint reading and fundamentals of construction mathematics. Lecture 3 hours per week.

BLD 111 Blueprint Reading and the Building Code (3 CR) Introduces reading and interpreting various kinds of blueprints and working drawings with reference to local, state and national building codes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

BLD 131-132 Carpentry Framing I-II (5 CR, 5 CR) Presents and introduction to carpentry with emphasis on residential construction. Covers safety on the job, appropriate use of power tools, basic construction techniques, an introduction to working drawings, and the team approach to residential buildings. Presents an introduction to selection and use of ladders and scaffolds, basic form removal and demolition, and use of basic first aid. Includes the concepts of carpentry framing for floors, walls, ceilings, porches and decks. Includes theoretical and practical application as well as the concepts of carpentry framing for roof, truss installation and door and window installation. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

BLD 133-134 Carpentry Framing III-IV (5 CR, 5 CR) Continues the study of carpentry with emphasis on residential construction. Covers safety on the job, appropriate use of power tools, basic construction techniques, an introduction to working drawings, and the team approach to residential buildings. Continues the study of selection and use of ladders and scaffolds, basic form removal and demolition, and use of basic first aid. Includes the concepts of carpentry framing for floors, walls, ceilings, porches and decks. Includes theoretical and practical application as well as the concepts of carpentry framing for roof, truss installation and door and window installation. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

BLD 144 Plumbing Code and Certification Preparation (3 CR) Teaches the use of the plumbing code standard book (BOCA), references standards, the reading and use of charts and tables, and preparation for the journeyman's certification and the cross-connection control certification test. Lecture 3 hours per week.

BLD 159 Mechanical Code and Certification Preparation (3 CR) Discusses local, state, and national building codes as they related to the installation, maintenance and repair of mechanical systems in residential and commercial buildings. Includes gas and oil burners, venting, flues and sizing of systems. Lecture 3 hours per week.

BUS – Business Management and Administration

BUS 100 Introduction to Business (3 CR) Presents a broad introduction to the functioning of business enterprise within the U.S. economic framework. Introduces economic systems, essential elements of business organization, production, human resource management, marketing, finance, and risk management. Develops business vocabulary. Lecture 3 hours per week.

BUS 111 Principles of Supervision I (3 CR) Teaches the fundamentals of supervision, including primary responsibilities of supervisors. Introduces factors relating to the work of supervisor and subordinates. Covers aspects of leadership, job management, work improvement, training/orientation, performance evaluation, and effective employee/supervisor relationships. Lecture 3 hours per week.

BUS 116 Entrepreneurship (3 CR) Presents the various steps considered necessary when going into business. Includes areas such as product-service analysis, market research evaluation, setting up books, ways to finance startup, operations of the business, development of business plans, buyouts versus starting from scratch, and franchising. Uses problems and cases to demonstrate implementation of these techniques. Lecture 3 hours per week.

BUS 125 Applied Business Mathematics (3 CR) Prerequisite: Students who do not place above Pre-Algebra (MTH 9) and into Algebra I (MTH 3) or higher on the placement test will be required to take developmental courses. Applies mathematical operations to business process and problems, ex. wages and payroll, sales and property taxes, checkbook records and bank reconciliation, depreciation, overhead, distribution of profits and loss in partnerships, distribution of corporate dividends, commercial discounts, markup, markdown, simple interest, present values, bank discount notes, multiple

payment plans, compound interest, annuities, sinking funds, and amortization. Lecture 3 hours per week.

BUS 165 Small Business Management (3 CR) Prerequisite or co-requisite: ACC 110 or ACC 211. Identifies management concerns unique to small businesses. Introduces the requirements necessary to initiate a small business, and identifies the elements comprising a business plan. Presents information establishing financial and administrative controls, developing a marketing strategy, managing business operations, and the legal and government relationships specific to small businesses. Lecture 3 hours per week.

BUS 200 Principles of Management (3 CR) Teaches management and the functions of planning, organizing, directing, and controlling. Focuses on applying management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Lecture 3 hours per week.

BUS 202 Applied Management Principles (3 CR) Prerequisite: BUS 100, BUS 111 or BUS 200. Focuses on management practices and issues in marketing and finance. May use case studies and/or management decision models to analyze and develop solutions to management problems. Lecture 3 hours per week.

BUS 205 Human Resource Management (3 CR) Introduces employment, selection, and placement of personnel, usage levels and methods, job descriptions, training methods and programs, employee evaluation systems, compensation and labor relations. Includes procedures for management of human resources and uses case studies and problems to demonstrate implementation of these techniques. Lecture 3 hours per week.

BUS 221 Business Statistics I (3 CR) Prerequisite: MTH 163 or divisional approval. Focuses on statistical methodology in the collection, organization, presentation, and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T distribution and hypotheses for means and proportions. Lecture 3 hours per week.

BUS 225 Applied Business Statistics (3 CR) Prerequisites: MTH 120 and BUS 125. Introduces statistics as a tool in decision making. Emphasizes ability to collect, present, and analyze data. Employs measures of central tendency and dispersion, statistical inference, index number, and time series analysis. Lecture 3 hours per week.

BUS 241 Business Law I (3 CR) Develops a basic understanding of the US business legal environment. Introduces property and contract law, agency and partnership liability, and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships, and other business transactions. Lecture 3 hours per week.

CHD – Early Childhood Development

CHD 118 Language Arts for Young Children (3 CR) Emphasizes the early development of children's language and literacy skills. Presents techniques and methods for supporting all aspects of early literacy. Surveys children's literature, and examines elements of promoting oral literacy, print awareness, phonological awareness, alphabetic principle, quality story-telling and story reading. Addresses strategies for intervention and support for exceptional children and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 119 Introduction to Reading Methods (3 CR) Prerequisite: ENG 111. Focuses on promoting language and literacy skills as the foundation for emergent reading. Emphasizes phonetic awareness and alphabetic principle, print awareness and concepts, comprehension and early reading and writing. Addresses strategies for intervention and support for exceptional children and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 120 Introduction to Early Childhood Education (3 CR) Introduces early childhood development through activities and experiences in early childhood, pre-kindergarten, kindergarten, and primary programs. Investigates classroom organization and procedures, and use of classroom time and materials, approaches to education for young children, professionalism, and curricular procedures. Lecture 3 hours per week.

CHD 145 Teaching Art, Music, and Movement to Children (3 CR) Focuses on children's exploration, play and creative expression in the areas of art, music and movement. Emphasis will be on developing strategies for using various open-ended media representing a range of approaches in creative thinking. Addresses strategies for intervention and support for exceptional children and English Language

Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 146 Math, Science, and Social Studies for Children (3 CR) Provides experiences in content, methods, and materials for the development of math, science, and social studies skills in children. Emphasis will be on developing strategies for using various resources to facilitate children's construction of knowledge. Addresses strategies for intervention and support for children with special needs and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 165 Observation and Participation in Early Childhood/Primary Settings (3 CR) Prerequisites or co-requisites: CHD 120 and CHD 215. Focuses on observation as the primary method for gathering information about children in early childhood settings. Emphasizes development of skills in the implementation of a range of observation techniques. Students spend one hour each week in a seminar session in addition to 4 clock hours in the field. May be taken again for credit. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

CHD 166 Infant and Toddler Programs (3 CR) Examines child growth and development from birth to 36 months. Focuses on development in the physical, cognitive, social, emotional, and language domains. Emphasizes the importance of the environment and relationships for healthy brain development during the child's first three years of life. Investigates regulatory standards for infant/toddler caregiving. Lecture 3 hours per week.

CHD 205 Guiding the Behavior of Children (3 CR) Explores the role of the early childhood educator in supporting emotional and social development of children, and in fostering a sense of community. Presents practical strategies for encouraging prosocial behavior, conflict resolution and problem solving. Emphasizes basic skills and techniques in child guidance. Lecture 3 hours per week.

CHD 210 Introduction to Exceptional Children (3 CR) Reviews the history of and legal requirements for providing intervention and educational services for young children with special needs. Studies the characteristics of children with a diverse array of needs and developmental abilities. Explores concepts of early intervention, inclusion, guiding behavior and adapting environments to meet children's needs. Lecture 3 hours per week.

CHD 215 Models of Early Childhood Education Programs (3 CR) Surveys and discusses various models and theories of early childhood education programs including current trends and issues. Reviews state licensing and staff requirements. Lecture 3 hours per week.

CHD 216 Early Childhood Programs, School, and Social Change (3 CR) Explores methods of developing positive, effective relations with families to enhance their developmental goals for children. Considers culture and other diverse needs, perspectives, and abilities of families and educators. Emphasizes advocacy and public policy awareness as an important role of early childhood educators. Describes risk factors and identifies community resources. Lecture 3 hours per week.

CHD 265 Advanced Observation and Participation in Early Childhood Primary Settings (3 CR) Prerequisites: CHD 120, CHD165 and CHD 215. Focuses on implementation of activity planning and observation of children through participation in early childhood settings. Emphasizes responsive teaching practices and assessment of children's development. Reviews legal and ethical implications of working with children. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

CHD 270 Administration of Early Childhood Programs (3 CR) Examines skills needed for establishing and managing early childhood programs. Emphasizes professionalism and interpersonal skills, program planning, staff selection and development, creating policies, budgeting, and developing forms for recordkeeping. Lecture 3 hours per week.

CHD 298 Project in Portfolio Development (1 CR) In conjunction with CHD 265 serves as the capstone course for the Early Childhood Development Associate degree. Focuses on the development of a portfolio to demonstrate professional competence in the field of early care and education. Lecture 1 hour per week.

CHM - Chemistry

CHM 5 Developmental Chemistry for Health Sciences (4 CR) Prerequisites: Algebra I, and a placement recommendation for ENG 111 or succesful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG 7). Introduces basic principles of inorganic chemistry. Emphasizes

applications to the health sciences. Can be used as a preparatory course for CHM 111- 112. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

CHM 111 College Chemistry I (4 CR) Prerequisites: Algebra II and a placement recommendation for ENG 111 or succesful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG 7). High school chemistry or CHM 5 recommended but not required. Explores the fundamental laws, theories, and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Requires a strong background in mathematics. Part I of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 112 College Chemistry II (4 CR) Prerequisite: Algebra II and CHM 111. Explores the fundamental laws, theories, and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Requires a strong background in mathematics. Part II of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 241 Organic Chemistry I (3 CR) Prerequisite: CHM 112 or equivalent. Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Lecture 3 hours per week.

CHM 242 Organic Chemistry II (3 CR) Prerequisite: CHM 241. Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Part II of II. Lecture 3 hours per week.

CHM 245 Organic Chemistry Laboratory I (2 CR) Prerequisite: CHM 112. Corequisite: CHM 241. Includes qualitative organic analysis. Part I of II. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

CHM 246 Organic Chemistry Laboratory II (2 CR) Prerequisite: CHM 241 and CHM 245. Corequisite: CHM 242. Includes qualitative organic analysis. Part II of II. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

CIV - Civil Engineering Technology

CIV 135 Construction Management and Estimating (3 CR) Teaches the equipment and methods used in construction. Includes principles and economics of construction, planning and management, and principles of estimating primarily using highway and building project examples. Lecture 3 hours per week.

CIV 171 Surveying I (3 CR) Prerequisite: MTH 115 or division approval. Introduces surveying equipment, procedures and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations and introduction to topography. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CSC - Computer Science

CSC 201 Computer Science I (4 CR) Co-requisite: MTH 175 or MTH 271 or high school calculus or equivalent. Introduces algorithm and problem-solving methods. Emphasizes structured programming concepts, elementary data structures and the study and use of a high level programming language. Lecture 4 hours per week.

CSC 202 Computer Science II (4 CR) Prerequisite: CSC 201. Examines data structures and algorithm analysis. Covers data structures (including sets, strings, stacks, queues, arrays, records, files, linked lists, and trees), abstract data types, algorithm analysis (including searching and sorting methods), and file structures. Lecture 4 hours per week.

CSC 205 Computer Organization (4 CR) Examines the hierarchical structure of computer architecture. Focuses on multi-level machine organization. Uses a simple assembler language to complege programming projects. Includes processors, instruction, execution, addressing techniques, data representation and digital logic. Lecture 4 hours per week.

CST – Communication Studies and Theatre

CST 100 Principles of Public Speaking (3 CR) Applies theory and principles of public address with emphasis on preparation and delivery. Lecture 3 hours per week.

CST 105 Oral Communication (3 CR) Studies effective communication with emphasis on speaking and listening. Lecture 3 hours per week.

CST 130 - Introduction to the Theatre (3 CR) Surveys the principles of drama, the development of theatre production, and selected plays to acquaint the student with various types of theatrical presentations. Lecture 3 hours per week.

CST 131-132 Acting I-II (3 CR, 3 CR) Prerequisite for CST 132: CST 131. Develops personal resources and explores performance skills through such activities as theatre games, role playing, improvisation, work on basic script units, and performance of scenes. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CST 136 - Theatre Workshop (1-6 CR) Enables students to work in various activities of play production. The student participates in performance, set design, stage carpentry, sound, costuming, lighting, stage managing, props, promotion, or stage crew. May be repeated for credit. Variable hours per week.

DNH – Dental Hygiene

DNH 111 Oral Anatomy (2 CR) Studies the morphology and function of the oral structures with emphasis on the primary and permanent dentition, eruption sequence, occlusion, and intra-arch relationships. Lecture 2 hours per week.

DNH 115 Histology/Head and Neck Anatomy (3 CR) Presents a study of the microscopic and macroscopic anatomy and physiology of the head, neck, and oral tissues. Includes embryologic development and histologic components of the head, neck, teeth, and periodontium. Lecture 3 hours per week.

DNH 120 Management of Emergencies (2 CR) Studies the various medical emergencies and techniques for managing emergencies in the dental setting. Additional practical applications and simulations of emergencies may be conducted to enhance basic knowledge from the one hour lecture component. Lecture 2 hours per week.

DNH 130 Oral Radiography for the Dental Hygienist (2 CR) Studies radiation physics, biology, safety, and exposure techniques for intra- and extra-oral radiographic surveys. Laboratory provides practice in exposure, processing methods, mounting, and interpretation of normal findings. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

DNH 141 Dental Hygiene I (5 CR) Introduces clinical knowledge and skills for the performance of dental hygiene services; basic skill components, lab mannequins, and client practice. Lecture 3 hours. Clinic 6 hours. Total 9 hours per week.

DNH 142 Dental Hygiene II (5 CR) Prerequisite: DNH 141. Exposes students to instrument sharpening, time management, client education and ultrasonic instrumentation techniques and methods. Provides supervised clinical practice in the dental hygiene clinic with emphasis on developing client treatment and instrument skills. Lecture 2 hours. Clinic 9 hours. Total 11 hours per week.

DNH 145 General and Oral Pathology (2 CR) Prerequisite: DNH 115. Introduces general pathology with consideration of the common diseases affecting the human body. Particular emphasis is given to studying pathological conditions of the mouth, teeth, and supporting structures. Lecture 2 hours per week.

DNH 146 Periodontics for Dental Hygienist (2 CR) Introduces theoretical, practical study of various concepts/methods used in describing, preventing, and controlling periodontal disease. Presents etiology, microbiology, diagnosis, treatment and prognosis of diseases. Lecture 2 hours per week.

DNH 150 Nutrition (2 CR) Studies nutrition as it relates to dentistry and general health. Emphasizes the principles of nutrition as applied to the clinical practice of dental hygiene. Lecture 2 hours per week.

DNH 190 Dental Hygiene Coordinated Practice (3 CR) Prerequisite: DNH 142. Continues supervised clinical practice in the dental hygiene clinic with emphasis on coordinating didactic and clinical skills, and refining client treatment skills. Introduces special needs clients and treatment modifications. Lecture 2 hours. Clinic 3 hours. Total 5 hours per week.

DNH 214 Practical Materials for Dental Hygiene (2 CR) Studies the current technologic advances, expanded functions, and clinical/laboratory materials used in dental hygiene practice. Provides laboratory experience for developing skills in the utilization and applications of these technologies and functions. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

DNH 216 Pharmacology (2 CR) Studies the chemical and therapeutic agents used in dentistry, including their preparation, effectiveness, and specific application. Lecture 2 hours per week.

DNH 226 Public Health Dental Hygiene I (2 CR) Studies and compares concepts of health care delivery, applying public health delivery model. Utilizes epidemiologic methods, research and biostatistics as applied to oral health program planning, implementation, and evaluation. Incorporates and applies current health issues and trends. Lecture 2 hours per week.

DNH 227 Public Health Dental Hygiene II (1 CR) Prerequisite: DNH 226. Applies concepts of public health program planning through student directed community projects with an emphasis on preventive oral health education. Includes development of table clinics, bulletin boards, and volunteer service in the community. Laboratory 3 hours per week.

DNH 230 Office Practice and Ethics (1 CR) Studies the principles of dental ethics and economics as they relate to the dental hygienist. The course also includes a study of jurisprudence and office procedures. Lecture 1 hour per week.

DNH 235 Management of Dental Pain and Anxiety in the Dental Office (2 CR) Prerequisites: DNH 115, DNH 120, and DNH 216. Provides a study of anxiety and pain management techniques used in dental care. Students will understand the necessary theory to appropriately treat, plan and successfully administer topical anesthesia, local anesthesia, and nitrous oxide/oxygen analgesia. Includes the components of pain, pain control mechanisms, topical anesthesia, local anesthesia and nitrous oxide/oxygen analgesia. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

DNH 244 Dental Hygiene IV (5 CR) Prerequisite: DNH 190. Introduces advanced skills and the dental hygienists role in dental specialties. Includes supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasizes treatment of clients demonstrating periodontal involvement, stressing application and correlation of knowledge and skills from previous semesters. Lecture 1 hour. Clinic 12 hours. Total 13 hours per week.

DNH 245 Dental Hygiene V (5 CR) Prerequisite: DNH 244. Supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasis is placed on synthesis of knowledge from previous semesters, treatment of clients with moderate to advanced periodontal involvement, and improving clinical speed while maintaining quality in preparation for practice. Lecture 1 hour. Clinic 12 hours. Total 13 hours per week.

DRF - Drafting

DRF 161 Blueprint Reading I (2 CR) Teaches the application of basic principles, visualization, orthographic projection, detail of drafting shop process and terminology, assembly drawings and exploded views. Considers dimensioning, changes, and corrections, classes of fits, tolerances and allowances, sections and convention in blueprint reading. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

DRF 201 Computer Aided Drafting and Design I (3 CR) Prerequisite: Basic computer knowledge including file management, mouse usage, and keyboarding skills. Teaches computer-aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 202 Computer Aided Drafting and Design II (3 CR) Prerequisite: DRF 201 or permission of instructor. Teaches production drawings and advanced operations in computer aided drafting. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 203 Computer Aided Drafting and Design III (3 CR) Prerequisite: DRF 202 or permission of instructor. Teaches advanced CAD applications. Includes customization and/or use of advanced software. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 226 Computer Aided Machining (3 CR) Prerequisite: MEC 119 or permission of the instructor. Teaches use of software to create numerical machine code to drive CNC milling machines or lathes. Introduces software and techniques to create, edit and produce CAD drawings, tool paths, and the numerical code for a CAM machine. Includes history, applications, hardware and software requirements, terminology, limitation and future trends. Reviews and builds on manual CNC programming methods. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 238 Computer Aided Modeling and Rendering I (3 CR) Prerequisite: ARC 221 or DRF 203. Focuses on training students in the contemporary

techniques of 3D modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photorealism, which enables the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-throughs that will bring the third dimension to architectural designs and industrial applications. May introduce the use of steriolithography techniques for rapid prototyping. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

See Early Childhood Development (CHD)

ECO - Economics

ECO 120 Survey of Economics (3 CR) Presents a broad overview of economic theory, history, development, and application. Introduces terms, definitions, policies, and philosophies of market economies. Provides some comparison with other economic systems. Includes some degree of exposure to microeconomic and macroeconomic concepts. Lecture 3 hours.

ECO 201 Principles of Macroeconomics (3 CR) Introduces macroeconomics including the study of Keynesian, classical, monetarist principles and theories, the study of national economic growth, inflation, recession, unemployment, financial markets, money and banking, the role of government spending and taxation, along with international trade and investments. Lecture 3 hours per week.

ECO 202 Principles of Microeconomics (3 CR) Introduces the basic concepts of micro-economics. Explores the free market concepts with coverage of economic models and graphs, scarcity and choices, supply and demand, elasticities, marginal benefits and costs, profits, and production and distribution. Lecture 3 hours per week.

EDU - Education

EDU 100 Introduction to Education (1 CR) Provides an overview of teaching as a career with orientation to theories, practices, responsibilities, guidelines, current trends, and issues in education. Lecture 1 hour per week.

EGR - Engineering

EGR 105 Introduction to Problem Solving in Technology (1 CR) Teaches engineering problem solving, using hand held calculator. Applies computers to solving problems. Laboratory 3 hours per week.

EGR 120 Introduction to Engineering (2 CR) Prerequisite: EGR 124. Introduces the engineering profession, professional concepts, ethics, and responsibility. Reviews hand calculators, number systems, and unit conversions. Introduces the personal computer and operating systems. Includes engineering problem solving techniques using. Lecture 2 hours per week.

EGR 123 Introduction to Engineering Design (2 CR) Introduces the fundamental knowledge and experience needed to understand the engineering design process through the basics of electrical, computer, and mechanical systems. Includes the completion of a project in which a specific electromechanical robot kit will be analyzed, assembled, and operated. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EGR 124 Introduction to Engineering and Engineering Methods (3 CR) Co-requisites: MTH 175 and MTH 177. Introduces the engineering profession, professionalism, and ethics. Covers problem presentation, engineering calculations, digital computer applications, word processing, worksheets, programming in elementary numerical methods. Lecture 3 hours per week.

EGR 126 Computer Programming for Engineers (3 CR) Co-requisite: MTH 116 or equivalent. Introduces computer, their architecture and software. Teaches program development using flowcharts. Solves engineering problems involving programming in languages such as FORTRAN, PASCAL, or C++. Lecture 3 hours per week.

EGR 140 Engineering Mechanics – Statics (3 CR) Prerequisite: MTH 175 or equivalent. Introduces mechanics of vector forces and space, scalar mass and time, including S.I. and U.S. customary units. Teaches equilibrium, free-body diagrams, moments, couples, distributed forces, centroids, moments of inertia analysis of two-force and multiforce members and friction and internal forces. Lecture 3 hours per week.

EGR 206 Engineering Economy (3 CR) Co-requisite: MTH 116 or equivalent. Presents economic analysis of engineering alternatives. Studies economic and cost concepts, calculating economic equivalence, comparing alternatives, replacement economy, economic optimization in design and operation, depreciation, and after tax analysis. Lecture 3 hours per week.

EGR 216 Computer Methods in Engineering and Technology (3 CR) Prerequisite: Basic computer knowledge including file management, mouse usage, and keyboarding skills. Co-requisite: MTH 115. Provides advanced level experience in using a computer as a tool for solving technical problems and performing office functions. Includes computer hardware and operating system usage, structured programming in a selected high level language, use of word processing software, computer graphics and spreadsheets. Focuses on the analysis and solution of problems in engineering and technology. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EGR 245 Engineering Mechanics – Dynamics (3 CR) Prerequisite: EGR 140. Presents approach to kinematics of particles in linear and curvilinear motion. Includes kinematics of rigid bodies in plane motion. Teaches Newton's second law, work-energy and power, impulse and momentum, and problem solving using computers. Lecture 3 hours per week.

EGR 246 Mechanics of Materials (3 CR) Prerequisite: EGR 140. Teaches concepts of stress, strain, deformation, internal equilibrium, and basic properties of engineering materials. Analyzes axial loads, torsion, bending, shear and combined loading. Studies stress transformation and principle stresses, column analysis and energy principles. Lecture 3 hours per week.

EGR 250 Electrical Theory (3 CR) Co-requisite: PHY 242, MTH 291. Designed for nonelectrical engineering majors. Presents fundamentals of DC and AC electric circuits, circuit laws and network theorems; operational amplifiers, energy storage elements; response of first- and second-order circuits; feedback; two-port network; AC steady state analysis. Lecture 3 hours per week.

EGR 251 Basic Electric Circuits I (3 CR) Co-requisite: EGR 255. Teaches fundamentals of electric circuits. Includes circuit quantities of charge, current, potential, power and energy. Teaches resistive circuit analysis; Ohm's and Kirchoff's laws; nodal and mesh analysis; network theorems; RC, RL and RLC circuit transient response with constant forcing functions. Teaches AC steady-state analysis, power, and three-phase circuits. Presents frequency domain analysis, resonance, Fourier series, inductively coupled circuits, Laplace transform applications, and circuit transfer functions. Introduces problem solving using computers. Lecture 3 hours per week.

EGR 255 Electric Circuits Laboratory (1 CR) Co-requisite: EGR 251. Teaches principles and operation of laboratory instruments such as VOM, electronic voltmeters, digital multimeters, oscilloscopes, counters, wave generators and power supplies. Presents application to circuit measurements including transient and steady-state response of simple networks with laboratory applications of laws and theories of circuits plus measurement of AC quantities. Laboratory 3 hours per week.

EGR 261 Signals and Systems (3 CR) Prerequisite: EGR 251. Co-requisite: MTH 291. Covers topics including Laplace transforms and Laplace transform analysis of circuits, time and frequency domain representation of linear systems, methods of linear systems analysis including convolution and Laplace transforms, frequency domain representation of signals including frequency response, filters, Fourier series, and Fourier transforms. Lecture 3 hours per week.

EGR 265 Digital Electronics and Logic Design (4 CR) Teaches number representation in digital systems; Boolean algebra; design of digital circuits, including gates, flip-flops, counters, registers, architecture, microprocessors, input-output devices. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EGR 285 Capstone Project (1 CR) Provides a capstone research project for the final semester of the program, focusing inquiry upon an area of interest to the student or area relevant to their prospective career field. May include problem based research topics, internships, or other focused projects. Prerequisite: IND 290. Lecture 1 hour per week.

ELE – Electrical Technology

ELE 110 Home Electric Power (3 CR) Covers the fundamentals of residential power distribution, circuits, panels, fuse boxes, breakers, and transformers. Includes study of the national electrical code, purpose, and interpretation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 130 Electricity (3 CR) Prerequisite: MTH 9. Covers DC and AC theory (FOR NON-ELECTRICAL STUDENTS), with some introduction to electrical machines. Prerequisite MTH 2 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ELE 133-134 Practical Electricity I-II (3 CR, 3 CR) Prerequisite: Placement recommendation into MTH 9 or equivalent. Teaches the fundamentals of electricity, terminology, symbols, and diagrams.

Includes principles essential to understanding general practices, safety, and the practical aspects of residential and non-residential wiring and electrical installation. May require preparation of a report as an out-of-class activity. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 138 National Electrical Code (2 CR) Teaches purpose and interpretation of the National Electrical Code as well as familiarizations with various charts, code rulings, and wiring methods. Lecture 2 hours per week.

ELE 147 Electrical Power and Control Systems (3 CR) Prerequisite: ETR 113 or ELE 133 and MTH 115. Co-requisite: ETR 114. Reviews basic DC and AC circuits. Covers single-phase and three-phase AC power distribution systems, and protection devices, including types of AC motors. Presents analyzing and troubleshooting electrical control systems and motor protection devices. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 176 Introduction to Alternative Energy Including Hybrid Systems (3 CR) Co requisite: ELE 130. Introduces Alternative Energy with an emphasis on solar photovoltaic systems, small wind turbines technology, the theory of PV technology, PV applications, solar energy terminology, system components, site analysis, PV system integration and PV system connections and small wind turbine technology site analysis. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 177 - Photovoltaic Energy Systems (4 CR) Teaches techniques for conduct site surveys, installing system components, installing inverters and performing system sizing and system maintenance. Introduces different battery configurations, and charge controllers. Introduces safety, system design and layout, National Electric Code, Component Selection, wiring and installation techniques. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ELE 178 - Wind Turbine Technology (4 CR) Introduces many facets of the wind industry. Introduces the history and development of the wind systems as well as the future of the wind industry as the desire for alternative energy grows. Presents the terminology used in the application of wind systems. Identifies the various types of wind energy turbines and other topics as appropriate. Includes safety training. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ELE 239 Programmable Controllers (3 CR) Prerequisite: ELE 147 and ETR 280 or ELE 133 and ETR 141, or department approval. Deals with installation, programming, interfacing, and concepts of troubleshooting programmable controllers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS – Emergency Medical Technician

EMS 100 CPR for Healthcare Providers (1 CR) Provides instruction in Cardiopulmonary Resuscitation that meets current Emergency Cardiac Care (ECC) guidelines for Cardiopulmonary Resuscitation education for Healthcare Providers. Equivalent to HLT 105. Lecture 1 hours per week.

EMS 105 Basic Medication Administration Procedures (1 CR) Covers basic theory and practical application of medication and drug dosage, as well as calculations. Direct application to the functional performance of the EMT Intermediate in the field and clinical settings is stressed. Lecture 1 hour per week.

EMS 110 Emergency Vehicle Operator's Course (EVOC) (1 CR) Prepares the student for certification in the operation of various emergency vehicles. Teaches proper operating procedures in both emergency and non-emergency situations. Lecture 1 hour per week.

EMS 111 Emergency Medical Technician – Basic (7 CR) Prepares student for certification as a Virginia and National Registry EMT-Basic. Includes all aspects of prehospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Prerequisite: CPR certification at the Health Care Provider level. Co-requisite: EMS 120. Lecture 5 hours. Laboratory 4 hours. Total 9 hours per week.

EMS 112 Emergency Medical Technician – Basic I (4 CR) Prepares student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 113 Emergency Medical Technician – Basic II (3 CR) Continued preparation of student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life

support as defined by the Virginia office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 120 Emergency Medical Technician-Basic Clinical I (1 CR) Observes in a program-approved clinical/field setting. Includes topics for both EMS 111 and EMS 113, dependent upon the program in which the student is participating and is a co-requisite to both EMS 111 and EMS 113. Lecture 1 hour per week.

EMS 132 Vehicle Rescue (1 CR) Educates Fire and EMS personnel in basic vehicle rescue. Teaches safe and proficient techniques for using air, manual and hydraulic tools. Lecture 1 hour per week.

EMS 133 Rope Rescue I (1 CR) Educates the student in rope use, repelling, self-rescue, basic rigging, and victim access. Emphasizes safe and effective rigging procedures. Lecture 1 hour per week.

EMS 151 Introduction to Advanced Life Support (4 CR) Co-requisite: EMS 170. Prepares the student for Virginia Enhanced certification eligibility and begins the sequence for National Registry Intermediate and/or Paramedic certification. Includes the theory and application of the following: foundations, human systems, pharmacology, overview of shock, venous access, airway management, patient assessment, respiratory emergencies, allergic reaction, and assessment-based management. Conforms at a minimum to the Virginia Office of Emergency Medical Services curriculum. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 153 Basic ECG Recognition (2 CR) Focuses on the interpretation of basic electrocardiograms (ECG) and their significance. Includes an overview of anatomy and physiology of the cardiovascular system including structure, function, and electrical conduction in the heart. Covers advanced concepts that build on the knowledge and skills of basic dysrhythmias determination and introduction to 12 lead ECG. Lecture 2 hours per week.

EMS 155 ALS – Medical Care (4 CR) Prerequisites: Current EMT-B certification, EMS 151, and EMS 153. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Includes ALS pharmacology, drug and fluid administration with emphasis on patient assessment differential diagnosis and management of multiple medical complaints. Includes, but are not limited to conditions relating to cardiac, diabetic, neurological, non-traumatic abdominal pain, environmental, behavioral, gynecology, and toxicological disease conditions. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 157 ALS – Trauma Care (3 CR) Prerequisites: Current EMT-B certification and EMS 151. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 159 ALS – Special Populations (2 CR) Prerequisites: EMS 151 and EMS 153. Pre- or co-requisite: EMS 155. Continues the Virginia office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of specialty patients including obstetrical, neonates, pediatric, and geriatrics. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EMS 170 ALS Internship (1-2 CR) Begins the first in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the Emergency Department, critical care units, pediatric, labor and delivery, operating room, trauma centers, and various advanced life support units. Laboratory 3–6 hours per week.

EMS 172 ALS Clinical Internship II (1-2 CR) Co-requisite: EMS 151. Continues with the second in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the Emergency Department, critical care units, pediatric, labor and delivery, operating room and trauma centers. Laboratory 3–6 hours per week.

EMS 173 ALS Field Internship II (1 CR) Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3 hours per week.

ENE – Energy Technology

ENE 100 - Conventional and Alternate Energy Applications (4 CR) Prerequisite: ELE 176 or instructor approval. Provides an overview of hydroelectric, coal, and nuclear energy production methods and renewable solar, geothermal, wind, and fuel cell technology. A complete system breakdown of conventional power production methods, efficiency, and sustainability when compared with solar, geothermal, wind, and fuel cell applications. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ENE 105 - Solar Thermal Active and Passive Technology (4 CR) Provides a comprehensive study of thermal technology as it applies to collegector types and ratings, open-loop versus closed-loop and system sizing. Introduces hydronics, hot water, and pool heating applications. Provides an introduction to fluid dynamics and chemistry as it applies to system installation and maintenance. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ENG – English

ENG 1 Preparing for College Writing I (4 CR) Helps students discover and develop writing processes needed for the proficiency level necessary to enter their respective curricula. Guides students through the process of starting, composing, revising, and editing. Lecture 4 hours per week.

ENG 3 Preparing for College Writing II (3–4 CR) Emphasizes strategies within the writing process to help students with specific writing situations. Develops techniques to improve clarity of writing and raise proficiency to the level necessary for entrance into particular curricula. Lecture 3–4 hours per week.

ENG 4 Preparing for College Reading I (4 CR) Helps students improve their reading processes to increase their understanding of reading materials. Includes word forms and meanings, comprehension techniques, and ways to control reading pace. Lecture 4 hours per week.

ENG 7 Writing and Reading Improvement I (8 CR) Provides an integrated approach to developing students' writing and reading processes. Prepares students to complete assignments successfully by providing them with reading and writing strategies. Lecture 8 hours per week.

ENG 107 Critical Reading (3 CR) Helps students refine their reading processes. Emphasizes applying and synthesizing ideas. Includes ways to detect organization, make inferences, draw conclusions, evaluate generalizations, recognize differences between facts and opinions, and other advanced comprehension, strategies. May include comprehensive library skills. Lecture 3 hours per week.

ENG 111 College Composition I (3 CR) Prerequisites: A placement recommendation for ENG 111 or successful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG 7). Introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and argumentation with at least one researched essay. Lecture 3 hours per week.

ENG 112 College Composition II (3 CR) Prerequisite: Successful completion of ENG 111 or its equivalent and must be able to use word processing software. Continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Lecture 3 hours per week.

ENG 135 Applied Grammar (3 CR) Develops ability to edit and proofread correspondence and other documents typically produced in business and industry. Instructs the student in applying conventions of grammar, usage, punctuation, spelling, and mechanics. Lecture 3 hours per week.

ENG 150 Children's Literature (3 CR) Surveys the history of children's literature, considers learning theory and developmental factors influencing reading interests, and uses bibliographic tools in selecting books/materials for recreational interests and educational needs of children. Lecture 3 hours per week.

ENG 210 Advanced Composition (3 CR) Prerequisite: ENG 112 or divisional approval. Helps students refine skills in writing non-fiction prose. Guides development of individual voice and style. Introduces procedures for publication. Lecture 3 hours per week.

ENG 211 Creative Writing I (3 CR) Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. Prerequisite ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 215-216 Creative Writing – Fiction I-II (3 CR, 3 CR) Introduces the fundamentals and techniques of writing short and long fiction. Lecture 3 hours per week.

ENG 217-218 Creative Writing– Poetry I-II (3 CR, 3 CR) Introduces the fundamentals and techniques of writing poetry. Lecture 3 hours per week.

ENG 241-242 Survey of American Literature I-II (3 CR, 3 CR) Prerequisite: ENG 112. Examines American literary works from colonial times to the present, emphasizing the ideas and characteristics of our national literature. Involves critical reading and writing. Lecture 3 hours per week.

ENG 243-244 Survey of English Literature I-II (3 CR, 3 CR) Prerequisite: ENG 112. Studies major English works from Anglo-Saxon period to the present, emphasizing ideas and characteristics of the British literary tradition. Involves critical reading and writing. Lecture 3 hours per week.

ENG 251-252 Survey of World Literature I-II (3 CR, 3 CR) Prerequisite: ENG 112 or divisional approval. Examines major works of world literature. Involves critical reading and writing. Lecture 3 hours per week.

ENG 257 - Mythology (3 CR) Studies selected mythologies of the world, emphasizing their common origins and subsequent influence on human thought and expression. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 278 - Appalachian Literature (3 CR) Examines selected works of outstanding authors of the Appalachian region. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Lecture 3 hours per week.

ENV – Environmental Science

ENV 40 Basic Wastewater Licensure Review (1 CR) Review materials which are normally associated with the Wastewater Treatment Plant Operator's Class IV or Class III level certification examinations. Utilizes lecture, audiovisual, and workshop sessions to review required materials and to prepare the trainee to complete the wastewater operator examinations. Lecture 1 hour per week.

ENV 47 Basic Water Licensure Review (1 CR) Reviews materials which are normally associated with the Water Treatment Plant Operator's Class IV or Class III level certification examinations. Utilizes lecture, audiovisual, and workshop sessions to review required materials and to prepare the trainee to complete the water operator examinations. Prerequisite divisional approval. Laboratory 2 hours per week.

ENV 110 Introduction to Water and Wastewater Treatment Tech (3 CR) Provides entry-level students with a general overview of the entire water supply, treatment, and disposal system. Traces water supply from raw state through treatment, storage, distribution, use, waste collection, and discharge back to the environment. Covers aspects of water supply and wastewater treatment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ENV 115 Water Purification (3 CR) Prerequisite: ENV 110 and ENV 148 or department approval. Explores principles of water purification including secretion, sedimentation, rapid sand filtration, chlorination, treatment, and prevention of disease. Studies fundamentals of bacteriology, mycology, and parasitology, emphasizing their relationships to community health. Includes soil, water, wastewater, and industrial microbiology. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ENV 148 Math for Water and Wastewater Treatment Operations (3 CR) Introduces students to basic math calculations relating to water and wastewater concepts and operations. Prepares students for Waterworks and Wastewater Works Operators certification exam. Lecture 3 hours per week.

ENV 149 Wastewater Treatment Plant Operation (3 CR) Prerequisite: ENV 110 and ENV 148 or department approval. Teaches principles, practices and desired function and operation of a variety of wastewater treatment unity processes. Evaluates the operation of processes by determination of the information and testing required for evaluation and performing the subsequent necessary calculations. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ENV 161 Introduction to Environmental Compliance (3 CR) Examines the statutory history

of significant environmental legislation and the promulgation of rules and regulations attendant to these laws. Emphasis will be placed on 40 CFR and appropriate Virginia environmental code. Students will gain basic proficiency in the proper sampling protocols for soil, water, and air. Lecture 3 hours per week.

ENV 162 Environmental Principles in Public Health (3 CR) Examines critical factors involved in environmental/ public health administration in the current post-911 society. Topics covered will include basic risk analysis and fate and transport modeling environmental microbiology and toxicology with implications on genetics, GIS, and bioterrorism/ infectious diseases. Lecture 3 hours per week.

ETR – Electronics Technology

ETR 113-114 DC and AC Fundamentals I-II (4 CR, 4 CR) Prerequisite for ETR 113: Algebra I. Prerequisite for ETR 114: ETR 113. Prerequisite or corequisite for ETR 114: MTH 115. Studies DC and AC circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze and measure electrical quantities. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 123-124 Electronic Applications I-II (1 CR, 1 CR) Co-requisite: ETR 141-142. Provides laboratory and shop assignment/jobs as applied to basic electronic devices, circuits, and systems with emphasis on practical measurements. Laboratory 3 hrs per week.

ETR 141-142 Electronics I-II (3 CR, 3 CR) Prerequisite: ETR 113 or ELE 133. Introduces electronic devices as applied to basic electronic circuits and systems. Lecture 3 hours per week.

ETR 250 Solid State Circuits (4 CR) (Prerequisite: Knowledge of DC/AC theory, and active devices and circuits, ETR 114 or equivalent). Teaches theory and application of amplifiers and oscillators. Includes amplifier circuit configurations, amplifier classes, operational amplifiers, power amplifiers, bandwidth distortion, and principles of feedback. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 261 Microprocessor Application I (3 CR) Prerequisite: ETR 280 or equivalent. Teaches the fundamentals of microprocessors including architecture, internal operations, memory, I/O devices machine level programming and interfacing. Emphasizes instrumentation and microprocessor. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ETR 280 Introduction to Digital Logic Circuits and Computers (4 CR) Prerequisite ETR 113. Studies digital logic, Boolean algebra, and arithmetic circuits, using standard integrated circuits and the functional block approach. Introduces concepts of computers, the internal operation and control language. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 285 Fundamentals of Microcomputer Repair (4 CR) Provides the student with an exposure to the various techniques and procedures used to troubleshoot a microcomputer. May include an overview of a particular microprocessor system, use of isolation flow charts, test point charts, prints, diagnostic routines, component testing and fault isolation labs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 286 Principles and Applications of Robotics (3 CR) Prerequisites: ELE 134 or ETR 113 and co-requisite IND 250. Provides an overview of terminology, principles, practices, and applications of robotics. Studies development, programming; hydraulic, pneumatic, electronic controls; sensors, and system troubleshooting. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

FIN - Financial Services

FIN 107 Personal Finance (3 CR) Presents a framework of personal money management concepts, including establishing values and goals, determining sources of income, managing income, preparing a budget, developing consumer buying ability, using credit, understanding savings and insurance, providing for adequate retirement, and estate planning. Lecture 3 hours per week.

FIN 215 Financial Management (3 CR) Prerequisites: ACC 212, ACC 214, BUS 125 and BUS 225. Introduces basic financial management topics including statement analysis, working capital, capital budgeting, and long-term financing. Focuses on Net Present Value and Internal Rate or Return techniques, lease vs. buy analysis, and Cost of Capital computations. Uses problems and cases to enhance skills in financial planning and decision making. Lecture 3 hrs. per week.

FRE – French

FRE 101-102 Beginning French I-II (4 CR, 4 CR) Prerequisite for FRE 102: FRE 101. Introduces understanding, speaking, reading, and writing skills

and emphasizes basic French sentence structure. Lecture 4 hours per week.

FRE 201-202 Intermediate French I-II (3 CR, 3 CR) Prerequisites: For FRE 201, prerequisite is FRE 102; for FRE 202, prerequisite is FRE 201. Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. Lecture 3 hours per week.

FST – Fire Science

FST 100 Principles of Emergency Services (3 CR) Provides an overview to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function to public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics. Lecture 3 hours per week.

FST 111 Hazardous Materials Response (3 CR) Studies hazardous materials storage, standards, and applicable laws designed to protect the public and emergency personnel. Discusses specific methods and techniques used by the emergency worker in the abatement of hazardous materials incidents. Lecture 3 hours per week.

FST 135 Fire Instructor I (3 CR) Emphasizes development of teaching methods and aids, including role-playing, small group discussion and development of individual learning methods and materials. Requires students to develop lesson plans and make presentations on appropriate topics. (Based on current requirements of NFPA 1041, Standards for Fire Instructor Professional Qualifications and prepares student for certification as Fire Instructor I and II. Lecture 3 hours per week.

FST 140 Fire Officer I (4 CR) Prerequisite: FST 135. Presents a basic course to help individuals develop the skills needed to supervise and direct personnel, and manage resources at the company level; and is based on the current requirements of the NFPA 1021, Standards for Fire Officer Professional Qualifications. Prepares student for certification as Fire Officer I. Lecture 4 hours per week.

FST 235 - Strategy and Tactics (3 CR) Provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment, and extinguishing agents on the fire ground. Lecture 3 hours per week.

FST 250 Fire Officer II (3 CR) Prerequisite: FST 140 or Certification as Fire Officer I. Presents an intermediate-level course to help individuals further develop the skills needed to supervise and direct personnel, manage resources at the company level; and is based on the current requirements of the NFPA 1021, Standards for Fire Officer Professional Qualifications. Prepares student for certification as Fire Officer II. Lecture 3 hours per week.

GEO – Geography

GEO 200 Introduction to Physical Geography (3 CR) Studies major elements of the natural environment including earth-sun relationship, land forms, weather and climate, natural vegetation and soils. Introduces the student to types and uses of maps. Lecture 3 hours per week.

GEO 210 People and the Land: an Introduction to Cultural Geography (3 CR) Focuses on the relationship between culture and geography. Presents a survey of modern demographics, landscape modification, material and non-material culture, language, race and ethnicity, religion, politics, and economic activities. Introduces the student to types and uses of maps. Lecture 3 hours per week.

GEO 220 World Regional Geography (3 CR) Studies physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions, and examines the geographical background of those problems. Introduces the student to types and uses of maps. Lecture 3 hours per week.

GIS – Geographic Information Systems

GIS 101 Introduction to Geospatial Technology I (3 CR) Prerequisite: Basic Computer Literacy. Provides an introduction to the concepts of Geographic Information Systems (GIS), Global Positioning Systems, (GPS) and remote sension components of Geospatial Technology. Teaches the introductory concepts of geographic locatio and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology. Part I of II. Lecture 3 hours per week.

GIS 102 Introduction to Geospatial Technology II (3 CR) Prerequisite: Basic Computer Literacy. Continues with the concepts of Geographic Information Systems (GIS), Global Positioning Systems (GPS) and remote sensing components of Geospatial Technology. Covers additional concepts of geographic location and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology. Part II of II. Lecture 3 hours.

GIS 200 Geographical Information Systems I (3 CR) Prerequisite: EGR 216, ITE 115, or instructor approval. Provides hands-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GIS 201 Geographic Information Systems II (3 CR.) Prerequisite: GIS 200. Provides a continuation of GIS 200, with emphasis on advanced topics in problem-solving, decision-making, modeling, programming, and data management. Covers map projections and data formats, and methods for solving the problems they create. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GIS 205 GIS 3-Dimensional Analysis (3 CR) Co-requisite: GIS 201. Introduces GIS 3D (three-dimensional) concepts and practices with a concentration on displaying, creating and analyzing spatial GIS data using 3D. Covers 3D shape files, 3D data formats such Tin's, DEM's, grids and controlling the perspective and scale of 3D data through, rotating, panning and zooming. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GIS 210 Understanding Geographic Data (3 CR) Co-requisite: GIS 200. Provides the student an introduction to geographic data and the principles behind their construction. Introduces the concepts for measuring locations and characteristics of entities in the real world. Exposes the student to the limitations and common characteristics of geographic data. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GOL - Geology

GOL 105 Physical Geology (4 CR) Prerequisite: A placement recommendation for ENG 111 or succesful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG 7). Introduces the composition and structure of the earth and modifying agents and processes. Investigates the formation of minerals and rocks, weathering, erosion, earthquakes, and crustal deformation. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GOL 106 Historical Geology (4 CR) Prerequisites: GOL 105 recommended but not required and a placement recommendation for ENG 111 or succesful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG 7). Traces the evolution of the earth and life through time. Presents scientific theories of the origin of the earth and life and interprets rock and fossil record. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GOL 135 Field Studies in Geology (1–2 CR) Investigates geologic phenomena. Includes activities such as observation of regional geology and landforms, collection of samples, and measurement and interpretation of geologic structures. Field studies 3-6 hours per week.

HIM – Health Information Management

HIM 125 Medical Report Transcription (3 CR) Prerequisite: AST 245 or department approval and ability to type 40 words per minute. Develops skill in the transcription and preparation of reports for the medical record and in the operation and care of dictating and transcribing equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HIM 130 Healthcare Information Systems (3 CR) Focuses on microcomputer applications, information systems and applications in the healthcare environment. Lecture 3 hours per week.

HIM 149 Introduction to Medical Practice Management (2 CR) Introduces principles of administrative practice management. Examines patient scheduling, records management, financial systems and other office systems/ procedures. Focuses on the development of organizational and decision-making skills utilized by the practice manager. Lecture 2 hours per week.

HIM 150 - Health Records Management (3 CR) Presents documentation format and content of the medical record relevant to the coding function. Introduces application of standard techniques

for filing, maintenance, and acquisition of health information. Examines the processes of collecting, computing, analyzing, interpreting, and presenting data related to health care services. Includes legal and regulatory guidelines for the control and use of health information data. Lecture 3 hours per week.

HIM 190 Coordinated Internship I ***For Medical Office Specialist:*** (2 CR) Prerequisite: All curriculum requirements must be completed. Co-requisite: HIM 254. Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Lecture 2 hours per week.

HIM 196 On-Site Training in Medical Transcription ***For Medical Office Transcriptionist:*** (5 CR) Prerequisite: All curriculum requirements must be completed. Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the college. Lecture 5 hours per week.

HIM 226 Legal Aspects of Health Record Documentation (2 CR) Presents the legal requirements associated with health record documentation. Emphasizes the policies and procedures concerning the protection of the confidentiality of a patient's health records. Lecture 2 hours per week.

HIM 230 - Information Systems and Technology in Health Care (3 CR) Explores computer technology and system application in health care. Introduces the information systems life cycle. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HIM 233 - Electronic Health Records Management (3 CR) Prerequisites: HIM 130 and HIM 230. Studies new trends in management and processing of health information with emphasis on the electronic health record (EHR). Covers the definition, benefits, standards, functionality, confidentiality and security, and impact of the EHR in the healthcare environment. Explores implementation of the EHR including infrastructure required, project management techniques, information technology systems, workflow processes and redesign in various health care settings. Discusses legal issues created by implementation of the EHR. Lecture 3 hours per week.

HIM 249 Supervision and Management Practices (3 CR) Introduces supervision and management principles with emphasis on the application of these principles in the health information setting. Lecture 3 hours per week.

HIM 253 Health Records Coding (4 CR) Prerequisite: HLT 143. Co-requisite: HLT 144. It is strongly recommended that students with no coding background take HIM 195. Examines the development of coding classification systems. Introduces ICD-9-CM coding classification system, its format and conventions. Stresses basic coding steps and guidelines according to body systems. Provides actual coding exercises in relation to each system covered. Lecture 4 hours.

HIM 254 Advanced Coding and Reimbursement (4 CR) Prerequisite: HIM 253, HLT 143, and HLT 144. Stresses advanced coding skills through practical exercises using actual medical records. Introduces CPT-4 coding system and guidelines for out-patient/ambulatory surgery coding. Introduces prospective payment system and its integration with ICD-9-CM coding. Lecture 4 hours.

HIM 290 Coordinated Internship II (1–5 CR) Prerequisite: All curriculum requirements must be completed. Departmental approval required. Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Variable hours.

HIS – History

HIS 101-102 History of Western Civilization I-II (3 CR, 3 CR) Examines the development of western civilization from ancient times to the present. The first semester ends with the seventeenth century; the second semester continues through modern times. Courses may be taken out of sequence. Lecture 3 hours per week.

HIS 111-112 World Civilization I-II (3 CR, 3 CR) Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present. Lecture 3 hours per week.

HIS 121-122 United States History I-II (3 CR, 3 CR) Surveys United States history from its beginning to the present. HIS 121 covers America from the 1500s to 1865 and HIS 122 continues the course to the 1990s. Courses may be taken out of sequence. Lecture 3 hours per week.

HIS 141-142 African-American History I-II (3 CR) Surveys the history of black Americans from their African origins to the present. Part I of II. Lecture 3 hours per week.

HIS 205 Local History (3 CR) Studies the history of the local community and/or region. Lecture 3 hours per week.

HIS 241-42 History of Russia I-II (3 CR, 3CR) Surveys history of Russia from earliest times to the present. Includes political, economic, multi-national, social, and cultural aspects of Russian and Soviet history. Lecture 3 hours per week.

HIS 251 History of Middle East Civilization I (3 CR) Surveys intellectual, cultural, social, economic and religious patterns in the civilizations of the Middle East. Covers Semitic, Indo-European, and Tarkic-speaking peoples from pre- Islamic to the present. Part I of II. Lecture 3 hours per week.

HIS 267 The Second World War (3 CR) Examines causes and consequences of the Second World War. Includes the rise of totalitarianism, American neutrality, military developments, the home fronts, diplomacy, and the decision to use the atomic bomb. Lecture 3 hours per week.

HIS 269 Civil War and Reconstruction (3 CR) Studies factors that led to the division between the States. Examines the war, the home fronts, and the era of Reconstruction. Lecture 3 hours per week.

HIS 279 Age of the American Revolution (3 CR) Examines the factors that led to the separation of the American Britain colonies from Great Britain. Covers the Revolutionary War, the problems faced by the revolutionary government, and postwar events that led to the adoption the United States Constitution. Lecture 3 hours per week.

HLT - Health

(Only the health courses below marked with an asterisk (*) are approved to meet the HLT/PED requirement.)

HLT 100* First Aid and Cardiopulmonary Resuscitation (2-3 CR) Focuses on the principles and techniques of safety, first aid, and cardiopulmonary resuscitation. Lecture 2-3 hours per week.

HLT 105* Cardiopulmonary Resuscitation (1 CR) Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression, choking, life-threatening emergencies, and sudden illness. Lecture 1 hour per week.

HLT 106* First Aid and Safety (2 CR) Focuses on the principles and techniques of safety and first aid. Lecture 2 hours per week.

HLT 110* Concepts of Personal and Community Health (2–3 CR) Studies the concepts related to the maintenance of health, safety, and the prevention of illness at the personal and community level. Lecture 2–3 hours per week.

HLT 116* Introduction to Personal Wellness Concepts (2–3 CR) Introduces students to the dimensions of wellness including the physical, emotional, environmental, spiritual, occupational, and social components. Lecture 2-3 hours per week.

HLT 135* Child Health and Nutrition (3 CR) Focuses on the physical needs of preschool children and methods to meet these needs. Emphasizes health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases, and safety related to health, growth, and development. Lecture 3 hours per week.

HLT 141 Introduction to Medical Terminology (1 CR) Focuses on medical terminology for students preparing for careers in the health professions. Required for students admitted to the AAS Degree program in Nursing. Lecture 1 hour per week.

HLT 143-144 Medical Terminology I-II (3 CR, 3 CR) Provides an understanding of medical abbreviations and terms. Includes study of prefixes, suffixes, word stems, and technical terms emphasizing proper spelling, pronunciation, and usage. Emphasizes more complex skills and techniques in understanding medical terminology. Lecture 3 hours per week.

HLT 206 Exercise Science (3 CR) Surveys scientific principles, methodologies, and research as applied to exercise and physical fitness. Emphasizes physiological responses and adaptations to exercise. Addresses basic elements of kinesiology, biomechanics, and motor learning. Presents an introduction to the physical fitness industry. Lecture 3 hours per week.

HLT 208 Fitness and Exercise Training (3 CR) Prerequisite: HLT 100. Introduces techniques for conducting physical fitness assessments and includes an introduction to electrocardiography. Emphasizes tests of cardiorespiratory fitness, muscular strength and endurance, joint flexibility, body composition, and pulmonary capacity. Emphasizes the safety guidelines and precautions used in testing. Covers equipment use and maintenance. Lecture 2 hours. Laboratory 2-3 hours. Total 4-5 hours per week.

HLT 230* Principles of Nutrition and Human Development (3 CR) Teaches the relationship

between nutrition and human development. Emphasizes nutrients, balanced diet, weight control, and individual nutritional needs. Lecture 3 hours per week.

HLT 240* Consumer Health Education (3 CR) Focuses on health fads, myths, misunderstandings, quackeries, deceptions, and fraudulent health practices. Includes selecting and purchasing health products, services, consumer protections, and in the planning and financing of medical care. Lecture 3 hours per week.

HLT 290 Coordinated Internship (3 CR) Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/ practice ratio not to exceed 1:5 hours. May be repeated for credit.

HRI – Food Service Management

HRI 106 Principles of Culinary Arts I (3 CR) Introduces the fundamental principles of food preparation and basic culinary procedures. Stresses the use of proper culinary procedures combined with food service, proper sanitation, standards of quality for food items that are made, and proper use and care of kitchen equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRI 107 Principles of Culinary Arts II (3 CR) Prequisites: HRI 106, HRI 158 and HRI 219. Introduces the fundamental principles of food preparation and basic culinary procedures. Stresses the use of proper culinary procedures combined with food science, proper sanitation, standards of quality for food items that are made, and proper use and care of kitchen equipment. Part II of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRI 119 Applied Nutrition for Food Service (3 CR) Studies food composition, nutrition science, and application of nutrition principles by the food service professional. Provides the student with a basic understanding of human nutrition and application of nutrition in the service of commercially prepared meals. Lecture 3 hours.

HRI 128 Principles of Baking (3 CR) Prerequisite or co-requisite: HRI 158. Instructs the student in the preparation of breads, pastries, baked desserts, candies, frozen confections, and sugar work. Applies scientific principles and techniques of baking. Promotes the knowledge/skills required to prepare baked items, pastries and confections. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 145 Garde Manger (3 CR) Prerequisite: HRI 106 and HRI 158. Studies garde manger, the art of decorative cold food preparation and presentation. Provides a detailed practical study of cold food preparation and artistic combination and display of cold foods. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 154 Principles of Hospitality Management (3 CR) Presents basic understanding of the hospitality industry by tracing the industry's growth and development, reviewing the organization and management of lodging, food, and beverage operations, and focusing on industry opportunities and future trends. Lecture 3 hours per week.

HRI 158 Sanitation and Safety (3 CR) Covers the moral and legal responsibilities of management to insure a sanitary and safe environment in a food service operation. Emphasizes the causes and prevention of foodborne illnesses in conformity with federal, state and local guidelines. Focuses on OSHA standards in assuring safe working conditions. Lecture 3 hour per week.

HRI 206 International Cuisine (3 CR) Prerequisite: HRI 106 and HRI 158. Introduces the concepts of cultural differences and similarities and the preparation of the food specialties of the major geographical areas of the world. Focuses on emerging cuisines as they become popular. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 207 American Regional Cuisine (3 CR) Prerequisite: HRI 106 and HRI 158. Studies the distinct regional cooking styles of America and its neighbors. Emphasizes the indigenous ingredients as well as the cultural aspect of each region's cooking style. Includes the preparation of the various regional foods. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 215 Food Purchasing (3 CR) Presents the method and procedures for purchasing food for hotels, restaurants and institutions. Deals with markets, federal and trade grades, governmental regulations, packaging, comparative versions price buying, yields and quality control. Lecture 3 hours per week.

HRI 218 Fruit, Vegetable, and Starch Preparation (3 CR) Prerequisite: HRI 106 and HRI 158. Instructs the student in the preparation of fruits, vegetables, grains, cereals, legumes and farinaceous

products. Promotes the knowledge/skills necessary to prepare menu items from fruits, vegetables, and their byproducts, and to select appropriate uses as meal components. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 219 Stock, Soup, and Sauce Preparation (3 CR) Prerequisite: HRI 106 and HRI 158. Instructs the student in the preparation of stocks, soups, and sauces. Promotes the knowledge/skills to prepare stocks, soups, and sauces, and to select appropriate uses as meal components. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 220 Meat, Seafood, and Poultry Preparation (3 CR) Prerequisite: HRI 106 and HRI 158. Provides the study and preparation of meat, poultry, shellfish, fish, and game. Promotes the knowledge/skills required to select appropriate use of these foods as meal components. Lecture 2 hour per week. Laboratory 3 hours. Total 5 hours per week.

HRI 225 Menu Planning and Dining Room Service (3 CR) Covers fundamentals of menu writing, types of menus, layout, design and food merchandising, and interpreting a profit and loss statement as it relates to menu pricing. Analyzes menus for effectiveness. Instructs on proper dining room service, customer seating, and dining room management. Emphasizes use of computer in management of food service operations. Lecture 3 hours per week.

HRI 251 Food and Beverage Cost Control I (3 CR) Prerequisite: MTH 120 or program head approval. Presents methods of pre-cost and pre-control as applied to the menu, purchasing, receiving, storing, issuing, production, sales and service which result in achievement of an operation's profit potential. Emphasizes both manual and computerized approaches. Lecture 3 hour per week.

HRI 280 Principles of Advanced Baking and Pastry (3 CR) Prerequisite: HRI 106, HRI 158 and HRI 128 or equivalent. Reviews foundation principles of classical and modern baking/pastry methods. Lecture 2 hours, Laboratory 3 Hours. Total 5 hours per week.

HRI 281 - Artisan Breads (3 CR) Prerequisite: HRI 280. Provides an integrated study of both classical and modern baking methods. Focuses on craft baking using simple ingredients to create superior products. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 282 - European Tortes and Cakes (3 CR) Prerequisite: HRI 280. Provides an integrated study of European tortes and cakes. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 283 - Custards and Cremes (3 CR) Prerequisite: HRI 280. Provides an integrated study of classical and contemporary custards and cremes as menu items and recipe ingredients. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 284 - Speciality, Spa and Plated Desserts (3 CR) Prerequisite: HRI 280. Provides an integrated study of specialty, spa and plated desserts, which possess enhanced value through artistic presentation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 285 - Chocolate and Sugar Arts (3 CR) Prerequisite: HRI 280. Focuses on an integrated study of chocolate and sugar as used by the pastry artist to create candies, confections and showpieces. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 286 - Wedding and Specialty Cakes (3 CR) Prerequisites: HRI 280, HRI 282 and HRI 285. Provides an integrated study of classical and contemporary wedding and specialty cakes. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 290 Coordinated Internship in Hospitality Management (3 CR) Supervises the on-the-job training in selected health agencies, business, industrial, or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

HRT - Horticulture

HRT 110 Principles of Horticulture (3 CR) Introduces concepts of plant growth and development. Covers horticultural practices, crops and environmental factors affecting plant growth. Lecture 3 hours per week.

HRT 115 Plant Propagation (3 CR) Teaches principles and practices of plant propagation methods. Examines commercial and home practices. Provides experience in techniques using seed-spores, cuttings, grafting, budding, layering, and division. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 117 Tools and Equipment (2 CR) Introduces tools and equipment used in commercial horticulture. Emphasizes power-operated equipment including

spreaders, sprayers, saws and tractors. Stresses safety, maintenance, minor repair and appropriate tool section. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HRT 201-202 Landscape Plants I-II (3 CR, 3 CR) Studies landscape use of plants. Considers ornamental value, growth habit, identification, and limitations. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 205 Soils (3 CR) Teaches theoretical and practical aspects of soils and other growing media. Examines media components, chemical and physical properties, and soil organisms. Discusses management and conservation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 207 Plant Pest Management (3 CR) Teaches principles of plant pest management. Covers morphology and life cycles of insects and other small animal pests and plant pathogens. Lab stresses diagnosis, chemical and non-chemical control of specific pests, and pesticide safety. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 227 Professional Landscape Management (3 CR) Focuses on basic practices and techniques involving landscape management. Includes development of a year-round management calendar and preparation of bid and contract proposals. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 231 Planting Design I (3 CR) Applies landscape theory and principles of drawing to the planning of residential and small-scale commercial landscape designs. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 232 Planting Design II (3 CR) Prerequisite: HRT 231. Applies landscape theory and principles of drawing to the planning of large-scale landscape designs. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 246 Herbaceous Plants (2 CR) Studies identification, culture and uses of herbaceous plants in landscaping. Includes perennials, biennials, common bulbs and annuals. Teaches scientific and common names of plants. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HRT 269 Professional Turf Care (3 CR) Covers turfgrass identification, selection, culture, propagation, and pest control. Surveys commercial turf care operations and use of common equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 285 Management of Horticulture Business (3 CR) Studies the business and selling practices, which relate to wholesale and retail horticulture businesses including garden centers, greenhouses, nurseries, and flower shops. Examines planning and layout, suppliers, merchandising, maintenance, and display of horticultural items. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 296 Training in Arboretum Internship (2 CR) Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the horticulture program office. Variable hours.

HRT 297 Cooperative Education (2 CR) Supervises on-the-job training for pay in approved business, industrial and service firms, coordinated by the horticulture program office. Variable hours.

HUM – Humanities

HUM 201 Survey of Western Culture I (3 CR) Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers the following periods: Ancient and Classical, Early Christian and Byzantine, Medieval, and Early Renaissance. Lecture 3 hours per week.

HUM 202 Survey of Western Culture II (3 CR) Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers time periods: Renaissance, Baroque, Enlightenment, Romantic, and Modern. Lecture 3 hours per week.

HUM 215 Native American Culture (3 CR) Surveys the cultural history of Native (Indian) peoples in the Americas from the pre-Columbian era until the present. Studies history, religion, literature, arts, life-ways and worldviews which comprise the diverse traditions of Native peoples. Lecture 3 hours per week.

IDS – Interior Design

IDS 100 Theory and Techniques of Interior Design (3 CR) Introduces drafting and presentation, color theory, and coordination, space planning and arrangement of furnishings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 105 Architectural Drafting for Interior Design (3 CR) Introduces tools and equipment, lettering, methods of construction, designing and delineation of architecture. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 109 Styles of Furniture and Interiors (3 CR) Teaches history of furnishings and interiors from the ancient world to the present. Lecture 3 hours per week.

IDS 116 Period Residential Design (4 CR) Prerequisite: IDS 109. Plans a period-inspired interior. May use field trips and visual materials to enhance this project. Presents problems and their solutions found in this kind of project. May require a final visual presentation with all necessary furnishings, materials, and color boards with rendered perspectives. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

IDS 205 Materials and Sources (3 CR) Presents textiles, floor and wall coverings, and window treatments. Emphasizes construction, fiber, finish, and code applications. May use research and field trips to trade sources representing these elements. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 206 Lighting and Furnishings (3 CR) Provides instruction in lighting terminology and calculations and instructions in techniques of recognizing quality of construction in furnishings and related equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 225 Business Procedures (3 CR) Provides instruction in preparation of contracts, purchase orders, specifications, and other business forms used in the interior design field. Lecture 3 hours per week.

IDS 245 Computer Aided Drafting for Interior Designers (3 CR) Prerequisite: Basic computer literacy. Instructs in the use of the computer for drafting of floor plans, elevations, perspectives, shadowing, lighting and color applications using AutoCad software and the architectural and engineering software. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

IND – Industrial Technology Program

IND 75 Industrial Measurements and Conversions (1 CR) Covers a review of basic arithmetic principles with an intensive application of measurement and calibration devices, such as dial calipers, rulers, and various micrometers. Develops a proficiency for entrance into skilled trades or industrial practices. Lecture 1 hour per week.

IND 108 Technical Computer Applications (3 CR) Develops data entry proficiency for technical application and word processing as applied to technology. Presents an introduction to computer operating systems as related to technical applications. Includes demonstrations of selected technical topics such as CAD, CNC, Graphic illustration I/Os involving PLCs, telecommunications (modems), and process control. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

IND 113 Materials and Processes in Manufacturing I (3 CR) Studies materials and processes for the manufacture of products. Investigates the nature of various materials. Examines the manufacturing processes of industry and their effects on materials. Lecture 3 hours per week.

IND 116 Applied Technology (3 CR) Introduces basic information and problem solving techniques in liquids, gases, solids, metrics, mechanics, forces, simple machines, heat, light, sound and nuclear energy as applied in industrial engineering technologies. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

IND 230 - Applied Quality Control (3 CR) Studies principles of inspection and quality assurance with emphasis on statistical process control. May include the setting up, maintaining, and interpreting of control charts, and review of basic metrology. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

IND 250 Introduction to Basic Computer Integrated Manufacturing (3 CR) Presents basic principles used in the design and implementation in a computer integrated manufacturing system. Emphasizes team concept and all aspects of a computer integrated manufacturing system to include the following: Robotics, Conveyor Control, Machining Center Integration Quality Control, Statistical Quality Control, and Computer Integrated Manufacturing (CIM) software. Lecture 1 hours. Laboratory 4 hours. Total 5 hours per week.

IND 251 Automated Manufacturing Systems I (4 CR) Presents basic principles used in the design and implementation in manufacturing work cells. Includes selection of the robot system, worksite, application cell sensors, development of cycle times, and economic analysis. Prerequisite: divisional approval. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

INT – Interpreter Education

INT 130 Interpreting: An Introduction to the Profession (3 CR) Introduces basic principles and practices of interpreting, focusing on the history of the profession, logistics of interpreting situations, regulatory and legislative issues, resources, and the Code of Ethics. Describes the state quality assurance screening and national certification exam systems, including test procedures. Lecture 3 hours per week.

ITD – Information Technology Database and Web Design

ITD 110 Web Page Design I (3 CR) Stresses a working knowledge of web site designs, construction, and management using HTML or XHTML. Includes headings, lists, links, images, image maps, tables, forms, and frames. Lecture 3 hours per week.

ITD 112 Designing Web Page Graphics (3 CR) Prerequisite or Co-requisite: ITD 110 or instructor permission. Explores the creation of digital graphics for web design. Includes basic design elements such as color and layout will be explored utilizing a computer graphics program(s). Lecture 3 hours per week.

ITD 130 Database Fundamentals (3 CR) Introduces the student to Relational Database and Relational Database theory. Includes planning, defining and using a database; table design, linking and normalization; types of database, database description and definition. Lecture 3 hours per week.

ITD 210 Web Page Design II (3 CR) Prerequisite: ITD 110 or instructor's permission. Incorporates advanced techniques in web site planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editor software(s). Lecture 3 hours per week.

ITD 212 Interactive Web Design (3 CR) Prerequisite: ITD 112 or instructor permission. Provides techniques in interactive design concepts to create cross-platform, low-bandwidth animations utilizing a vector based application. Emphasizes the importance of usability, accessibility, optimization, and performance. Lecture 3 hours per week.

ITD 220 E-Commerce Administration (3 CR) Prerequisite: Instructor permission. Emphasizes techniques to plan and to design a platform-independent commerce Web site. Focuses on web business strategies, and the hardware and software tools necessary for Internet commerce, including comparison and selection of commerce architecture, installation and configuration, security considerations, and planning of a complete business-to-consumer and business-to-business site. Lecture 3 hours per week.

ITD 250 Database Architecture and Administration (4 CR) Prerequisite: ITD 130 or instructor permission. Involves in-depth knowledge about the underlying architecture of databases and the handling of database administration. Lecture 4 hours per week.

ITD 251 Database System Development (3 CR) Prerequisite: ITD 130 or instructor permission. Prerequisite or Co-requisite: ITP 220 or ITP 236 or instructor permission. Provides the student the opportunity to solve a business problem from identification of the problem through the logical design and implementation on a database. Makes use of the knowledge that was gained in the prerequisite courses. Lecture 3 hours per week.

ITD 258 Database Performance and Tuning (3 CR) Prerequisite: ITD 130 or instructor permission. Emphasizes instruction to optimize the performance of a database management system. Includes methods for tuning data access and storage and discussions of resolving data performance problems. Lecture 3 hours per week.

ITE – Information Technology Essentials

ITE 102 Computer and Information Systems (1 CR) Introduces terminology, concepts, and methods of using computers in information systems. This course teaches computer literacy; not intended for Information Technology majors. Lecture 1 hour per week.

ITE 115 Introduction to Computer Applications and Concepts (3 CR) Covers computer concepts and Internet skills and use a software suite, which includes word processing, spreadsheet, database, and presentation software to demonstrate skills. Recommended prerequisite keyboarding skills. CIS may not be substituted for ITE 115. Lecture 3 hours per week.

ITE 140 Spreadsheet Software (3 CR) Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics include type and edit text in a cell, enter data on multiple

worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data. Covers MOS Excel objectives Lecture 3 hours. Total 3 hours per week.

ITN – Information Technology Networking

ITN 109 Internet and Network Foundation (3 CR) Provides a basic comprehension of Internet and network technologies including IT job roles, connection methods, TCP/ IP functionality and DNS. Explores web server technologies with security and project management concepts. Introduces network creation, physical and logical topologies including media properties, server types, IP addressing and network security. Lecture 3 hours per week.

ITN 110 - Client Operating System (Windows 7) (3 CR) Prerequisite: ITN 109. Introduces an overview of instruction in installation, configuration, administration, and troubleshooting of Client Operating System (Windows 7) in a networked data communications environment. Lecture 3 hours per week.

ITN 111 - Server Administration (Windows Server 2008) (3 CR) Prerequisite: ITN 109. Covers basic instruction in various network protocols, name resolution services, remote access, security, and print installation, configuration, administration, monitoring, and troubleshooting of Server Administration software(Windows Server 2008) in an Active Directory domain environment. Lecture 3 hours per week.

ITN 112 - Network Infrastructure (Windows Server 2008) (3 CR) Prerequisite: ITN 111. Provides extensive instruction for the technical knowledge required for installation, configuration, administration, monitoring, and troubleshooting of Network Infrastructure services (Windows Server 2008) such as NDS, DHCP, WINS, RRAS, NAT, and Certificate Authority to support the network infrastructure. Lecture 3 hours per week.

ITN 113 - Active Directory (Windows Server 2008) (4 CR) Prerequisite: ITN 111. Emphasizes instruction in installation, configuration, and administration, monitoring, and troubleshooting of Active Directory (Windows Server 2008) components, DNS, Group Policy objects, RIS, and security. Lecture 4 hours per week.

ITN 170 Linux System Administration (3 CR) Prerequisite: ITN 109 or instructor's permission. Focuses instruction on the installation, configuration and administration of the Linux operating system and emphasizes the use of Linux as a network client and workstation. Lecture 3 hours per week.

ITN 261 Network Attacks, Computer Crime and Hacking (3 CR) Prerequisite: ITN 109 or instructor's permission. Encompasses in-depth exploration of various methods for attacking and defending a network. Explores network security concepts from the viewpoint of hackers and their attack methodologies. Includes topics about hackers, attacks, Intrusion Detection Systems (IDS) malicious code, computer crime and industrial espionage. Lecture 3 hours per week.

ITP – Information Technology Programming

ITP 100 Software Design (3 CR) Introduces principles and practices of software development. Includes instruction in critical thinking, problem solving skills, and essential programming logic in structured and object-oriented design using contemporary tools. Lecture 3 hours per week.

ITP 120 Java Programming I (4 CR) Prerequisite: ITP 100 or instructor permission. Entails instruction in fundamentals of object-oriented programming using Java. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. Lecture 4 hours per week.

ITP 136 C# Programming I (4 CR) Prerequisite: ITP 100 or instructor permission. Presents instruction in fundamentals of object-oriented programming and design using C#. Emphasizes program construction, algorithm development, coding, debugging, and documentation of applications within the .NET framework. Lecture 4 hours per week.

ITP 136L C# Programming I Laboratory (1 CR) Prerequisite or Co-requisite: ITP 136. Provides problem solving experience to supplement instruction in C# Programming I for students completing the GIS Developer Concentration in the Information Systems Technology degree program. Laboratory 2 hours per week.

ITP 140 Client Side Scripting (3 CR) Prerequisite: ITD 110 and ITP 100 or instructor permission. Provides instruction in fundamentals of Internet application

design, development, and deployment using client side scripting language(s). Lecture 3 hours per week.

ITP 170 Project Management (3 CR) Prerequisite: Instructor permission. Introduces the concepts of project management as defined by the Project Management Institute, the accreditation body for project management. Lecture 3 hours per week.

ITP 220 Java Programming II (4 CR) Prerequisite: ITP 120. Prerequisite or Co-requisite: ITD 130. Imparts instruction in application of advanced object-oriented techniques to application development using Java. Emphasizes database connectivity, inner classes, collection classes, networking, and threads. Lecture 4 hours per week.

ITP 225 Web Scripting Languages (3 CR) Prerequisite: ITD 110 and ITP 140 or instructor permission. Introduces students to the principles, systems, and tools used to implement Web applications. Provides students with a comprehensive introduction to the programming tools and skills required to building and maintain interactive Web sites. Students will develop Web applications utilizing client-side and server-side scripting languages along with auxiliary tools needed for complete applications. Lecture 3 hours per week.

ITP 236 C# Programming II (4 CR) Prerequisite: ITP 136. Prerequisite or Co-requisite: ITD 130. Focuses instruction in advanced object-oriented techniques using C# for application development. Emphasizes database connectivity and networking using the .NET framework. Lecture 4 hours per week.

ITP 244 ASP.NET – Server-Side Programming (3 CR) Prerequisite: ITD 130 and ITP 136. Entails instruction in creation of ASP.NET Web applications to deliver dynamic content to a Web site utilizing server controls, web forms, and web services to accomplish complex data access tasks. Lecture 3 hours per week.

ITP 246 Java Server-Side Programming (3 CR) Prerequisite: ITP 220 or instructor permission. Provides instruction in integration of web-based clients and server-side Java to three-tier business applications. Includes us of tools UML, XML, Java servlets, JSPs and JDBC database access. Lecture 3 hours per week.

ITP 298 Capstone (3 CR) Prerequisite: Instructor permission. Requires completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. Lecture 3 hours per week.

LGL – Legal Assisting

LGL 110 Introduction to Law and the Legal Assistant (3 CR) Introduces various areas of law in which a legal assistant may be employed. Includes study of court system (Virginia and federal) as well as a brief overview of criminal law, torts, domestic relations evidence, ethics, the role of the legal assistant and other areas of interest. Lecture 3 hours per week.

LGL 115 Real Estate Law for Legal Assistants (3 CR) Studies law of real property and gives in-depth survey of more common types of real estate transactions and conveyances such as deeds, contracts, leases, and deeds of trust. Focuses on drafting these various instruments and studies the system of recording and search of public documents. Lecture 3 hours per week.

LGL 117 Family Law (3 CR) Studies elements of a valid marriage, grounds for divorce and annulment separation, defenses, custody, support, adoptions, and applicable tax consequences. Includes property settlement, pre- and ante-nuptial agreements, pleadings, and rules of procedure. May include specific federal and Virginia consumer laws. Lecture 3 hours per week.

LGL 125 Legal Research (3 CR) Provides an understanding of various components of the law library, and emphasizes research skills through the use of digests, encyclopedias, reporter systems, codes, Shepard's Citations, ALR, and other research tools. May include overview of computer applications and writing projects. Lecture 3 hours per week.

LGL 126 Legal Writing (3 CR) Prerequisite: ENG 111 or permission of instructor. Studies proper preparation of various legal documents, including legal memoranda, letters, and pleadings. Involves practical applications. May include case and appellate briefs. Lecture 3 hours per week.

LGL 200 - Ethics for the Legal Assistant (1 CR) Examines general principles of ethical conduct applicable to legal assistants. Includes the application of rules of ethics to the practicing legal assistant. Lecture 1 hour per week.

LGL 210 Virginia and Federal Procedure (3 CR) Examines the rules of procedure in the Virginia and federal courts, including the Federal Rules of Civil

Procedure and the Rules of Practice and Procedure in the District Courts, Circuit Courts, Virginia Court of Appeals, and the Supreme Court of Virginia. Lecture 3 hours per week.

LGL 215 Torts (3 CR) Studies fundamental principles of the law of torts. May include preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes personal injury, products liability, and malpractice cases. Lecture 3 hours per week.

LGL 216 Trial Preparation and Discovery Practice (3 CR) Prerequisite: LGL 110 and LGL 125 or instructor's permission. Examines the trial process, including the preparation of a trial notebook, pretrial motions, and orders. May include the preparation of interrogatories, depositions, and other discovery tools used in assembling evidence in preparation for trial or an administrative hearing. Lecture 3 hours per week.

LGL 218 Criminal Law (3 CR) Focuses on major crimes, including their classification, elements of proof, intent, conspiracy, responsibility, parties, and defenses. Emphasizes Virginia Law. May include general principles of applicable constitutional law and criminal procedures. Lecture 3 hours per week.

LGL 225 Estate Planning and Probate (3 CR) Introduces various devices used to plan an estate, including wills, trusts, joint ownership and insurance. Considers various plans in light of family situations and estate objectives. Focuses on practices involving administration of an estate, including taxes and preparation of forms. Lecture 3 hours per week.

LGL 230 Legal Transactions (3 CR) Presents an in-depth study of general contract law, including formation, breach, enforcement, and remedies. May include an overview of the Uniform Commercial Code sales, commercial paper, and collections. Lecture 3 hours per week.

LGL 235 Legal Aspects of Business Organizations (3 CR) Studies the fundamental principles of agency law and the formation of business organizations. Includes sole proprietorship, partnerships, corporations, limited liability companies, and other business entities. Reviews preparation of the documents necessary for the organization and operation of businesses. Lecture 3 hours per week.

LGL 238 Bankruptcy (3 CR) Provides a practical understanding of non-bankruptcy alternatives and the laws of bankruptcy including Chapters 7, 11, 12 and 13 of the Bankruptcy Code. Emphasis will be placed on preparing petitions, schedules, statements and other forms. Lecture 3 hours per week.

MEC - Mechanical Engineering Technology

MEC 113 Materials and Processes of Industry (3 CR) Studies engineering materials and accompanying industrial manufacturing processes. Investigates nature of materials structure and properties from a design standpoint. Analyzes the effects of the various processes on materials and the process themselves. Includes machining, casting, forming, molding, hot/cold working, chipless machining, and welding. Addresses quality assurance and inspection procedures. Lecture 3 hours per week.

MEC 119 Introduction to Basic CNC and CAM (3 CR) Teaches the basic concepts of Computer Numerical Control (CNC) programming of Numerical Control Machinery with emphasis on Computer Aided Manufacturing (CAM)/ Computer Aided Drafting (CAD). Program writing procedures will be based on using the following: basic G-code programming language for CNC machinery, CAD/CAM programming systems to produce correct code for CNC Machinery, basic computer usage, CAD/CAM integration, and Code-tomachine transfer via Distributive Numeric Control (DNC). Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEC 131 Mechanics I – Statics for Engineering Technology (3 CR) Prerequisite: MTH 115 or equivalent. Co-requisite: MTH 116 or equivalent. Teaches Newton's laws, resultants and equilibrium of force systems, trusses and frames, determination of centroids, and distributed loads and moments of inertia. Introduces dry friction and force systems in space. Lecture 3 hours per week.

MEC 132 Mechanics II – Strength of Materials for Engineering Technology (3 CR) Prerequisite: MEC 131. Teaches the concepts of stress and strain. Provides an analysis of stresses and deformations in loaded members, connectors, shafts, beams, columns, and combined stress. Lecture 3 hours per week.

MEC 155 Mechanisms (2 CR) Studies the purpose and actions of cams, gear trains, levers, and other mechanical devices used to transmit control. Focuses on motions, linkages, velocities, and acceleration of points within a link mechanism; layout method for designing cams and gear grain. Requires preparation

of weekly laboratory reports. Lecture 1 hours per week. Laboratory 2 hours. Total 3 hours per week.

MEC 162 Fluid Mechanics – Hydraulics/ Pneumatics (3 CR) Introduces hydraulic and pneumatic systems found in construction equipment, road vehicles, and farm equipment. Includes the basic theory, construction, maintenance, and repair of hydraulic and pneumatic power systems. Lecture 3 hours per week.

MEC 205 - Piping and Auxiliary Systems (3 CR) Studies threaded pipe, welded pipe, isometric pipe sketching and layout, gaskets, packing, industrial hoses and tubing, basic steam system operations, automatic and manual valves, and positive displacement pumps. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEN – Mental Health

MEN 100 Introduction to Mental Health (3 CR) Surveys history of mental health from ancient to contemporary times, with special emphasis on impact of the psychoanalytic, humanistic, and behavioral movements in the treatment of mental illness. Includes examination of structure and functions of human service delivery systems, knowledge and skills of mental health workers, and current ethical and legal issues. Lecture 3 hours per week.

MEN 101-102 Mental Health Skills Training I-II (3 CR, 3 CR) Prerequisite for MEN 102: MEN 101. Develops skills necessary to function as a mental health worker, with emphasis on guided practice in counseling skills as well as improved self-awareness. Includes training in problem solving, goal-setting, and implementation of appropriate strategies and evaluation techniques relating to interaction involving a variety of client needs. Lecture 3 hours per week.

MEN 221-222 Group Process I-II (3 CR, 3 CR) Prerequisite for MEN 221: MEN 101-102. Prerequisite for MEN 222: MEN 221 or departmental approval needed. Studies the stages of group development, role of the group leader, and contemporary models of group counseling utilized in mental health counseling. Includes experiential training in group leadership. Lecture 3 hours per week.

MEN 225 Counseling Therapy (3 CR) Studies various models of counseling theories and appropriate application of counseling techniques in the helping profession. Lecture 3 hours per week.

MEN 290 Coordinated Practice in Mental Health (5 CR) Prerequisites: MEN 101-102 and departmental approval. Provides supervised experience in a community mental health/ human services agency. Students will spend 2 hours per week in a seminar class and a total of 180 hours at the placement site. Arrangements for placement are made the semester prior to the one in which the student actually takes the class. Contact the Internship Coordinator in March to make plans for a fall or summer semester placement or in October to plan for a spring semester placement.

MKT - Marketing

MKT 100 Principles of Marketing (3 CR) Presents principles, methods, and problems involved in the marketing of goods, services and ideas to consumers and organizational buyers. Discusses present-day problems and policies connected with distribution and sale of products, pricing, promotion, and buyer motivation. Examines variations of the marketing mix and market research, plus legal, social ethical and international considerations in marketing. Lecture 3 hours per week.

MKT 110 Principles of Selling (3 CR) Presents fundamental aspects of personal selling, sales, and selling methods. Emphasizes professional sales techniques and ethics. Examines organization necessary for a well coordinated sales effort, including the training of sales personnel for maximum efficiency in selling and organization of the sales division within the business enterprise. Introduces sales management in planning, organizing, directing, and controlling the total sales effort. Lecture 3 hours per week.

MKT 220 Principles of Advertising (3 CR) Emphasizes the role of advertising in marketing goods, services and ideas. Discusses the different uses of advertising; types of media; how advertising is created; agency functions; and legal, social, and economic aspects of the industry. Lecture 3 hours per week.

MKT 275 International Marketing (3 CR) Examines the role of the multinational firm, as well as the environments in which they operate. Covers such factors as exchange rates, government foreign trade policy, and social cultural factors. Compares international and domestic marketing strategies. Lecture 3 hours per week.

MKT 276 International Marketing Management (3 CR) Presents the process of

marketing and management and applies it to the marketing of products within the global marketplace. Introduces the student to activities involving the gathering and analyzing of information in the development and implementation of an international marketing plan. Lecture 3 hours per week.

MTH - Mathematics

MTH 3 Algebra I (4 CR) Prerequisites: Arithmetic or equivalent and a placement recommendation for MTH 3. Covers the topics of Algebra I including real numbers, equations and equalities, exponents, polynomials, Cartesian coordinate system, rational expressions, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 4 hours per week.

MTH 4 Algebra II (4 CR) Prerequisites: Algebra I or equivalent and a placement recommendation for MTH 4. Expands upon the topics of Algebra I including rational expressions, radicals and exponents, quadratic equations, systems of equations, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 4 hours per week.

MTH 5 - Algebra Revisited (4 CR) Prerequisites: a placement recommendation for MTH 5 and Algebra I and Algebra II or equivalent. Reviews topics in Algebra II necessary for entry into occupational/ technical or transfer mathematics courses. Credits not applicable toward graduation. Lecture 4 hours per week.

MTH 9 Pre-Algebra (3 CR) Prerequisite: Placement recommendation for MTH 9. Provides a transition between arithmetic and Algebra. Includes arithmetic, order of operations, rational numbers, and simple equation applications. Develops the mathematical proficiency necessary for curriculum entrance. Credits not applicable toward graduation. Lecture 3 hours per week.

MTH 115-116 Technical Mathematics I-II (3 CR, 3 CR) Prerequisites: a placement recommendation for MTH 115 or Algebra I, Algebra II, and Geometry or Trigonometry or equivalent. Presents Algebra through exponential and logarithmic functions, Trigonometry, vectors, analytic Geometry, and complex numbers. Lecture 3 hours per week.

MTH 120 Introduction to Mathematics (3 CR) Prerequisites: Algebra I or equivalent and a placement recommendation for MTH 120. Introduces number systems, logic, basic Algebra, and descriptive statistics. Intended for occupational/technical programs. Lecture 3 hours per week.

MTH 141 Business Mathematics I (3 CR) Prerequisite: Students who do not place above Pre-Algebra (MTH 9) and into Algebra I (MTH 3) or higher on the placement test will be required to take developmental courses. Provides instruction, review, and drill in percentage, cash and trade discounts, mark-up, payroll, sales, property and other taxes, simple and compound interest, bank discounts, loans, investments, and annuities. Lecture 3 hours per week.

MTH 151 Mathematics for the Liberal Arts I (3 CR) Prerequisites: Algebra I, Algebra II and Geometry or equivalent and a placement recommendation for MTH 151. Presents topics in sets, logic, numeration systems, geometric systems, and elementary computer concepts. Lecture 3 hours per week.

MTH 152 Mathematics for the Liberal Arts II (3 CR) Prerequisites: Algebra I, Algebra II and Geometry or equivalent and a placement recommendation for MTH 152. Presents topics in functions, combinatorics, probability, statistics and Algebraic systems. Lecture 3 hours per week.

MTH 157 Elementary Statistics (3 CR) Prerequisites: Algebra I, Geometry, and Algebra II. Presents elementary statistical methods and concepts including descriptive statistics, estimation, hypothesis testing, linear regression, and categorical data analysis. Credit will not be awarded for both MTH 157 and MTH 241. Lecture 3 hours per week.

MTH 163 Pre-Calculus I (3 CR) Prerequisites: Algebra I, Algebra II, and Geometry or equivalent and a placement recommendation for MTH 163. Presents college Algebra, matrices, and Algebraic, exponential, and logarithmic functions. Credit will not be awarded for both MTH 163 and 166. Lecture 3 hours per week.

MTH 166 Pre-Calculus with Trigonometry (5 CR) Prerequisites: Algebra I, Algebra II, and Geometry or equivalent and a placement recommendation for MTH 166. Presents college Algebra, analytic Geometry, Trigonometry, and Algebraic, exponential, and logarithmic functions. Credit will not be awarded for both MTH 163 and MTH 166. Lecture 5 hours per week.

MTH 175 Calculus of One Variable I (3 CR) Prerequisites: four units of high school mathematics including Algebra I, Algebra II, Geometry and Trigonometry or equivalent and a placement

recommendation for MTH 175. Presents differential calculus of one variable including the theory of limits, derivatives, differentials, antiderivatives and applications to Algebraic and transcendental functions. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 176 Calculus of One Variable II (3 CR) Prerequisites: MTH 175 or equivalent. Continues the study of integral calculus of one variable including indefinite integral, definite integral and methods of integration with applications to Algebraic and transcendental functions. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 177 Introductory Linear Algebra (2 CR) Co-requisite: MTH 175 or equivalent. Covers matrices, vector spaces, determinants, solutions of systems of linear equations, and eigen values. Designed for mathematical, physical, and engineering science programs. Lecture 2 hours per week.

MTH 178 Topics in Analytic Geometry (2 CR) Co-requisite: MTH 176 or equivalent. Covers conic sections, polar and parametric graphing. Designed for mathematical, physical, and engineering science programs. Lecture 2 hours per week.

MTH 241 Statistics I (3 CR) Prerequisites: MTH 163 or MTH 166 or equivalent. Covers descriptive statistics, elementary probability, probability distributions, estimation, and hypothesis testing. Uses a computer package to solve case studies. Lecture 3 hours per week.

MTH 242 Statistics II (3 CR) Prerequisites: MTH 241 or equivalent. Continues the study of estimation and hypothesis testing with emphasis on correlation and regression, analysis of variance, chi-square test, and non-parametric methods. Presents linear programming, network theory, project scheduling, and other quantitative applications. Uses a computer package to solve case studies. Lecture 3 hours per week.

MTH 271 Applied Calculus I (3 CR) Prerequisite: MTH 163 or MTH 166 or equivalent. Presents limits, continuity, differentiation of Algebraic and transcendental functions with applications, and an introduction to integration. Lecture 3 hours per week.

MTH 272 Applied Calculus II (3 CR) Prerequisites: MTH 271 or equivalent. Covers techniques of integration, multivariable calculus, and an introduction to differential equations. Lecture 3 hours per week.

MTH 277 Vector Calculus (4 CR) Prerequisite: MTH 176, MTH 177, MTH 178 or equivalent. Presents vector valued functions, partial derivatives, multiple integrals, infinite series, and topics from the calculus of vectors. Designed for mathematical, physical, and engineering science programs. Lecture 4 hours per week.

MTH 285 Linear Algebra (3 CR) Prerequisite: MTH 176 or equivalent. Covers matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigen values, and eigen vectors. Designed for mathematical, physical and engineering science programs. Lecture 3 hours per week.

MTH 287 Mathematical Structures (3 CR) Co-requisite: MTH 176 or equivalent. Presents topics in mathematical Structures of value to students majoring in Computer Science or other disciplines requiring programming skills. Covers logic, set theory, number theory, combinatorics, functions, relations, and graph theory. Lecture 3 hours per week.

MTH 291 Differential Equation (3 CR) Co-requisite: MTH 277 or equivalent. Introduces first order differential equations, linear differential equations, numerical methods, and applications. Designed for mathematical, physical, and engineering science programs. Lecture 3 hour per week.

MUS – Music

MUS 121-122 Music Appreciation I-II (3 CR, 3 CR) Increases the variety and depth of the student's interest, knowledge, involvement in music and related cultural activities. Acquaints student with traditional and twentieth century music literature, emphasizing the relationship music has as an art form with man and society. Increases the student's awareness of the composers and performers of all eras through listening and concert experiences. Lecture 3 hours per week.

MUS 130 Overview of the Recording Industry (1 CR) Introduces and surveys employment opportunities in the commercial music industry. Assists students in defining their professional goals. Prerequisite divisional approval. Lecture 1 hour per week.

MUS 140 Introduction to Recording Techniques (3 CR) Introduces the theory and practice of basic magnetic and multichannel recording. Presents the concepts of recording electronics, equipment nomenclature, function, application, and interface, microphone application, and mixdown

techniques. Provides basic hands-on experience in the recording studio. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 163-164 Guitar Theory and Practice I-II (3 CR, 3 CR) Prerequisite for MUS 164: MUS 163 or divisional approval. Studies the fundamentals of sound production, music theory, and harmony as they apply to guitar. Builds proficiency in both the techniques of playing the guitar and in the application of music fundamentals to these techniques. Presents different types of guitars and related instruments. Emphasizes music as entertainment and as a communication skill. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MUS 225 - The History of Jazz (3 CR) Studies the underlying elements of jazz, concentrating on its cultural and historical development from earliest stages to the present. No previous knowledge of music is required. Lecture 3 hours per week.

NAS – Natural Science

NAS 131-132 - Astronomy I-II (4 CR) Prerequisite: A placement recommendation for ENG 111 or succesful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG 7). Studies the major and minor bodies of the solar system, stars and nebulae of the milky way, and extragalactic objects. Examines life and death of stars, origin of the universe, history of astronomy, and instruments and techniques of observation. Part I of II. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week.

NAS 171 Human Anatomy and Physiology I (4 CR) Presents the human organ systems and their functions as they relate to allied health science. Emphasizes systems of importance to Radiography. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

NAS 185 Microbiology (4 CR) Prerequisite: recent high school biology or BIO 101. Surveys microorganisms, presenting their characteristics and activities as related to health and disease. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

NUR – Nursing

NUR 115 LPN Transition (7 CR) Introduces the role of the registered nurse through concepts and skill development in the discipline of professional nursing. This course serves as a bridge course for licensed practical nurses and is based upon individualized articulation agreements, mobility exams, or other assessment criteria as they related to local programs and service areas. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Lecture 6 hours. Laboratory 3 hours. Total 9 hours per week.

NUR 121 Nursing Fundamentals I (10 CR) Prerequisite: BIO 141 and BIO 142. Introduces the nursing process as a framework to meet the biopsychosocial needs of individuals/families throughout the lifespan. Focuses on development of basic nursing skills. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 7 hours. Laboratory 9 hours. Total 16 hours per week.

NUR 122 Nursing Fundamentals II (10 CR) Prerequisite: NUR 121 and NUR 135. Co-requisites: BIO 142, NAS 185. Utilizes the nursing process to meet the biopsychosocial needs of individuals/families experiencing prevalent variations in health throughout the lifespan. Focuses on introducing basic concepts and needs and continued development of nursing skills. Includes math computational skills, basic computer instruction related to the delivery of nursing care; oxygenation, neurological, endocrine, safety, sensory, rest, sleep, activity, self-esteem, respiratory, cardiovascular, gastrointestinal and musculoskeletal needs; and the care of clients with dementia. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 6 hours. Laboratory 12 hours. Total 18 hours per week.

NUR 135 Drug Dosage Calculations (2 CR) Teaches apothecary, metric, household conversion; reading of drug orders and labels. Provides a practical approach to learning to prepare dosages and solutions, including calculating intravenous flow rates and pediatric drugs. Lecture 2 hours per week.

NUR 238 Integrated Nursing Principles I (10 CR) Prerequisites: NUR 115 or NUR 122. Focuses on acute nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Content includes: parenteral dosage computational skills, computer instruction related to delivery of nursing care; professional issues; complex nursing care related

to alteration in oxygenation, nutrition, elimination, regulation and love and belonging (children and the child bearing family). Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 6 hours. Laboratory 12 hours. Total 18 hours per week.

NUR 239 Integrated Nursing Principles II (10 CR) Prerequisite: NUR 238. Focuses on chronic nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Content includes: professional managerial issues; complex nursing care related to oxygenation, nutrition, elimination, regulations, rest, sleep, activity and love and belonging (self-esteem, psychiatric disorders). Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 6 hours. Laboratory 12 hours. Total 18 hours per week.

NUR 290 Coordinated Practice (1 CR) Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Clinical 3 hours per week.

PED – Physical Education and Recreation

PED 100 Pilates (1 CR) Provides a method of mind-body exercise and physical movement designed to stretch, strengthen, balance the body, and improve posture and core stabilization while increasing body awareness. 2 hours per week.

PED 101-102 Fundamentals of Physical Activity I-II (1 CR, 1 CR) Presents principles underlying the components of physical fitness. Utilizes conditioning activities involving cardiovascular strength and endurance, respiratory efficiency, muscular strength, and flexibility. May include fitness assessment, nutrition and weight control information, and concepts of wellness. 2 hours per week.

PED 103-104 Aerobic Fitness I-II (1 CR, 1 CR) Develops cardiovascular fitness though activities designed to elevate and sustain heart rates appropriate to age and physical condition. 2 hours per week.

PED 105-106 Aerobic Dance I-II (1 CR, 1 CR) Focuses on physical fitness through dance exercises. Emphasizes the development of cardiovascular endurance, muscular endurance, and flexibility. 2 hours per week.

PED 107 Exercise and Nutrition (2 CR) Provides the student with a full body workout through flexibility, strength, and cardiovascular endurance exercises. Includes fitness evaluation, nutrition analysis, and weight control. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 109 Yoga (1 CR) Focuses on the forms of yoga training emphasizing flexibility. 2 hours per week.

PED 111-112 Weight Training I-II (1 CR, 1 CR) Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. 2 hours per week.

PED 116 - Lifetime Fitness and Wellness (1-2 CR) Provides a study of fitness and wellness and their relationship to a healthy lifestyle. Defines fitness and wellness, evaluates the student's level of fitness and wellness, and motivates the student to incorporate physical fitness and wellness into daily living. A personal fitness/wellness plan is required for the 2-credit course. Lecture 0-1 hours. Laboratory 2-4 hours. Total 2-4 hours per week.

PED 120 - Yoga II (1 CR) Prerequisite: PED 109. Focuses on the forms of yoga training emphasizing flexibility. 2 hours per week.

PED 123-124 Tennis I-II (1 CR, 1 CR) Teaches tennis skills with emphasis on stroke development and strategies for individual and team play. Includes rules, scoring, terminology, and etiquette. 2 hours per week.

PED 129 Self-Defense (1 CR) Examines history, techniques, and movements associated with self-defense. Introduces the skills and methods of self-defense emphasizing mental and physical discipline. 2 hours per week.

PED 133-134 Golf I-II (1 CR, 1 CR) Teaches basic skills of golf, rules, etiquette, scoring, terminology, equipment selection and use, and strategy. 2 hours per week.

PED 135-136 Bowling I-II (2 CR, 2 CR) Teaches basic bowling skills and techniques, scoring, rules, etiquette, and terminology. 3 hours per week.

PED 137-138 Martial Arts I-II (2 CR, 2 CR) Emphasizes forms, styles, and techniques of body control, physical and mental discipline, and physical fitness. Presents a brief history of development of martial arts theory and practice. 3 hours per week.

PED 144 - Skin and Scuba Diving (2 CR) Emphasizes skills and methods of skin and scuba diving. Includes training with underwater breathing apparatus and focuses on safety procedures, selection and use of equipment. Prerequisite strong swimming skills. Lecture 1 hours. Laboratory 2 hours. Total 3 hours per week.

PED 147 Hiking (1 CR) Introduces physical and mental benefits of walking or hiking as a form of physical exercise. Skills developed include how to plan for a hike, what to take, and how to select a trail relative to individual abilities. Provides hiking opportunities to explore local regions. Develops awareness of safety, weather, and ecological considerations. 2 hours per week.

PED 149 Cardio Sculpt I (1 CR) Combines strength training and cardiovascular workouts that strengthen the major muscle groups as well as developing endurance. 2 hours per week.

PED 152 Basketball (1 CR) Introduces basketball skills, techniques, rules, and strategies. 2 hours per week.

PED 154 Volleyball (1-2 CR) Introduces skills, techniques, strategies, rules, and scoring. Variable hours per week.

PED 170 Tai Chi I (1 CR) Develops an understanding of the theories and practices of Tai Chi. Explores the energy of exercise that will tone muscles, improve circulation and increase flexibility and balance. Discusses history and philosophy of exercise and relaxation techniques for stress reduction. 2 hours per week.

PED 174 - Shooting and Firearm Safety (1 CR) Teaches the basic techniques of shooting and firearm safety for both hunting and sport shooting. Emphasizes the selection and care of equipment, proper shooting forms, personal safety. 2 hours per week.

PED 183 - Outdoor Adventures I (1 CR) Introduces outdoor adventure activities with emphasis on basic skills, preparation, personal and group safety, equipment selection and use, ecology, and field experience. Part I of II. 2 hours per week.

PED 188 Freshwater Fishing (1 CR) Teaches freshwater fishing techniques including spinning, bait casting and fly casting. Presents selection and care of equipment, fish habits, conservation, and safety. 2 hours per week.

PED 249 Cardio Sculpt II (1 CR) Combines strength training and cardiovascular workouts that strengthen the major muscle groups as well as developing endurance. 2 hours per week.

PED 270 Tai Chi II (1 CR) Develops and understanding of the theories and practices of Tai Chi. Explores the energy of exercise that will tone muscles, improve circulation and increase flexibility and balance. Discusses history and philosophy of exercise and relaxation techniques for stress reduction. 2 hours per week.

PHI – Philosophy

PHI 101-102 Introduction to Philosophy I-II (3 CR, 3 CR) Introduces a broad spectrum of philosophical problems and perspectives with an emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality, and values. Lecture 3 hours per week.

PHI 111 Logic I (3 CR) Introduces inductive and deductive reasoning, with an emphasis on common errors and fallacies. Lecture 3 hours per week.

PHT - Photography

PHT 101-102 Photography I-II (3 CR) Prerequisite for PHT 102: PHT 101. Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Lecture 1 hour. Laboratory 4 hour. Total 5 hours per week.

PHT 135 Electronic Darkroom (3 CR) Teaches students to create and manipulate digital photographs. Covers masking, color corrections, and merging of illustrations with photographs. Examines the ethical and property-rights issues which are raised in the manipulation of images. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHT 164 Introduction to Digital Photography (3 CR) Teaches the fundamentals of photography including camera function, composition, and image production as they apply to digital imagery. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHT 264 Digital Photography (3 CR) Prerequisite: PHT 164 or divisional approval. Teaches theory and practice of digital photography. Emphasizes use of digital cameras in studio and on location. Teaches advanced techniques of image editing. Provides training in digital image transmission from remote locations. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHY – Physics

PHY 201-202 General College Physics I-II (4 CR, 4 CR) Prerequisites: MTH 115 or MTH 163 or MTH 166 recommended or equivalent and a placement recommendation for ENG 111 or succesful completion of all required developmental English courses (ENG 1, ENG 3, ENG 4, ENG 7). A non-calculus introductory college physics sequence. Includes fundamental principles of physics. Covers mechanics thermodynamics, wave phenomena, electricity, magnetism, and selected topics in modern physics. Lecture 3 hours Laboratory 3 hours. Total 6 hours per week.

PHY 241-242 University Physics I-II (4 CR, 4 CR) Prerequisite: MTH 176 and MTH 178 or one year of college calculus. An introductory calculus-based physics sequence recommended for engineering, physics, computer science, and mathematics majors. Teaches principles of classical and modern physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, relativity and nuclear physics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PLS – Political Science

PLS 211-212 U.S. Government I-II (3 CR, 3 CR) Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Lecture 3 hours per week.

PLS 225 - The United States Presidency (3 CR) Describes the modern American presidency. Focuses on the presidency and many issues related to that office; the people, the powers, and the current environment in which the presidents serve. Lecture 3 hours per week.

PLS 241 International Relations I (3 CR) Teaches geographic, demographic, economic, ideological, and other factors conditioning the policies of countries and discusses conflicts and their adjustment. Lecture 3 hours per week.

PLS 242 International Relations II (3 CR) Teaches foreign policies of the major powers in the world community with an emphasis on the role of the United States in international politics. Lecture 3 hours per week.

PNE - Practical Nursing

PNE 110-111 Practical Nursing Health and Disease I-II (5 CR, 5 CR) Studies the pathophysiology, signs and symptoms, prescribed medical and surgical treatments, and appropriate nursing care for the patient with selected disorders. Lecture 5 hours per week.

PNE 120 Introduction to Nursing Process (1 CR) Introduces the nursing process. Develops basic skills to ensure quality nursing care. Lecture 1 hour per week.

PNE 135 Maternal and Child Health Nursing (5 CR) Examines pregnancy, childbirth, postpartum and newborn care from a family centered approach. Covers complications related to childbearing. Emphasizes growth and development and exploration of common childhood disorders at various ages. Lecture 4 hours. Laboratory 3 hours. Total 7 hours per week.

PNE 141-142 Nursing Skills I-II (3 CR, 3 CR) Studies principles and procedures essential to the basic nursing care of patients. Lecture 1-2 hours. Laboratory 3-6 hours. Total 4-8 hours per week.

PNE 145 Trends in Practical Nursing (1 CR) Studies the role of the Licensed Practical Nurse. Covers legal aspects, organizations, and opportunities in practical nursing. Designed to assist the student in preparation for employment. Lecture I hour per week.

PNE 155 Body Structure and Function (4 CR) Studies the structure and function of the body. Lecture 4 hours per week.

PNE 156 Nursing Across the Life Span (4 CR) Focuses on the principles of nursing relevant to assisting the individual during the growth and development process across the life span. Lecture 4 hours per week.

PNE 158 Mental Health and Psychiatric Nursing (2 CR) Recognizes emotional needs of patients. Provides knowledge of the role that emotions play. Enables students to understand their own behavior as well as patient behavior. Lecture 2 hours per week.

PNE 174 Applied Pharmacology for Practical Nurses (2 CR) Applies problem solving skills in preparing and administering medications. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

PNE 181-182 Clinical Experience I-II (5 CR, 5 CR) Provides guided nursing experiences in the hospital setting. Practices skills and applies principles of nursing in basic areas. Includes supervision in administration of medicines. Encourages students to develop basic

skills in analyzing patient needs and making nursing decisions. Laboratory 15 hours per week.

PSY – Psychology

PSY 120 Human Relations (3 CR) Introduces the theory and practice of effective human relations. Increases understanding of self and others and interpersonal skills needed to be a competent and cooperative communicator. Lecture 3 hours per week.

PSY 200 Principles of Psychology (3 CR) Surveys the basic concepts of psychology. Covers the scientific study of behavior, behavioral research methods and analysis, and theoretical interpretations. Includes topics that cover physiological mechanisms, sensation/perception, motivation, learning, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week.

PSY 215 Abnormal Psychology (3 CR) Explores historical views and current perspectives of abnormal behavior. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior, and types of therapy. Includes methods of clinical assessment and research strategies. Lecture 3 hours per week.

PSY 216 Social Psychology (3 CR) Prerequisites: PSY 200, 201, or 202. Examines individuals in social contexts, their social roles, group processes and intergroup relations. Includes topics such as small group behavior, social behavior, social cognition, conformity, attitudes, and motivation. Lecture 3 hours per week.

PSY 220 Introduction to Behavior Modification (3 CR) Studies the history of behaviorism and the principles and applications of behavior modification. Emphasizes observation and application of behavior modification principles. Lecture 3 hours per week.

PSY 225 Theories of Personality (3 CR) Prerequisites: PSY 200, 201 or 202. Studies the major personality theories and their applications. Includes psychodynamic, behavioral, cognitive, and humanistic perspectives. Lecture 3 hours per week.

PSY 230 Developmental Psychology (3 CR) Studies the development of the individual from conception to death. Follows a life-span perspective on the development of the person's physical, cognitive, and psychosocial growth. Lecture 3 hours per week.

PSY 235 Child Psychology (3 CR) Studies development of the child from conception to adolescence. Investigates physical, intellectual, social and emotional factors involved in the child's growth. Lecture 3 hours per week.

PSY 236 Adolescent Psychology (3 CR) Studies development of the adolescent. Investigates physical, intellectual, social, and emotional factors of the individual from late childhood to early adulthood. Lecture 3 hours per week.

RAD – Radiography

RAD 106 Introduction to Radiologic Science (2 CR) Presents an overview of radiographic imaging techniques, basic equipment, and elements of film processing. Basic technical factors of image production and radiographic quality are stressed. Lecture 2 hours per week.

RAD 111-112 Radiologic Science I-II (4 CR, 4 CR) Teaches concepts of radiation, radiography physics, fundamentals of electromagnetic radiation, electricity and magnetism, and application of these principles to radiography. Focuses on X-ray production, emission, and X-ray interaction with matter. Develops skills in analysis, quantification and synthesis, and applies problem-solving strategies. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 121 Radiographic Procedures I (4 CR) Introduces procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 125 Patient Care Procedures (2-3 CR) Presents the care and handling of the sick and injured patient in the Radiology Department. Introduces the fundamentals of nursing procedures, equipment, and supplies specific to radiology. Lecture 2-3 hours per week.

RAD 131-132 Elementary Clinical Procedures I-II (3 CR, 3 CR) Develops technical skills in fundamental radiographic procedures. Focuses on introduction to radiography, basic radiation safety, manipulation of equipment, patient care, osseous studies, and some contrast studies. Provides clinical experience in cooperating health agencies. Clinical 15 hours per week.

RAD 190 Coordinated Practice (3 CR) Prerequisite: RAD 132. Introduces advanced technical skills in fundamental radiographic procedures. Focuses on basic contrast media studies, osseous studies, and skull procedures. Provides clinical experiences in health care agencies. Clinical 16 hours per week.

RAD 205 Radiation Protection and Radiobiology (3 CR) Studies methods and devices used for protection from ionizing radiation. Teaches theories of biological effects, cell and organism sensitivity, and the somatic and genetic effects of ionizing radiation. Presents current radiation protection philosophy for protecting the patient and technologist. Lecture 3 hours per week.

RAD 215 Correlated Radiographic Theory (2 CR) Presents intensive correlation of all major radiologic technology subject areas. Studies interrelationships of biology, physics, principles of exposure, radiologic procedures, patient care, and radiation protection. Lecture 2 hours per week.

RAD 221 Radiographic Procedures II (4 CR) Prerequisite: RAD 121. Continues procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 231-232 Advanced Clinical Procedures I-II (5 CR, 5 CR) Reinforces technical skills in fundamental radiographic procedures. Introduces more intricate contrast media procedures. Focuses on technical proficiency, application of radiation, protection, nursing skills, and exposure principles. Teaches advanced technical procedures and principles of imaging modalities, correlating previous radiographic theory, focusing on full responsibility for patients in technical areas, perfecting technical skills, and developing awareness of related areas utilizing ionizing radiation. Provides clinical experience in cooperating health agencies. Clinical 26 hours per week.

RAD 240 Radiographic Pathology (3 CR) Presents a survey of common medical and surgical disorders that affect radiographic image. Discusses conditions related to different systems of the human body. Studies the correlation of these conditions with radiographs. Lecture 3 hours per week.

RAD 290 Coordinated Internship (4 CR) Prerequisite: RAD 232. Provides additional experience in radiographic procedures, demonstrating skills in technical proficiency, patient care procedures, radiation protection, and evaluation of experience in cooperating health agencies. Clinical 21 hours per week.

REA – Real Estate

REA 100 Principles of Real Estate (4 CR) Examines practical applications of real estate principles. Includes a study of titles, estates, land descriptions, contracts, legal instruments and concepts, real estate mathematics, financing, agency, appraisal, fair housing, and management of real estate. Lecture 4 hours per week.

REL – Religion

REL 200 Survey of the Old Testament (3 CR) Surveys books of the Old Testament, with emphasis on prophetic historical books. Examines the historical and geographical setting and place of the Israelites in the ancient Middle East as background to the writings. Lecture 3 hours per week.

REL 210 Survey of the New Testament (3 CR) Surveys the New Testament, with special attention placing the writings within their historical and geographical setting. Lecture 3 hours per week.

REL 230 Religions of the World (3 CR) Introduces the religions of the world with attention to origin, history, and doctrine. Lecture 3 hours per week.

REL 231-232 Religions of the World I-II (3 CR) Studies religions of the world with attention to origin, history, and doctrine. Lecture 3 hours per week.

REL 237 - Eastern Religions (3 CR) Studies major religious traditions of the East including Hinduism, Buddhism, Confuscianism, Taoism, and Zen Buddhism. Includes an analysis of Eastern philosophy and approach to life. Lecture 3 hours per week.

REL 247 History of Christianity (3 CR) Surveys the development of Christianity from its origins to the present. Lecture 3 hours per week.

ROC – Radiation Oncology

ROC 110 Introduction to Radiation Oncology (2 CR) Presents an overview of the field of Radiation Oncology, focusing on medical and technical terminology, practices and procedures, treatment

charts, roles of staff, clinical objectives, treatment modalities, and equipment. Other topics include patient care, psychosocial issues, ethics and legal considerations of patient management. Lecture 2 hours per week.

ROC 120 Radiation Oncology/Pathology I (3 CR) Introduces malignant pathology arising in each anatomical site, radiation treatment rationale, treatment techniques, and radiobiological response. Lecture 3 hours per week.

ROC 121 Radiation Oncology/Pathology II (3 CR) Prerequisites: ROC 110, ROC 120. A continuation of Radiation Oncology I, which focuses on malignant pathology arising in each anatomical site, radiation rationale, treatment techniques, and radiobiological response. Lecture 3 hours per week.

ROC 125 Pre-Clinical Techniques in Radiation Oncology (2 CR) Focuses on basic technical skills in preparation for patient set up and treatment in the clinical setting. Emphasizes simulation and treatment parameters. Focuses on students gaining basic understanding of basic techniques and patient care skills through phantom and lab work prior to direct patient contact. Lecture 2 hours per week.

ROC 131 Clinical Clerkship I (4 CR) The student is introduced to the clinical setting and the basics of Radiation Oncology. The student gains experience in basic technical and patient care skills through supervised direct patient contact and phantom work. Lecture 1 hour. Laboratory 15 hours. Total 16 hours per week.

ROC 132 Clinical Clerkship II (5 CR) Prerequisite: ROC 131. The student continues supervised direct patient contact and phantom work with focus on technical skills related to equipment manipulation. With minimal assistance the student should be able to perform basic treatment and simulation procedures as well as basic patient care skills. Clinical 25 hours per week.

ROC 141 Therapy Physics I (2 CR) Prerequisites: ROC 110, MTH 163. Focuses on concepts of radiation production, interaction, and influencing factors. Emphasis is placed on atomic interactions and dose measurement techniques. Presents a comprehensive overview of the different types of machines used in Radiation Oncology. Lecture 2 hours per week.

ROC 142 Patient Care in Oncology (1 CR) Focuses on the unique needs of the cancer patient, including: site specific side effects, pharmacology, skin care, psychological and nutritional support, and patient care in emergency situations. The use of chemotherapeutic agents will also be explored. Lecture 1 hour per week.

ROC 145 Quality Improvement (2 CR) Prerequisite: ROC 110. Methods for performing various quality assurance tasks will be discussed, including the medical record component, as well as standards and specification of therapeutic equipment. The student will acquire the knowledge and ability to recognize inaccuracy of treatment delivery. Warm up guidelines will be reviewed. Lecture 2 hours per week.

ROC 151 Introduction to Cross-Sectional Anatomy (2 CR) Prerequisites: ROC 120, ROC 121. Introduces the study of basic anatomic structures and pathologies through digital concepts of medical imaging with emphasis on principles and practices of Radiation Oncology and diagnostic radiography. Lecture 2 hours per week.

ROC 225 Emerging Technologies in Radiation Oncology (1 CR) Co-requisite: ROC 232. Focuses on new and advanced techniques in Radiation Oncology. Emphasizes emerging procedures in simulation and treatment relative to tumor site and modality. Lecture 1 hour per week.

ROC 231 Clinical Clerkship III (5 CR) Prerequisite: ROC 132. A continuation of Clinical Clerkship II, the student will be introduced to intermediate and complex treatment and simulation procedures as well as dosimetry, beam modification devices and brachytherapy competencies. The student should demonstrate proficiency in equipment manipulation and intermediate patient care skills. Clinical 26 hours per week.

ROC 232 Clinical Clerkship IV (5 CR) Prerequisite: ROC 231. The student performs intermediate procedures with minimal assistance and demonstrates comprehension of tasks related to complex procedures. During this clerkship the student should demonstrate the ability to work more independently. Clinical 26 hours per week.

ROC 241 Therapy Physics II (2 CR) Prerequisite: ROC 141. Studies methods and devices used for measurement of and protection from ionizing radiation. Various types of brachytherapy applicators and dose distributions systems will be discussed and include brachytherapy dose calculation exercises.

Electron beam dosimetry will be introduced. Lecture 2 hours per week.

ROC 242 Clinical Radiobiology (2 CR) Prerequisites: ROC 110, ROC 120, ROC 121. This course is an advance study into the principles of biologic responses to radiation. Focus will be on the events that occur following absorption of energy from radiation at the cellular, tissue, and systemic whole body levels, and factors that influence the effects. Lecture 2 hours per week.

ROC 243 Dosimetry Planning (2 CR) Prerequisites: ROC 110, MTH 163. Introduces clinical dosimetry and treatment planning to include various treatment techniques, calculations, equations, and beam arrangements. Lecture 2 hours per week.

ROC 244 Professional Seminar (2 CR) Prerequisites/Co-requisites: All Radiation Oncology Core Courses. Designed to correlate all major radiation oncology subject areas in preparation for national certification. Lecture 2 hours per week.

SAF – Safety

SAF 127 Industrial Safety (2 CR) Provides basic understanding of safety and health in an industrial situation. Includes hazardous materials, substances, conditions, activities and habits as well as the prescribed methods and equipment needed for the apprentice to protect himself/herself and others. Class attendance and completion of this course satisfies the 10-hour requirement to sit for the OSHA certification exam. Lecture 2 hours per week.

SDV – Student Development

SDV 100 College Success Skills (1 CR) Assists students in transition to college. Provides overviews of college policies, procedures, and curricular offerings. Encourages contacts with other students and staff. Assists students toward college success through information regarding effective study habits, career and academic planning, and other college resources available to students. May include English and math placement testing. Strongly recommended for beginning students. Required for graduation. Lecture 1 hour per week.

SDV 101 Orientation to *(Specify Discipline)* (1 CR) Introduces students to the skills necessary to achieve their academic goals, services offered at the College, to the discipline in which they are enrolled, and to topics for students on academic probation. Covers topics such as services offered at the College including the learning resources center; counseling, and advising; listening, test taking, and study skills; and topical areas which are applicable to their particular discipline. Lecture 1 hour per week.

SDV 104 Study Skills (1–3 CR) Assists students in planning strategies to overcome nonproductive study habits and in implementing positive study behaviors. Includes management, memory improvement, notetaking, and test-taking. Lecture 1-3 hours per week.

SDV 106 Preparation for Employment (1 CR) Provides experience in resume writing, preparation of applications, letters of application, and successfully preparing for and completing the job interview. Assists students in identifying their marketable skills and aptitudes. Develops strategies for successful employment search. Assists students in understanding effective human relations techniques and communication skills in job search. Lecture 1 hour per week.

SDV 107 Career Education (1 CR) Surveys career options available to students. Stresses career development and assists in the understanding of self in the world of work. Assists students in applying decision making to career choice. May be substituted for SDV 100. Lecture 1 hour per week.

SDV 108 College Survival Skills (1 CR) Provides an orientation to the College. Introduces study skills, career and life planning. Offers an opportunity to engage in activities aimed at self-discovery. Emphasizes development of "coping skills" such as listening, interpersonal relations, competence, and improved self- concept. Recommended for students enrolled in developmental courses. Lecture 1 hour per week.

SOC – Sociology

SOC 200 Principles of Sociology (3 CR) Introduces fundamentals of social life. Presents significant research and theory in areas such as culture, social structure, socialization, deviance, social stratification, and social institutions. Lecture 3 hours per week.

SOC 215 Sociology of the Family (3 CR) Studies topics such as marriage and family in social and cultural context. Addresses the single scene, dating and marriage styles, child-rearing, husband and wife interaction, single parent families, and alternative lifestyles. Lecture 3 hours per week.

SOC 266 Minority Group Relations (3 CR) Investigates minorities such as racial and ethnic groups. Addresses social and economic conditions promoting prejudice, racism, discrimination, and segregation. Lecture 3 hours per week.

SOC 268 Social Problems (3 CR) Applies sociological concepts and methods to analysis of current social problems. Includes delinquency and crime, mental illness, drug addiction, alcoholism, sexual behavior, population crisis, race relations, family and community disorganization, poverty, automation, wars, and disarmament. Lecture 3 hours per week.

SPA – Spanish

SPA 101-102 Beginning Spanish I-II (4 CR, 4 CR) Prerequisite for SPA 102: SPA 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. Lecture 4 hours per week.

SPA 103-104 Basic Spoken Spanish I-II (3 CR) (3 CR.) Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

SPA 201-202 Intermediate Spanish I-II (3 CR, 3 CR) Prerequisites: For SPA 201, prerequisite is SPA 102. for SPA 202: SPA 201. Continues to develop understanding, speaking, reading, and writing skills. May include oral drill and practice. Lecture 3 hours per week.

TEL – Telecommunications

TEL 150 Internetworking I (4 CR) Network Fundamentals introduces the functions of each layer of the ISO/OSI reference model, data link and network addresses, data encapsulation, different classes of IP addresses and subnetting and the functions of the TCP/IP network-layer protocols. This course is part of the Cisco Networking AcademyTM, and all changes are in keeping with the requirements of Cisco. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

TEL 151 Internetworking II (4 CR) Prerequisite: TEL 150. Routing Protocols and Concepts teaches features of the Cisco IOS software, including log in, context-sensitive help, command history and editing, loading software, configuring and verifying IP addresses, preparing the initial configuration of a router, and adding routing protocols to the router configuration. This course is part of the Cisco Networking AcademyTM, and all changes are in keeping with the requirements of Cisco. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

TEL 250 Internetworking III (4 CR) Prerequisite: TEL 150 or ITN 112 with instructor approval. LAN Switching and Wireless studies the advantages of LAN segmentation using bridges, routers, and switches, Fast Ethernet configuring access lists; Spanning Tree Protocol; and Virtual LANs. This course is part of the Cisco Networking AcademyTM, and all changes are in keeping with the requirements of Cisco. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

TEL 251 Internetworking IV (4 CR) Prerequisite: TEL 151 and TEL 250. Accessing the WAN focuses on the differences between the following WAN services: LAPB, Frame Relay, ISDN/LAP, HDLC, PPP, and DDR. This course is part of the Cisco Networking AcademyTM, and all changes are in keeping with the requirements of Cisco. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

VEN – Viticulture and Enology

VEN 100 - Introduction to Viticulture (3 CR) Introduces grapes, their history, distribution, classification, and areas of production. Provides an overview of grape uses and products made from them. Includes site selection and environmental factors that affect grapes and their quality. Lecture 3 hours per week.

VEN 110 - Vineyard Establishment (3 CR) Reviews sites, soils, and other factors that affect the planting of grapes. Covers vineyard designs, varieties, and the training of newly planted vines. Includes weed control and pest management of new vines. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

VEN 125 - Vineyard Management (3 CR) Studies the overall practices involved in vineyard management with emphasis on diseases and insects as they affect overall quality of grapes. Surveys grape harvest and grape maturity as it affects wine quality. Provides hands-on experience in the harvest process. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

WEL – Welding

WEL 116 Welding I (Oxyacetylene) (2 CR) Teaches oxygen/acetylene welding and cutting including safety of equipment, welding, brazing, and soldering procedures and cutting procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 120 Fundamentals of Welding (3 CR) Introduces history of welding processes. Covers types of equipment and assembly of units. Stresses welding

procedures such as fusion, non-fusion, and cutting oxyacetylene. Introduces arc welding. Emphasizes procedures in the use of tools and equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

WEL 121 ARC Welding (2 CR) Prerequisite: WEL 120 or departmental approval. Studies the operation of AC and DC power sources, weld heat, polarities and electrodes for use in joining various alloys by the SMAW process. Covers welds in different types of joints and different welding positions. Emphasizes safety procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

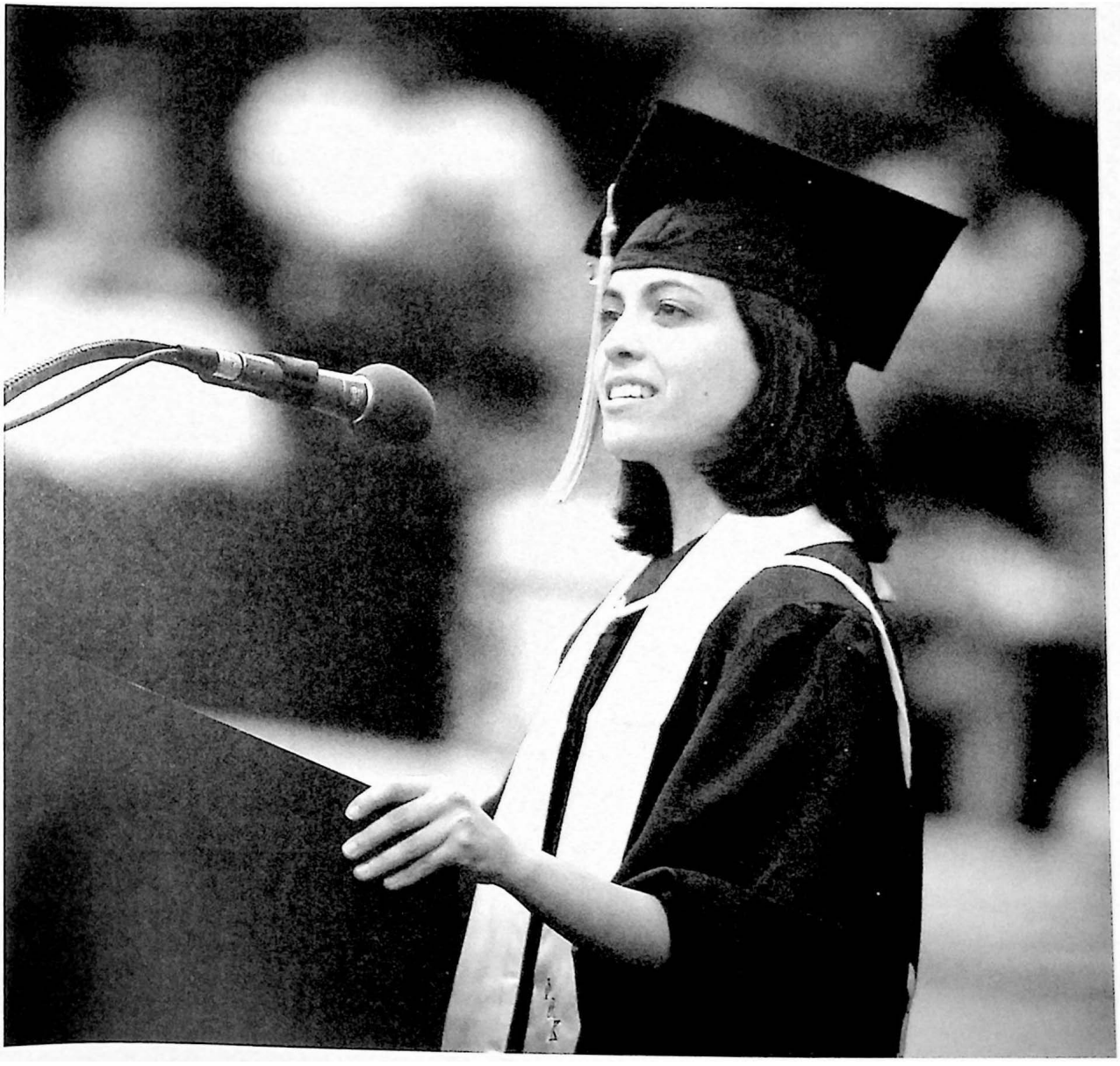
WEL 130 Inert Gas Welding (3 CR) Prerequisite: WEL 120 or departmental approval. Introduces practical operations in the uses of inert-gas-shield arc welding. Discusses equipment, safety operations, welding practice in the various positions, process applications, and manual and semi-automatic welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 135 Inert Gas Welding (2 CR) Prerequisite: WEL 120 or departmental approval. Introduces practical operations in use of inert gas shielded arc welding. Studies equipment operation, setup, safety, and practice of GMAW (MIG) and GTAW (TIG). Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 136 Welding III (Inert Gas) (2 CR) Studies Tungsten and metallic inert gas procedures and practices including principles of operation, shielding gasses, filler rods, process variations and applications, manual and automatic welding, equipment and safety. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 145 Welding Metallurgy (3 CR) Studies steel classifications, heat treatment procedures, properties of ferrous and non-ferrous metals. Discusses techniques and practices of testing welded joints and destructive/ nondestructive, visual magnetic, and fluorescent testing. Lecture 3 hours per week.

WEL 150 Welding Drawing and Interpretation (2-3 CR) Teaches fundamentals required for successful drafting as applied to the welding industry. Includes blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings and interpretation of symbols. Lecture 2–3 hours per week.



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Associate Professor, Business Management
B.B.A.–Radford University, 1992
M.B.A.–VPI & SU, 1993

Tamim, Nada M.
Assistant Professor, Biology
B.S. - American University of Beirut, 1993
M.S. - American University of Beirut, 1995
Ph.D. - University of Maryland, 2000

Thomas, Barry L.
Assistant Professor, Physics
A.S.–Virginia Western Community College, 1970
B.S.–Old Dominion University, 1972
M.S.–Old Dominion University, 1974

Thomas, Sue S.
Professor, Art
B.A.–State University of New York College at Fredonia, 1981
M.F.A.–Radford University, 2005

Upshaw, Lanette S.
Assistant Professor, Chemistry
B.S. - University of North Carolina, Wilmington, 2003
M.S. - University of Georgia, 2007

Vasiliauskas, Lora S.
Assistant Professor, Psychology
A.A. - College of DuPage, 1983
A.S. - College of DuPage, 1984
B.A. - University of Illinois at Urbana-Champaign, 1986
M.Ed. - University of Illinois at Urbana-Champaign, 1991

Webb, David E.
Assistant Professor, Mechanical Engineering Technology
B.S.–University of Kentucky, 1979

Teaching Faculty cont'd

White, Amy S.
Assistant Professor, Biology
B.S.–James Madison University, 1987
M.S.–Medical College of VA/VCU, 1992

Williams, Dianne L.
Associate Professor, Nursing
B.S.N.–Wright State University, 1977
M.S.N.–Pennsylvania State University, 1987

Wolff, Diane D.
Professor, Information Systems Technology
B.A.–University of Northern Iowa, 1974
Ph.D.–Arizona State University, 1978
M.A.L.S.–Hollins University, 1999
C.A.S.–Hollins University, 2003

Work, William E.
Associate Professor, Sociology
A.S.–Virginia Western Community College, 1991
B.A.–Roanoke College, 1993
M.S.–VPI & SU, 1998

Wright, Barbara A.
Associate Professor, Physical Education
A.B.Ed.–Glenville State College, 1973
M.S.–West Virginia University, 1974

Yancey, Deborah A.
Associate Professor, Business Management
A.S.–Virginia Western Community College, 1998
B.A.–Radford University, 2000
M.B.A.–Averett University, 2003

Young, Gary C.
Assistant Professor, Air Conditioning and Refrigeration
Air Conditioning & Refrigeration Certificate, Virginia Western Community College, 1997
Electrical Wiring Certificate, Virginia Western Community College, 1999

Zeisler, James J., Sr.
Instructor, Culinary Arts
A.O.S. - Culinary Arts - Johnson & Wales University, 1992
Certificate - University of Florida, 2000

Professor Emeritus
Ethel Bonds, M.A., C.A.S
Hugh Smith, Ph.D.

Staff

Academic & Student Affairs

Lorry Conklin ..... Assistant to the Vice President
Kathy Holland ..... Class Scheduling Specialist

Admissions

Carolyn Baratta ..... Education Support Specialist
Jennifer Bobbitt ..... Enrollment Services Technician
Karin Cole ..... Enrollment Services Specialist
Debbie LaRocca ..... Enrollment Services Technician
Laura Overbay ..... Enrollment Services Technician
Meg Patterson ..... Admissions & Records Coord/Registrar
Gennieve Richardson ..... Enrollment Services Technician
Courtney Yeager ..... Education Support Specialist

School of Business, Engineering and Technology

Yvonne Campbell ..... Tech Prep Career Coach
Lacey Carey ..... Administrative Assistant - Business
Paul Coleman ..... Tech Prep Career Coach
Terry Drumheller ..... Outreach Career Services Coordinator
Melinda Hill ..... Tech Prep Career Coach
Sandra Layman ..... Tech Prep Career Coach
Carlton Mabe ..... Educational Programs Specialist
Anna Matz ..... Computer Lab Assistant
Tammy Meador ..... Computer Lab Coordinator
Brenda Morrison ..... Office Services Assistant
Lynn Painter ..... Administrative Assistant - Engineering
Jeanette Rader ..... Tech Prep Career Coach
Wally Sabin ..... HITE Grant Program Director
Jackie Scruggs ..... Tech Prep Career Coach
Sandy Shelton ..... Office Manager

Campus Police

David Blankenship ..... Law Enforcement Officer
Joe Burtch ..... Law Enforcement Officer
Mickey Catron ..... Law Enforcement Officer
Guy Gibson ..... Law Enforcement Officer
Craig Harris ..... Police , Security & Emergency Preparedness Chief
Rodney King ..... Law Enforcement Officer
Nicole Nance ..... Security Officer
David Parks ..... Law Enforcement Officer
Brandon Pearson ..... Law Enforcement Officer

Career & Employment Assistance Center

Rhonda Perdue ..... Career Development Specialist
Renee Rice ..... Career Center Specialist

Advising & Retention Services

Lee Allen ..... Academic Advisor
Cathy Falligant ..... Admin. & Office Specialist
Kimberly French ..... Academic Advisor
Desiree Frye ..... Admin & Office Specialist
Reba Hancock ..... Academic Advisor
Cheryl Hilton ..... Retention Assistant
Rebecca Kraemer ..... Academic Advisor

Dean of Student Services Office

Bonny Simpson ..... Administrative Assistant
Sharlona Wimmer ..... Policy & Planning Specialist

Facilities Management

George Bevilacqua ..... Project Manager
Joe Collins ..... B&G Trades Supervisor
Corvin Davis ..... B&G Trades Technician
Brian Duncan ..... Electrician
Grady Hill ..... B&G Trades Technician
H.B. Ingram ..... Maintenance Technician
Johnny Johnson ..... Maintenance Technician
Judy Lienhardt ..... Administrative Assistant
Tom Price ..... B&G Trades Technician
Jim Ramsdell ..... HVAC Technician
Pat Rhodes ..... Trades Supervisor
Chris Smith ..... Plumber/Steamfitter
Jerry Steele ..... B&G Trades Technician
Chris Vaughn ..... B&G Trades Technician
Bobby Walton ..... B&G Trades Technician

Financial and Administrative Services

Fredona Aaron ..... Business Manager
Eydee Bernier ..... Accounts Receivable Clerk
Arletha Butler ..... Assistant to the Vice President
Becky Chauncey ..... Procurement Officer
Pam Cunningham ..... Admin. & Office Specialist
Connie Houff ..... Procurement Officer
Wanda Poff ..... Planning & Policy Specialist
Tricia Price ..... Materials Management Supervisor
Susan Quesenberry ..... PeopleSoft Specialist
Debra Thomas ..... Payroll Specialist
Joanie White ..... Payroll Supervisor
Marla Whiteside ..... Accountant
Dorrisa Williams ..... Payroll Assistant
Yolanda Williams ..... Admin. & Office Specialist
Gracie Wilson ..... Senior Accountant

Staff cont'd

Financial Aid/Veterans Affairs

Michele Hilts.....Education Support Specialist
Marianne Repko.....Education Support Specialist
Emily Slachter.....Admin. & Office Specialist
Michelle Webb.....Financial Aid Grant Specialist
Holly Woodson.....Education Support Specialist

School of Science, Mathematics and Health Professions

Amanda Anderson.....Biology Laboratory Manager
Julia Andrews.....Administrative Assistant-Health
Anita Firebaugh.....Admin. & Office Specialist
Colleen Hailey.....Dental Hygiene Clinical Coordinator
Shirley Long.....On Campus Nursing Lab Coordinator
Clay Nye.....Biology Laboratory Assistant
Mary Perry.....Administrative Assistant-Science/Math
Patty Prevo.....Chemistry Laboratory Manager
Debra Tyree.....Admin. & Office Specialist
Deborah Thompson.....Admin. & Office Specialist
Pam Woody.....Health Careers Information Specialist

Horticulture/Arboretum

Clark BeCraft.....Trainer & Instructor – Horticulture

Human Resources

Carly Johnson.....Human Resources Assistant
Heidi McClintic.....Compensation & Benefits Specialist
Sarah Miller.....Employment & Training Manager
Denise Schuh.....Benefits Administrator
Mike Shelton.....Human Resources Director

Information & Educational Technologies

Tommy Amos.....Help Desk Technician
B Bagby.....Media Services Supervisor
Joe Bear.....Media Specialist
Nicole Bell.....Help Desk Technician
Jake Campbell.....Information Technolgoy Specialist
Cameron Carroll.....Information Technology Specialist
Layne Compton...Admin Application Support Supervisor
Melanie Crouch.....Web Developer
Bill East.....Network Support Supervisor
Dick Efnor.....Help Desk Technician
Jason Garnett.....Information Technology Specialist
Sheila Haynes.....Help Desk Technician
David Harrison.....I&ET Director
Michael Lucas.....Information Technology Specialist
Tony Maiolo.....Information Technology Specialist
Debbie Mayo.....Help Desk Technician
David McDonald.....Information Technology Specialist
Doug Parsons.....Network & Security Administrator
Jason Reid.....Web Designer
Jaime Shetrone.....Web Program Analyst
Tim Stockton.....Systems Administrator
Cathy Swain.....Information Technology Specialist
Natalie Talbott.....User Support Services Supervisor
Rick Via.....Network Administrator

Institutional Advancement

Wanda DiMarco.....Scholarship & CCAP Program Coord
Ruth Ebrahim.....Alumni & Media Relations Specialist
John McKay.....Grants Specialist
Karen Rayl.....Admin. & Office Specialist
Erik Williams.....Communications & Annual Giving Coord

Institutional Effectiveness

Tara Nepper.....Event Planning & Scheduling Coordinator

Learning Technology Center

Lois Beck.....Admin. & Office Specialist
Norman Blake.....Admin. & Office Specialist
Nancy Cook.....Learning Technology Center Manager
Leo Cullen.....Trainer & Instructor
Darlene Foley.....Admin. & Office Specialist
Nancy Francisco.....Writing & English Tutor
Pam Gilbert.....Admin. & Office Specialist
Sarah Higgins.....Trainer & Instructor
Mike McCaskey.....Mathematics Tutor
Mary Powers.....Admin. & Office Specialist
Rachel Rorer.....Tutor Coordinator
Ashley Short.....Admin. & Office Specialist
Melissa Williams.....Admin. & Office Specialist

School of Liberal Arts & Social Sciences

Susan Clark.....Administrative Assistant
Sarah Grubb.....Administrative Assistant
Patty Marickovich.....Infant & Toddler Specialist
Ellen Munger.....Photography Lab Staff
Brenda Tilley.....Admin. & Office Specialist

Library

Joan Ayers.....Admin. & Office Specialist
Pam Conner.....Admin. & Office Specialist
Jim Gettys.....Library Specialist
Sandra Holland.....Admin. & Office Specialist
Faith Janney.....Library Specialist
Kalyca Schultz.....Library Specialist
Sandra Kelly.....Library Specialist

Staff cont'd

Mail Room

Amy Maiolo.....Mail Room Clerk
Landon Spraker.....Mail Room Clerk

President's Office

Amy Balzer.....Assistant to the College President

Printing Services

Robert Coleman.....Offset Press Operator
Sylvia Foster.....Printing Services Supervisor

Records Office

Meg Patterson.....Admissions & Records Coord/Registrar
Chad Sartini.....Assistant Registrar
Claire Thomas.....Student Records Specialist

Student Activities

Natasha Lee.....Student Activities Coordinator
Jordan Leet.....Student Activities Specialist

Student Recruitment

Allison Dooley.....CCAP Advisor & Recruiter
Kelsey Yardley.....Recruitment Coordinator

REACH/Student Support Services

Brenda Fichtner.....Admin. & Office Specialist
Hillary Holland.....REACH Counselor/LD Specialist

Workforce Development

Dana Asciolla.....Admin. & Office Specialist
Cassandra Dove.....Greenfield Center Coordinator
Ann Layne.....Admin. & Office Specialist
Sarah Olson.....Admin. & Office Specialist
Paulette Parkhill.....Admin. & Office Specialist
Katelyn Quinley.....Admin. & Office Specialist
Phyllis Smith.....Admin. & Office Specialist
Laura Stevens.....One Stop Center Coordinator

Curriculum Advisory Committees

Accounting

Melinda T. Chitwood
Partner
Brown, Edwards & Company, L.L.P.

Bruce M. Grant
Dir. of Finance & Administrative Services
Western Virginia Water Authority

Suzy Lawrence
Director of Accounting
Carilion Clinic

Richard B. Lester
Accounting Supervisor/Assistant Controller
Steel Dynamics, Inc.

Harry Schwarz
Partner
Goodman & Co., L.L.P.

Administration of Justice

Diane V. Brogan
Teaching Associate
Sociology & Criminal Justice
Roanoke College

E. Poe Cobb, Jr.
Probation Officer
Poff Federal Bldg. – 4th Floor

Mike Green
City of Salem Police Department

Octavia L. Johnson
Sheriff
Roanoke Sheriff's Office

Rick Morrison
Director Roanoke City
PD Training Academy

Pat Pavich
U.S. Secret Service
Poff Federal Building

Chris Perkins
Assistant Police Chief
Roanoke City

Major David Rorrer
City of Salem Sheriff's Department

Steve Short
Roanoke County Police Academy

Captain Ben Cook
Vinton Police Department

Administrative Management Technology/ Health Information Management

Brenda Anderson
Practice Administrator
Physicians to Children

Jerry Barnett, Manager
Roanoke Office
Virginia Employment Commission

Kathy Beard
Coordinator of Career & Technical Edu.
Roanoke County Schools

Debbie Harless
Transcription Supervisor
Lewis-Gale Medical Center

Robert E. Lee, Jr.
Assistant Administrator
Physicians to Children

Elnora Tucker, Recruiter
Carilion Clinic
Human Resources

Barbara Williams
Practice Manager
Cave Spring Family Practice

Jeanne Woodward, B.S.N., R.N., C.P.C.
Compliance Director
Eggleston and Eggleston

Architectural/Civil Engineering Technology

Barry Baird
President/CEO
Avis Construction Co., Inc.

Sherry F. Crickenberger
Architectural Designer & Adjunct Faculty
Virginia Western Community College

Byron Dickson
President
Dickson Architects & Associates

John Garland
Principal/President
Spectrum Design, P.C.

Donald Pritchard
Vice President
SFCS, Inc.

Bradley D. Townsend
Structural Engineer
AECOM

Automotive Analysis and Repair

Danny Bass, Owner
Bass Transmissions & Automotive Repair

Drew Daniels
Services & Parts Director
Dominion Dodge

Richard Durrett
Automotive Instructor
Roanoke City Technical Education Center

Carlton Mabe, Trainer & Instructor I
Virginia Western Community College

Joseph D. Moore
Automotive Instructor, Roanoke Co. Schools
Adjunct Instructor, VWCC

Scott Shrewsbury, Service Manager
Mike Sisca, Shop Foreman
Magic City Ford

Business Management

Patty A. Cundiff
Owner
P. A. C. Interiors & Floor Fashions, Inc.

Richard Harris, Jr.
Plant Manager
Info Seal

Cary Hunley
Operations Manager
Lowe's, Inc.

Carolyn Kazner
Business Banker
Wachovia Bank

Joseph J. Sgroi
Director of Human Resources
Roanoke County

Todd Wampler
Owner/Broker
Wampler Realty

Communication Design

Heather Cash
R. R. Donnelley & Sons Co.

Matt Dillon
Customer Service Manager
Elizabeth Arden

Tony Pearman
Access

Katie Wallace
Wallace Agency

Culinary Arts

Katie Camper Porter
Culinary Advisor

Phillip J. Davis
Assistant General Manager
The Hotel Roanoke & Conference Center

Peter Kipp, CHA, CHSE, CHSP
Executive Advisor
Roanoke Valley Hospitality Association

Fred Najjum
Owner
Roanoke Fruit & Produce Company

Billie Raper, CEC
Executive Chef
The Hotel Roanoke & Conference Center

Jeff Roop
General Sales Manager
U. S. Foodservice-Roanoke Division

Albert Schnarwyler
Retired Executive Chef
The Homestead

Dental Hygiene

Amanda Beheler, R.D.H.
Roanoke, VA

Charles E. Conklin, D.D.S.
Director of Dental Services
Carilion Roanoke Memorial Rehab Center

William Deyerle, D.D.S.
Roanoke, VA

Marie Gibbs, R.D.H.
Veterans Administration Medical Center

Colleen Hailey, R.D.H.
Virginia Western Community College

Heather Harris, R.D.H
Virginia Western Community College

Richard Joachim, D.D.S.
Blue Ridge, VA

Linda Meador, R.D.H.
Roanoke, VA

R. Douglas Ross, D.D.S.
Roanoke, VA

Leslie Spira, R.D.H.
Carilion Roanoke Memorial Dental Clinic

Martha Sullivan, R.D.H., M.S.H.A.
Dental Hygiene Program Head
Virginia Western Community College

Becky Tinsley, R.D.H.
Roanoke, VA

Lynn Triplett, R.D.H.
Roanoke, VA

Greg Wright, D.D.S.
Roanoke, VA

*Annie Parcell
Student Representative
*Student Representative Appointed Annually

VWCC-CVCC Joint Venture

Dental Hygiene

Dale Evans, D.D.S.
Forest, VA

Susan Hudson, R.D.H.
Lynchburg, VA

Joanne Kane, R.D.H.
Lynchburg, VA

Mike Parker, D.D.S.
Lynchburg, VA

Augustus Petticolas, D.D.S.
Lynchburg VA

Richard Poe, D.D.S.
Appomattox, VA

David Riley, D.D.S.
Forest, VA

Martha Sullivan, R.D.H., M.S.H.A.
Program Head of Dental Hygiene
Virginia Western Community College

Cheryl Todd, R.D.H.
Lynchburg, VA

Tom Warwick, D.D.S.
Lynchburg, VA

Sandy Williams, C.D.A.
Forest, VA

Jamie Worley, R.D.H.
Gretna, VA

*Rachel Markham
Student Representative
*Student Representative Appointed Annually

VWCC-DCC Joint Venture

Dental Hygiene

Michelle Bernard, Coordinator
George Washington High School
Dental Assisting Program (Danville)

Wade Davenport, Ph.D.
Dean of Arts and Sciences
Danville Community College

Pat Gobble, R.D.H.
Danville, VA

F.T. Grogran, III, D.D.S.
Danville, VA

Greg D. Howard, D.D.S.
Danville, VA

Robin Jennings, R.D.H.
South Boston, VA

Jim Muehleck, D.D.S.
Martinsville, VA

Albert Payne, D.D.S.
Danville, VA

Cathy Rutledge, R.D.H.
Danville, VA

Martha Sullivan, R.D.H., M.S.H.A.
Dental Hygiene Program Head
Virginia Western Community College

Lynn Turner, R.D.H.
Site Coordinator
Danville Community College

*Margaret Southerly
Student Representative
*Student Representative Appointed Annually

VWCC-LFCC Joint Venture

Dental Hygiene

Mostafu Aboulkhair, D.D.S.
Luray Dental Clinic
Haymarket, VA

Michelle B, Blitch, R.D.H.
Winchester. VA

Clark Fortney, D.D.S.
Stephenson, VA

Linda Gill
Site Coordinator
Lord Faifax Community College

Lori L. Gochenour, D.D.S.
Hagerstown, MD

Jill B. Grassmick, R.D.H.
Luray ,VA

Thomas Gromling, D.D.S.
Stephens City, VA

Ben Hanson, D.D.S.
Winchester, VA

Sonja H. Haynes, R.D.H.
Middletown, VA

Polly Hoveter, R.D.H.
Front Royal, VA

Fabiolla Hutchins, R.D.H.
Winchester, VA

Pamela Johnson, R.D.H.
Winchester, VA

Kathleen Kanter, R.D.H.
Middletown, VA

Pamela A. Kitner, R.D.H.
Fort Valley, VA

Cindy J. Knotts, D.D.S.
Winchester, VA

Karen J. McIntyre, R.D.H.
Front Royal, VA

Lynne Stovall R.D.H.
Bentonville, VA

Martha Sullivan, R.D.H., M.S.H.A.
Program Head of Dental Hygiene
Virginia Western Community College

Mark Zemanovich, D.D.S.
Stephens City, VA

*Brittany Green
Student Representative
*Student Representative Appointed Annually

Early Childhood Development

Selena Childress, Director
TAP Head Start

Rosemarie Dillon, Director
First Baptist Child Development Center

Maria Ferrone
Director of Operations
Honey Tree Early Learning Centers

Dr. Kathy Hoover
Radford University
College of Education & Human Development

Donna Lee
Coordinator of Early Childhood Education
Roanoke City Schools

Monique Johnson
Licensing Specialist
Department of Social Services
Peidmont Regional Office

Sharon Sheppard
Preschool Program Coordinator
Roanoke County Schools

Ramona Wray
Supervisor of Education, Head Start
TAP Head Start

Holly Blankenmeyer
Director
Greenvale School, Inc.

Melanie Quillen
Child Care Link
Council of Community Services

Kris Meyers
Program Manager
Smart Beginnings of Greater Roanoke

Electrical Engineering Technology and Mechanical Engineering Technology

Bonnie Allen, Vice President
Customer Operations
Keltech Electronics

Dawn Boone
Engineering Technician
Plastics One

Bob Dickerson
Engineering Manager
Mersen

Dennis Frye
Director of Instructional Tech. & Media
Rockingham County Schools

Dennis Harris
Production Director
The Roanoke Times

Dan Johnson
Electronics Instructor
Franklin County High School

Deanna Marion
Senior Program Manager
Cobham

Earl R. Smith, Senior HR Consultant
Human Resources
American Electric Power

Emergency Medical Services

Deborah T. Akers
Regional Education Coordinator
Western Virginia EMS Council

Billy Altman
Assistant Chief
Roanoke Fire & EMS

David Bishop
Battalion Chief
Roanoke Fire & EMS

Kevin Broyles, DO
Roanoke Memorial Hospital

Gene Dalton
Roanoke Field Coordinator
Western Virginia EMS Council

Jimmy Doran
EMS Training Specialist/Director
RVRFEMSTC EMT-Program
Roanoke County Fire & Rescue

Bill Duff
Battalion Chief EMS
Roanoke County Fire & Rescue

Rodney Ferguson
Battalion Chief
Roanoke County Fire & Rescue

Carol Gilbert, M.D.
Roanoke Memorial Hospital

Rob Johnson
Captain of EMS
Salem Fire & EMS

Anne Kornegay
Dean of Science, Mathematics and Health Professions
Virginia Western Community College

Roger Manuel
Battalion Chief
Roanoke Fire & EMS

Steve Simon
Division Chief-Administration
Roanoke County Fire & Rescue

Kevin Totten
Haz-Mat/Training Captain
Salem Fire & EMS

Energy Management Systems

Mike Alexander, IT Solutions Architect
ADM Micro

Stan Breakell, President
Breakell, Inc.

Adam Cohen, President
Structures Design Build

Ken Cronin, Director of General
Services/Sustainability
City of Roanoke

Tolga Durak, Adjunct Instructor
Virginia Western Community College

John A. Garland, President/Principal
Spectrum Design

Scott Johnson, Plant Manager
Tecton Products

Patrick Murdock, Engineer
Trane

Mike Newsome, President
Caveman Technology, Inc.

Georg Reichard, Assistant Professor
Virginia Tech

Mark Slone
High Performance Building Specialist
Trane

Fire Science

Battalion Chief Roger Manuel
Chief Training Officer
Roanoke City Fire/EMS

Captain Mike Armstrong
Roanoke City Fire/EMS
VWCC Fire Science Instructional Staff

Chief Richard Burch
Fire Chief
Roanoke County Fire & Rescue

Chief Pat Counts
Fire Chief
Salem Fire/EMS

Battalion Chief Rodney Ferguson
Chief Training Officer
Roanoke County Fire & Rescue

Chief David Firestone
Division Chief
Botetourt County/EMS

Chief David Hoback
Fire Chief
Roanoke City Fire/EMS

Chris Linkous
Career Captain
Vinton Fire/EMS

Deputy Fire Chief John Prillaman
Training Officer
Salem Fire/EMS

Geographic Information Systems

Sharon S. Blackwell
Project Manager, GIS and Creative Services
Anderson & Associates

Thomas Furcron
GIS Coordinator
GIS Department, Franklin County

Charles Grant
GIS Analyst
Engineering Department, Salem

Erika Hoffman
GIS Coordinator
Western Virginia Water Authority

Fred Hoffman
Teacher and Science Department Chair
Roanoke Valley Governors School

Tracey Leet
GIS Project Manager
Roanoke City

John McGee
Associate Professor/Virginia Geospatial Extension Specialist/Virginia View Coordinator
Department of Forest Resources and Environmental Conservation

Matt Miller
Director of Information Services
Roanoke Valley-Alleghany Regional Commission

Todd Morland
GIS Technician
Roanoke County

Michael Nichols
Assistant Director, Information Technology
R & K Solutions

Shane Sawyer
Regional Planner III
Roanoke Valley-Alleghany Regional Commission

Horticulture Technology

Mike Anderson
Owner
Varsity Landscaping and Grounds, Inc.

Marilyn Arbogast
Horticulturist
City of Roanoke

Ray Bowman
Owner
Q.L.C., Inc.

Randy Brannon
Owner
Roanoke Landscapes, Inc.

Sherri Dorn
Agent – Agriculture/Natural Resources
Virginia Cooperative Extension

Bill Garren
Owner
Green Acres, Inc.

Fredrick Gray
Owner
Gray's Nursery

Melissa Hodgkinson
Landscape Architect, Owner
Fiddlehead Landscape & Design

Barbara Kolb
Owner
Blue Ridge Vineyards

Human Services

Raleigh Campbell
Coordinator, Social Work Program
Virginia Western Community College

Pat Hill
Blue Ridge Behavioral Healthcare
Community Training Services

Robin Hubert
On Our Own of Roanoke Valley, Inc.

Jean Craddock
Brandon Oaks Nursing Home

Tom MacMichael
Presbyterian Community Center/Pathways Program

Jenny Neel
Bethany Hall

Tamara Tolley
Blue Ridge Behavioral Healthcare

Eulah Price
Academic Outreach Director
Radford University

Sherri Songer
The Turning Point/Salvation Army

HVAC (Heating, Ventilation, Air Conditioning)

Marvin Lloyd
Owner
Mechanical Services LLC

Tracy Moore
Technical Service Advisor
Southern Refrigeration Corporation

Jason M. Price, Manager
Mechanical Division
Newcomb Electric

Dan Reynolds
District Service Solutions Manager
Virginia Trane

Mark Shepherd
Purchasing Manager
Southern Refrigeration Corporation

Frank Terry
General Manager
Service Experts

Information Systems Technology

Art Carter, Ph.D., Chair
Department Information Technology
Radford University

Kathy D. Cox
Assistant Director of Technology
City of Roanoke

Robin Edwards
Application Architect
County of Roanoke

Christopher Fury
Senior Software Engineer
Synchrony, Inc.

Garry Lautenschlager
Data Governance Specialist-Commercial
Advance Auto Parts

Paul Moore, Vice President
Information Systems and Services
Shenandoah Life Insurance Company

Integrated Environmental Studies

Dr. Jeffrey Gillette
Associate Professor, Biology
Virginia Western Community College

Anne Kornegay, Dean
Science, Mathematics and Health Professions
Virginia Western Community College

Dr. Antoinette Pepin
Associate Professor, Biology
Virginia Western Community College

Shane Sawyer
Regional Planner
Roanoke Valley Alleghany Regional Commission

Scott Shirley
Director of Wastewater Operations
Western Virginia Water Authority

Lanette Upshaw
Assistant Professor, Chemistry
Virginia Western Community College

Motorcycle

Bruce Biondo, Manager
Motorcycle Program
Department of Motor Vehicles

Kip Coles
Sales Manager
Star City Power Sports

Roger Hamner
Instructor
Motorcycle Safety Program

Carlton Mabe, Coordinator
Motorcycle Safety Program
Virginia Western Community College

Dennis Phillips, Coordinator
Motorcycle Safety Program
Central Virginia Community College

Jeffrey Poore
Instructor
Motorcycle Safety Program

Nursing

Kimberly Ferren Carter, Ph.D., M.S.N., B.S.N.
Director of Nursing School
Radford University

Patty Carroll
Education Specialist
Lewis-Gale Medical Center

Cynthia Cunningham
Director Clinical Simulation Center
Radford University

Leigh Frazier
Director of Behavioral Health
Lewis Gale Medical Center

Marsha Garrison
Nursing Department
VA Medical Center

Pamela Hardesty, Ph.D., R.N.
Chief Nursing Officer
Lewis-Gale Medical Center

Toni Pierce
Director of Nursing
Richfield Retirement Community

Maxine Smith, R.N.
Director of Educational Services
Richfield Nursing Center

Stimis Smith, R.N., B.S.N., C.R.R.N.
Director of Rehab 2
Carilion Clinic

Carolyn Webster, R.N., B.S.N., M.B.A.
Vice President of Nursing Operations
Carilion Clinic

Paralegal Studies

Diane Casola, Esquire
Teacher
Roanoke City Public Schools

Charles O. Cornelison
Associate Director of Gift Planning
University Development Gift Planning
Virginia Tech

Roy V. Creasy, Esquire
Roanoke, VA

Charles L. Downs, Jr., Esquire
LeClair Ryan

Scott R. Geddes, Esquire
Osterhoudt, Prillaman, Natt, Helscher, Yost, Maxwell & Ferguson, PLC

Heather Hale
Paralegal
Woods, Rogers, PLC

Samuel Vance, Esquire
Overby, Hawkins & Wright

Practical Nursing

Richie Alba, LNHA
Director of Nursing
Richfield Retirement Community

Martha Cousier
Human Resources Manager
Berkshire Health and Rehabilitation

Lauren Crowder
Human Resources Manager
Carilion Roanoke Memorial Hospital

Melanie Ham, RN, CNS-BC, CSAC
Director Staff Development and Training
Catawba Hospital

Barbara Johnson
Human Resources Manager
Friendship Retirement Community

Jennifer Lytle, R.N., DON
Department of Veterans Services
Veterans Care Center

Janet Smith, R.N.
Staff Development
Berkshire Health & Rehabilitation

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Radiation Physics
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Radiography

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Carilion Riverside 3

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Carilion Roanoke Memorial Hospital

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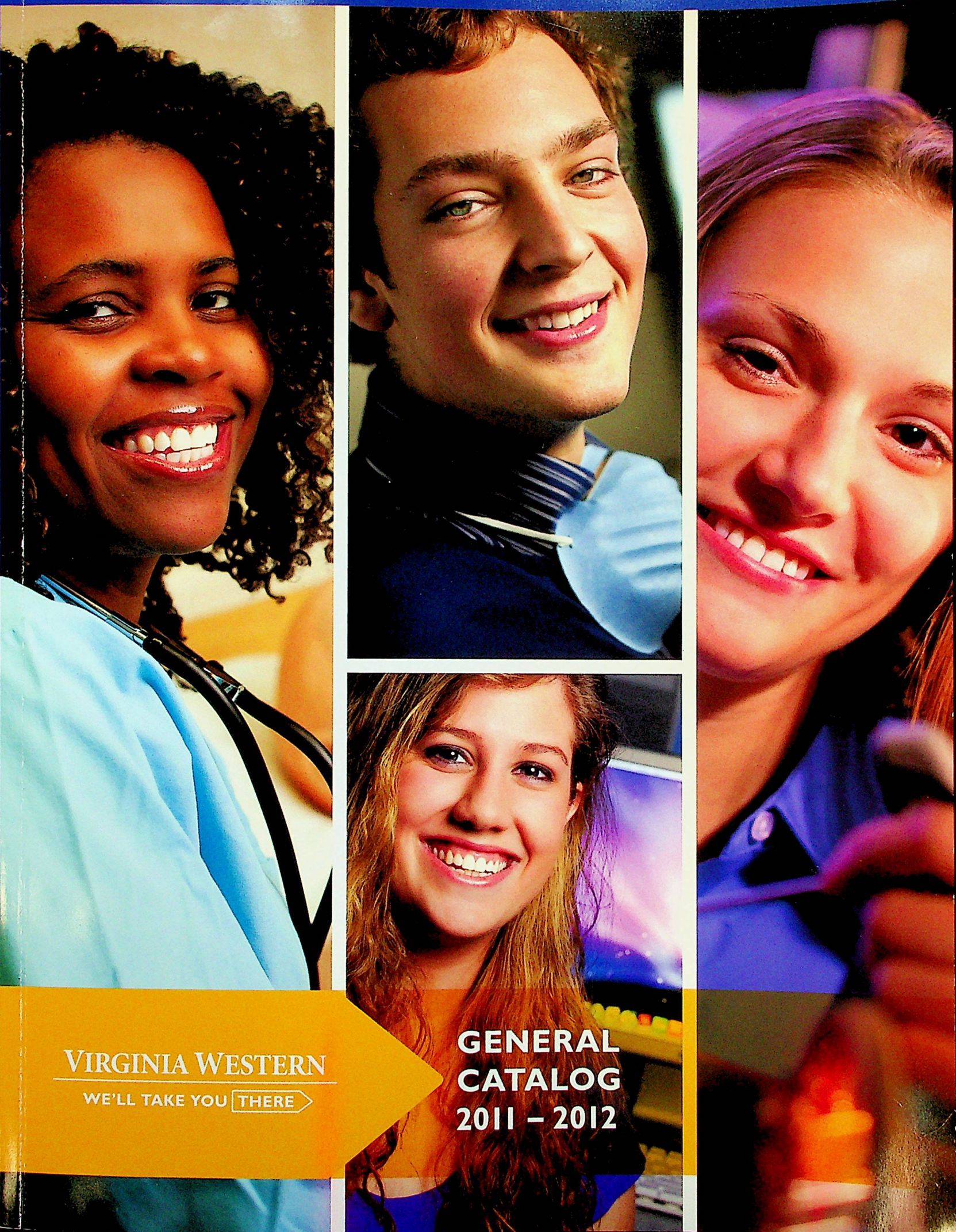

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