# 2012-2013
# College Catalog


**Virginia Western Community College**

**Mailing address**
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

# President's Welcome

ON BEHALF OF THE ENTIRE FACULTY AND STAFF, I would like to welcome you to Virginia Western Community College. We are dedicated to helping you achieve your academic, professional and personal goals. Whether you intend to earn an occupational or technical degree, transfer to a four-year institution, acquire and improve skills to advance in your current career or begin a new one, or just wish to enrich your life through higher education, we'll take you there.

It is our mission to provide affordable, accessible and quality educational opportunities and workforce training to meet individual, community and global needs. We do this by offering cutting-edge classes at our main campus in Roanoke, online and at off-campus sites such as The Franklin Center, the Greenfield Education and Training Center in Botetourt County, and at the Roanoke Higher Education Center.

This catalog provides information about our extensive program offerings to help you plan your goals, and includes information about financial aid and scholarship opportunities to help you fund them. We understand that individual needs vary, and an education at Virginia Western has never been more convenient with day, evening, full-time Friday and weekend classes. In addition, many students are now enjoying the flexibility of our wide array of distance learning classes as well.

Virginia Western offers a comprehensive college experience with numerous student activities and support services available. We offer athletics, student-run clubs and other extracurricular activities like theater programs and movies. To develop well-rounded students, we provide opportunities to socialize and collaborate outside of the classroom.

Our dedicated faculty and staff are here to guide you academically when you are enrolled at Virginia Western and to help you take the next steps in your life. We can make your transfer to a four-year institution a seamless process and we will assist you in your search for a fulfilling career.

I encourage you to find out more about Virginia Western by visiting *www.virginiawestern.edu* or calling 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.

Thank you for choosing Virginia Western to continue your education and best wishes to you for a successful academic year.

Sincerely,

Robert H. Sandoe

College President

# Table of Contents

# Administrative Officers

President ..... Dr. Robert H. Sandel
Vice President of Academic and Student Affairs ..... Dr. Tresia Samani
Vice President of Financial and Administrative Services ..... Cheryl C. Miller
Administrative Officer for Planning and Assessment ..... Carol Rowlett
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 ..... Chad Sartini
Coordinator of Grants Development and Special Projects ..... Marilyn J. Herbert-Ashton
Coordinator of Library Services ..... Lynn H. Hurt
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
Interim Dean of Science, Mathematics and Health Professions ..... Dr. Bryan Schaubach
Dean of Student Services ..... Lori C. Baker
Director of Facilities Management Services ..... Kevin G. Witter
Executive Director for VWCC Educational Foundation and External Relations. ..... Dr. Angela M Falconetti
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) 857-6326
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

# Academic Calendar for 2012-2013

## SUMMER TERM 2012

*10-Week Session*

| | |
|---|---|
| First Day to Enroll | April 13 |
| First Day of Classes | May 16 |
| Last Day to Register/Add a Class | May 22 |
| Memorial Day Holiday | May 28 |
| Last Day to Drop and Receive a Refund | May 29 |
| 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 30 |

*First 5-Week Session*

| | |
|---|---|
| First Day of Classes | May 16 |
| Last Day to Register/Add a Class | May 20 |
| Last Day to Drop and Receive a Refund | May 21 |
| Memorial Day Holiday | May 28 |
| 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 30 |

*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 30 |

## FALL SEMESTER 2012

*16-Week Session*

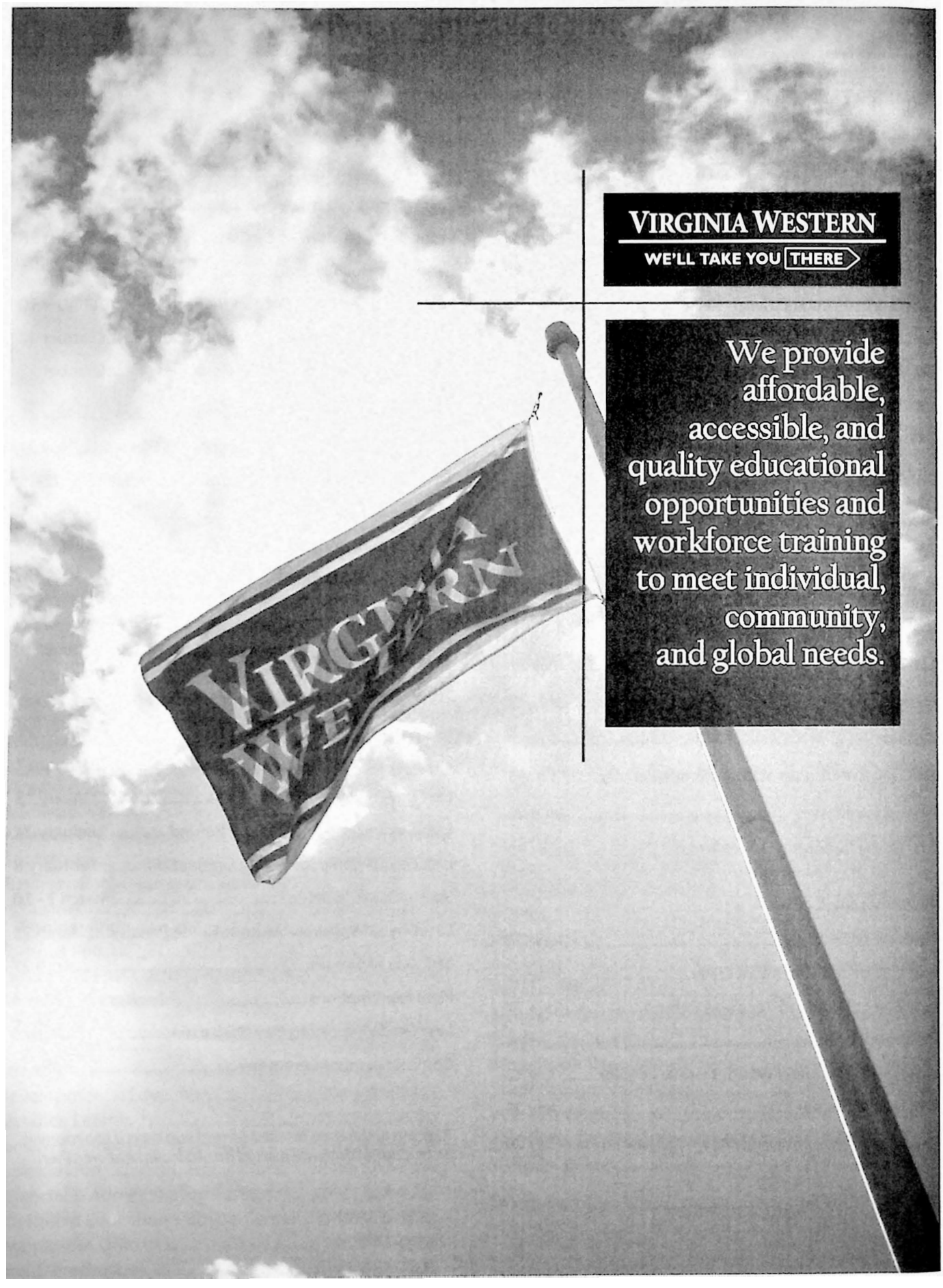
| | |
|---|---|
| First Day to Enroll | June 25 |
| First Day of Classes | August 22 |
| Last Day to Register/Add a Class | August 28 |
| Labor Day Holiday | September 3 |
| Last Day to Drop and Receive Refund | September 10 |
| Last Day to Apply for Fall Graduation | October 12 |
| Last Day to Withdraw Without Grade Penalty | October 27 |
| Faculty In-Service Day-No Day or Night Classes | Nov 20 |
| Faculty Research Day-No Day or Night Classes | Nov 21 |
| Thanksgiving Holidays | November 22-25 |
| Last Day of Classes | December 11 |
| Final Examinations | December 12 - 18 |
| Last Grade Reporting Day (9:30 a.m.) | December 20 |

## SPRING SEMESTER 2013

*16-Week Session*

| | |
|---|---|
| First Day to Enroll | November 12 |
| First Day of Classes | January 7 |
| Last Day to Register/Add a Class | January 13 |
| Last Day to Drop and Receive Refund | January 24 |
| Last Day to Apply for Spring Graduation | February 8 |
| Spring Break/Makeup* | March 3 - 10 |
| Last Day to Withdraw Without Grade Penalty | March 21 |
| Last Day of Classes | April 27 |
| Final Examinations | April 29 – May 4 |
| Last Grade Reporting Day (9:30 a.m.) | May 6 |
| Commencement Ceremony | May 10 |

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


VIRGINIA WESTERN
WE'LL TAKE YOU THERE
We provide affordable, accessible, and quality educational opportunities and workforce training to meet individual, community, and global needs.

# 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...

**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 Southern Association of Colleges and Schools Commission on Colleges 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. Normal inquiries, such as admission requirements, financial aid, educational programs, etc., should be addressed directly to Virginia Western and not to the Commission's office.

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, engineering; 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 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, and faculty offices. 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 provides easy access to both North and South Campus.
- 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, as well as various technical 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
- 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
- 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 access to modern, well equipped 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. 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 Registrar or Dean of Student Services.

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 Registrar or Dean of Student Services 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 Registrar or Dean of Student Services 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 Registrar or Dean of Student Services. Completion of appropriate academic assessment may be required. A Petition for Admission/ Reinstatement and formal written appeal should be directed to the Admissions Office 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.

Student educational information may also be used without a student's written approval in educational research conducted by Virginia Western instructors and other school officials with legitimate educational interests.

## 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.

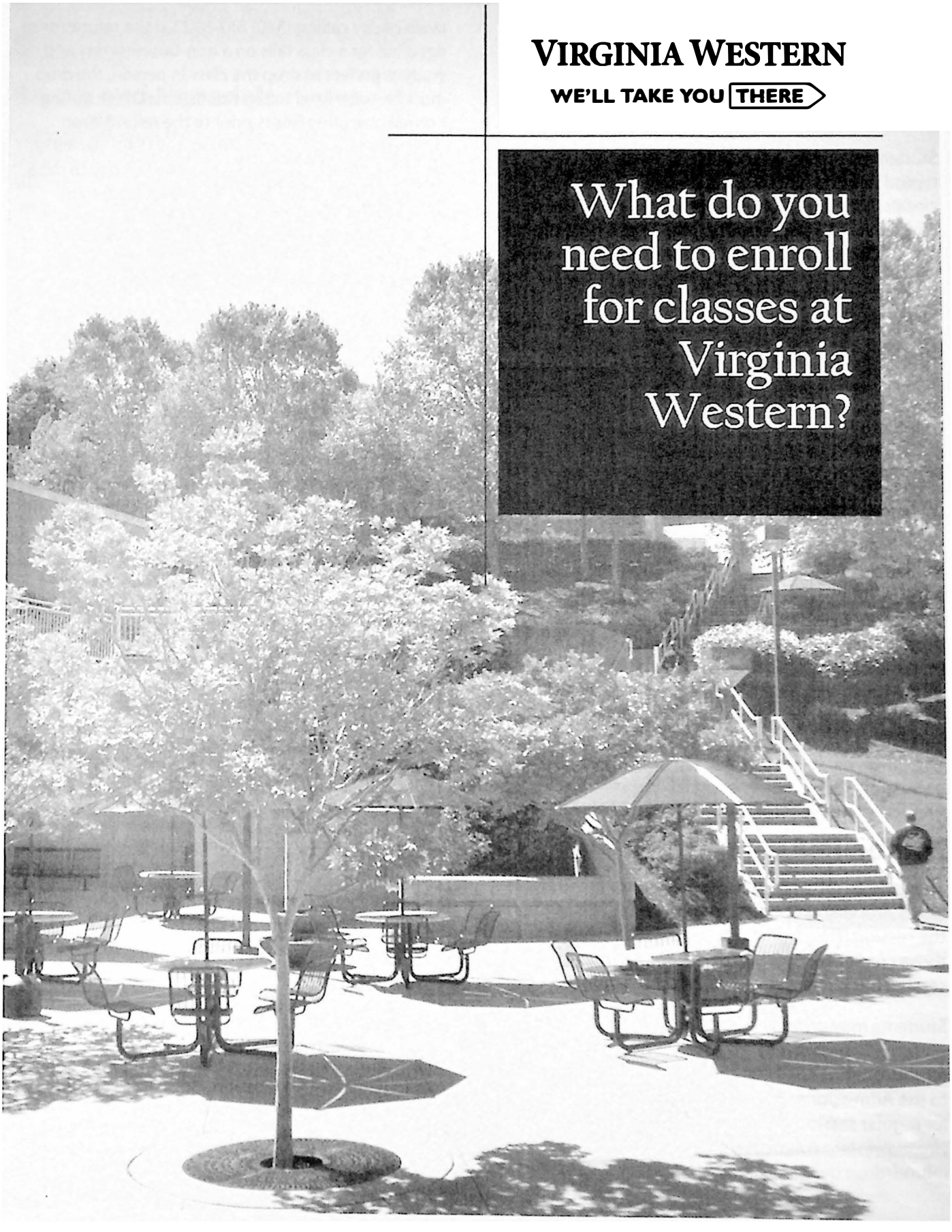
Under 20 USC 1232g(d) all rights of parents (including the right to inspect educational records and to consent to the disclosure of personally identifiable information) transfers to the student at the earlier of: 1) the attainment of age 18, or 2) attendance at an "institution of postsecondary education."

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 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 once they have met with an academic advisor or are in good standing. |
| **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 online at *www.virginiawestern.edu/academics/calendar.php* or 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 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 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 can be found online at *www.virginiawestern.edu/academics/calendar.php* or 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. |


VIRGINIA WESTERN
WE'LL TAKE YOU THERE
What do you need to enroll for classes at Virginia Western?

# Expenses

## Tuition

Current tuition information can be obtained from the Admissions Office and or online at *www.virginiawestern.edu/admissions/tuition.*

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 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 beginning date of the course. Students may drop classes online through their MyVWCC account. Failure to drop courses 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 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 online at *www.virginiawestern.edu/academics/calendar.php.* 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

The first step to applying for financial aid is completing the Free Application for Federal Student Aid (FAFSA). This is a federal application used to determine your eligibility for various forms of financial aid from both public to private funds including grants, scholarships, student loans, and work-study funding.

The FAFSA can be submitted directly over the internet at *www.fafsa.ed.gov.* Students are strongly encouraged to use the online application. This ensures the quickest processing by the Department of Education. A paper application can also be obtained by calling 1-800-4-FED-AID. Using a paper application extends processing time. A new financial aid application must be submitted for each academic year of enrollment. Institutional and other locally sponsored scholarship programs often use the FAFSA data as a tool to determine eligibility in those programs, in addition to academic performance. Candidates for these scholarships should also submit a FAFSA.

Many sources of financial aid have limited funding, so the date of application is a critical factor. An application may be submitted as early as January 1 (e.g., January 1, 2012, for the 2012–2013 academic year). Primary consideration is given to students whose applications are received and processed by the **priority date** published on the VWCC Financial Aid web site (*http://www.virginiawestern.edu/financialaid/deadlines.php*). Please submit your financial aid application materials as early as possible.

Pell Grant support can be provided to eligible students throughout the academic year. Pell eligible students whose eligibility is determined prior to the semester and who have a Pell award that exceeds the amount of tuition and fees can charge books and supplies prior to the beginning of the semester at the VWCC bookstore. However, tuition/book coverage at the beginning of a semester requires submission of a valid FAFSA, with additional documentation as required by the **priority date**. To allow for processing time, a student should complete and submit the FAFSA at least six to eight weeks before the beginning of the semester. A student whose Pell eligibility is determined after the start of the term may need to pay for books and supplies out of pocket and receive a reimbursement, assuming the Pell award exceeds the cost of tuition and fees.

**Note:** A new financial aid application must be submitted for each academic year of enrollment.

## Eligibility for Financial Aid

Each student's eligibility for financial aid is individually determined upon receipt of the FAFSA data, and additional documentation if required. Once eligibility is determined and an award granted a student must continue to meet satisfactory academic progress to maintain eligibility. The financial aid office staff is available to answer any questions regarding student eligibility.

## Types of Financial Aid

There are four basic types of financial aid: grants, scholarships, work-study, and student loans. A grant consists of financial support for which neither work nor repayment is required, provided the student completes the coursework. Scholarships are funds that are available to students who fit a particular profile. These funds are generally not expected to be repaid. Federal Work-Study involves actual employment, either on-campus or at an approved off-campus public or private nonprofit agency. Student loans are a form of financial aid that must be repaid.

## Financial Aid Programs

### Federal Pell Grant

The Pell grant is a federal aid program based on financial need. Completion of the FAFSA is required to determine eligibility. A recipient must be enrolled in an eligible program of study and cannot have previously received a bachelor degree. Amounts awarded are based on the Expected Family Contribution which is determined by the FAFSA. In the 2012-13 award year an eligible full time student may be awarded up to $5,550 for an academic year. Awards are for both direct and indirect educational expenses.

### Federal Supplemental Educational Opportunity Grant (FSEOG)

FSEOG is a federal program designed to assist students with financial need. Priority is given to Pell Grant eligible students. Completion and submission of a FAFSA is required to determine eligibility for this fund.

## College Scholarship Assistance Program Grant (CSAP)

The CSAP program is administered by the State Council of Higher Education for Virginia and is 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

COMA is a state program under which students with financial need can receive support not to exceed their tuition and fees. 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)

PTAP is a state aid program similar to the Commonwealth Award Program and it cannot exceed the cost of tuition and fees. It is directed to students enrolled for 1–8 credits per semester.

## Virginia Community College System Grant (VCCS)

VCCS is a state aid program under which students with financial need can receive an award that assists with tuition, fees and books. To qualify, a student must be a domiciliary resident of Virginia.

## Virginia Guaranteed Assistance Program (VGAP)

VGAP is a state program under which first-time freshmen with financial need can receive an award that assists with tuition, fees and books. 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. Second year awards are made to students in the program that maintain a college grade point average of 2.0.

## Virginia Public Service Orphans Education Program

This 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 in the line of duty while living or serving in the Commonwealth in one of the above capacities.

## Foster Care Tuition Grant Program

This 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 at least half 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 scholarships for deserving students. Annual awards are disbursed from over 55 separate scholarship programs. A complete listing of the scholarships, with their criteria, is available online at *http://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 *http://virginiawestern.edu/foundation/scholarship/* for instructions on completing an application online. The following were the 2011-2012 scholarships:

Advance Auto Parts Commonwealth Legacy Scholarship
African American Railroad Heritage Annual Scholarship
Al Pollard Memorial Scholarship for the Culinary Arts - Benefiting First-Year Students
Al Pollard Memorial Scholarship for the Culinary Arts - Benefiting Second-Year Students
Alice Becker Hinchcliffe Williams Endowed Scholarship

Alumni Association Annual Book Scholarship
Appalachian Power Endowed Scholarship
Bank of Botetourt H. Watts Steger III Annual Scholarship
Barry L. Pendrey Memorial Endowed Scholarship
Beverly Day Williamson Jr. Endowed Scholarship
Bridging the Gap Endowed Scholarship
Brown & Sons Farm Annual Scholarship
Col. William Preston Chapter NSDAR Integrated Environmental Studies Scholarship
Continental Societies Endowed Scholarship
Dr. & Mrs. Abe Jacobson Annual Scholarship
Dr. Donna Harpold Memorial Annual Scholarship
Dr. Elizabeth W. Payne Endowed Scholarship
Edward G. Magruder Honorary Annual Scholarship
Employee Annual Giving Scholarship
Employee Family Scholarship
Foot Levelers Endowed Scholarship
Fralin & Waldron Inc. Endowed Scholarship In Memory of Craig E. Via
Fred Whitaker Company Annual Scholarship
Garnett E. and Patsy T. Smith Endowed Scholarship
General Scholarship Fund
Gertrude Light Hubbard Endowed Scholarship
HCA Nursing Scholarship
ITT Exelis Annual Scholarship
John Morris Roslyn Educational Scholarship
Judy Hackworth Memorial Annual Scholarship
Lewis-Gale Medical Center Endowed Scholarship
Macfarlane Family Scholarship
McFarland Endowed Scholarship
Mr. & Mrs. Emanuel Payne Endowed Scholarship
Nursing Endowed Scholarship
Odasz Annual Scholarship
Patrick T. Kay Memorial Scholarship
Pearman Annual Scholarship
Petroleum Marketers Inc. Endowed Scholarship
Prestige Motorcycle Club Annual Scholarship
Raymond and Melvin Hubbard Annual Scholarship
Refugee and Immigrant Services Annual Scholarship
Rita Halsey David Radiography Endowed Scholarship
Sister Eveline Murray Endowed Scholarship
Stan and Betty Lanford Endowed Scholarship
The Dr. John Mathis and Krista Crawford-Mathis Endowed Scholarship
The Flippin Family Endowed Scholarship
The Roanoke Tribune Annual Scholarship
Trane Endowed Scholarship
Walter Darnall Vinyard Endowed Scholarship
William Frank Burton Jr. Annual Scholarship

## Community College Access Program (CCAP)

The Educational Foundation currently administers a Community College Access Program for the City of Salem, City of Roanoke and Franklin County. Students who graduate in the current academic year at the high schools in these localities 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. Information about this program including the application deadline and program eligibility criteria is available online at *www.virginiawestern.edu/ccap.*

## External Scholarship Programs

Numerous scholarships are available each year from external sponsors. Eligibility is generally determined through the sponsor's application process. Eligibility can be based on financial need so we advise all students to complete and submit the FAFSA. To ensure that the most current information is available to our students, resource information for scholarship opportunities is maintained on the Virginia Western Financial Aid website *http://virginiawestern.edu/financialaid/scholarships.php.*

## Federal Stafford Loan Program

Federal Stafford loans are need and non-need based student loans for students enrolled at least half time in a program of study. There are two types of loans for which eligibility is determined:

Subsidized loans are loans in which the federal government subsidizes the interest while the student is attending at least half-time in an eligible program.

Unsubsidized loans can have interest payments made while in school or the student can choose to allow the interest to capitalize.

Completion and submission of a FAFSA is required to determine eligibility for this loan. Amount of eligibility may vary from student to student. A Student Loan Request form must be submitted to the financial aid office, in addition to the FAFSA, to request a loan.

## Parent Plus Loans

The Parent PLUS Program is designed to assist the parent – defined as biological or adoptive mother or father -of a dependent student whose educational expenses exceed other financial resources. Repayment normally begins within 60 days from the date of disbursement. Completion and submission of a FAFSA is required to determine eligibility for this loan. Amount of eligibility may vary from student to student. A PLUS Request form must be submitted to the financial office, in addition to the FAFSA, to request a loan.

## Federal Work-Study Program

Federal Work-Study (FWS) is need based aid that is earned through federally funded part-time employment opportunities on and off campus. It is used to assist students in meeting the need of their educational expenses and also serves as a way to get valuable work skills. Completion and submission of a FAFSA is required to determine eligibility. For application and additional eligibility information visit the Virginia Western financial aid webpage for FWS at *http://virginiawestern.edu/financialaid/workstudy.php.*

# 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.

## Virginia Military Survivors and Dependents Education Program

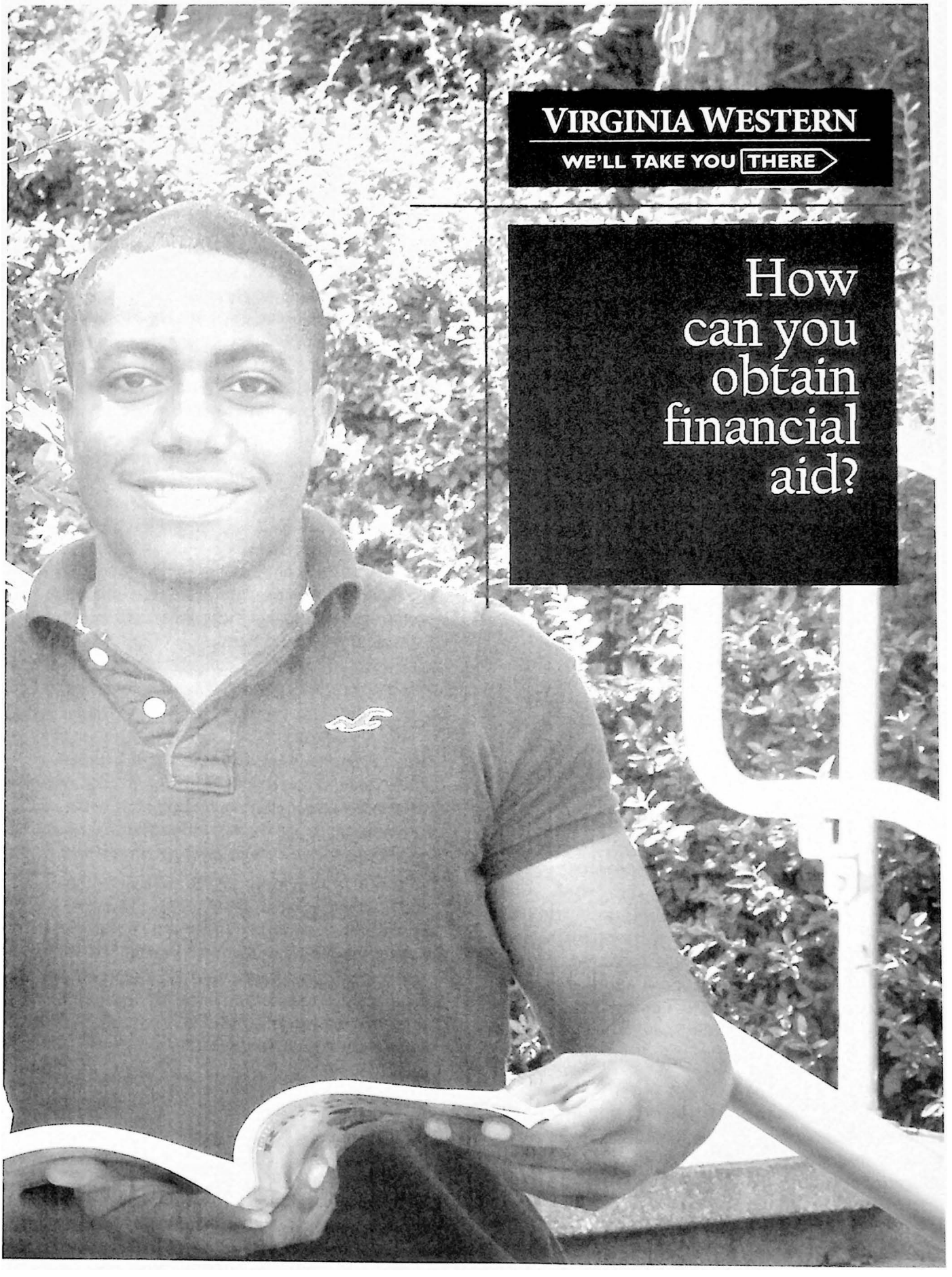
Provides educational assistance for a spouse of a qualifying military service member or a child between 16 and 29 years of age, and has a parent who died or became permanently and totally disabled due to a war-related injury or who is listed as a prisoner of war or missing in action. Further information and application forms are available at *http://www.dvs.virginia.gov/veterans-benefits.shtml#education.* Applications should be submitted at least four months before the expected date of enrollment.

## 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.

## Financial Aid Frequently Asked Questions

| | |
|---|---|
| **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 maximum Pell award is $2,775 per semester. Other types of aid may supplement Pell Grants. |
| **When are refund checks ready?** | Usually the initial disbursement is 6–8 weeks into the semester and refund checks are received up to two weeks after disbursement. Subsequent disbursements are made periodically throughout the term. |
| **If I am Pell eligible when can I obtain books?** | Textbooks and supplies can be charged to the Pell award generally a week before the semester if an award has been determined and the Pell award exceeds the total of your tuition and fees. Review your financial aid award letter for specific dates. |
| **Must I repay my financial aid if I withdraw from school during the semester?** | Textbooks and supplies can be charged to the student's financial aid award. Review your financial aid award letter for specific dates. |
| **Must I repay my financial aid if I withdraw from school during the semester?** | A financial aid student who withdraws from all classes during the first 60% of the semester likely will have to repay a portion of the financial aid that he or she has received. The institution is required to determine the amount of unearned aid that a student may have as of a result of withdrawing at or before the 60% point in the semester. Students that cease attendance in the semester without official notification to the school may also have unearned aid. Please visit *http://www.virginiawestern.edu/financialaid/titleivrefunds.php* for details regarding this policy. |
| **What is the application deadline for financial aid?** | Students should apply as early as possible to allow sufficient time for processing, generally 6-8 weeks. Additional time may be required if additional information is requested for verification and/or corrections. 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 and Pell eligible students may receive an award at an enrollment status of less than half time. |


VIRGINIA WESTERN
WE'LL TAKE YOU THERE
How can you obtain financial aid?

# 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.

An academic advisor 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 *www.virginiawestern.edu/studenthelp/student/viewadvisors.php*.

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 focuses 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 for faculty to identify and refer students to the retention office for assistance in utilizing available resources to help them successfully completing their classes;
2. A series of special topic success skills workshops; and
3. A program of intrusive advising for developmental , academic warning and academic probation students to help them achieve success.

For more information, contact 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 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. 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.

Students who register and pay for one or more classes 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. The detailed ID card policy can be obtained from the Student Activities Office in the Student Center.

## Library

The library supports the mission of the College and is an integral part of the college's instructional program. As a center for academic life, Brown Library provides resources and services needed by both on-campus and off-campus students to fulfill the reading and research requirements of the college's course offerings. Library staff members are committed to providing a friendly and positive environment in which all faculty, staff, and students can learn together through the free exchange of ideas and information.

The library strives to provide well-organized access to a balanced collection in a variety of formats that enhance teaching and learning. The print collection is cultivated and preserved while online collections are developed, all with the goal of giving Virginia Western students every opportunity to succeed in their academic ventures.

Library staff members provide individual and group instruction in the identification, use and evaluation of information resources. Brown Library users are empowered to become capable researchers and effective users of the information resources provided.

## Learning Technology Center

The Learning Technology Center, located on the ground floor of Brown Library at Virginia Western Community College, is a multi-functional resource and instructional support center for students. It serves as the college's testing center for English, mathematics, and reading placement tests, as well as proctored exams for distance learning courses.

The Learning Technology Center provides supplementary instructional support to students in two drop-in centers: the Math Center and the Writing Center. Additionally, for eligible students, The Power Hour Program provides assistance to students who need more intense tutoring than is available in the college's Math, Writing and Academic labs. Qualified students are matched with tutors who are available to work with the student one-on-one several times a week. All of these services and supports are free to students enrolled at Virginia Western Community College.

The Center also houses an open lab which is available to students when not in use for special and overflow testing.

## 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. Hard copies are located in the Student Activities Office in the Student Center room 210. Copies are available on the web at *http://www.virginiawestern.edu/documents/StudentHandbook.pdf.*

## 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 Liberal Arts and Social Sciences, Health Professions 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.

## Weapons Policy

The most current Weapons Policy is available for viewing in the Campus & Workplace Violence Prevention Policy on the college website: *http://virginiawestern.edu/facstaff/violenceprevention.php.* See section 2.2 Prohibition of Weapons.

## 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. 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 Academic and Student Affairs. 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.

### COMPASS Testing Guidelines

Students are permitted three attempts in a calendar year on 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.

### Virginia Placement Testing Guidelines

Students are permitted two attempts in a calendar year on the Virginia 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.

## 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 ENGLISH REDESIGN**

During the spring semester of 2013, Virginia Western Community College will implement a redesigned developmental English 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/* or *http://www.virginiawestern.edu/academics/deveducation.php.*

## 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. 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: no 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, non-credit 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 online at *www.virginiawestern.edu/academics/calendar.php*.) 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 or 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, 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 beginning date of the course. Students may drop classes online through their MyVWCC account. Failure to drop courses 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 assumes 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. 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. If (s)he is unable to reach the instructor, the division office should be contacted.

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, with the exception of seminar classes. (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.

Because courses are designed and conducted in diverse ways, instructors will inform students, through the course syllabus, if there are specific expectations for attendance and participation that differ from the college policy above. The student will be held to the requirements provided in the course syllabus.

## 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

Students are considered to be "in good academic standing" if they maintain a semester minimum GPA of 2.0, are eligible to re-enroll at the college, and are not on academic suspension or dismissal status. Students on academic warning or academic probation who are eligible to re-enroll may be considered eligible to receive financial aid assistance or other benefits requiring a "good academic standing" status.

### Academic Warning

Students who fail to attain a minimum GPA of 2.0 for any semester shall be placed on academic warning. Students on academic warning should be encouraged to consult with their advisor and take advantage of academic support services provided by the college.

### Academic Probation

Students who fail to maintain a cumulative grade point average of 1.50 will be on academic probation until such time as their cumulative average is 1.75 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 Vice President of Academic and Student Affairs or his designee 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 semester GPA of 1.50 or better shall be placed on suspension only after they have attempted 24 semester credits. Academic suspension shall be for one semester. The statement "Academic Suspension" shall be placed on the students' permanent records. Students who are placed on academic suspension and wish to appeal should follow the appeal process established by the college. Suspended students may be reinstated at the conclusion of the suspension period by following the process established by the college. Students who have been reinstated from academic suspension must achieve a 2.0 GPA for the semester of their reinstatement and must earn at least

a 1.75 GPA in each subsequent semester of attendance. The statement "Subject to Dismissal" shall be placed in the student's permanent records. Students who have been reinstated from academic suspension will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor.

### Academic Dismissal

Students who do not attain at least a 2.00 GPA for the semester of reinstatement following academic suspension shall be academically dismissed. Students who achieve at least a 2.00 GPA for the semester of their reinstatement following academic suspension must earn at least a 1.75 GPA in each subsequent semester of enrollment. Failure to attain a 1.75 GPA in each subsequent semester until the cumulative GPA reaches 1.75 shall result in academic dismissal. The statement "Academic Dismissal" shall be placed on the Students' permanent records. Academic dismissal is normally permanent. In exceptional circumstances, students may appeal and be reinstated following processes established by the college. Students who have been reinstated after academic dismissal will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. The reinstated student may be required to carry less than normal course load the following semester and are required to consult with their advisor/counselor.

## Suspension for Lack of Progress

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

# 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 shows 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 less than $4,000/year. Tuition at a public four-year college in Virginia costs (on average) more than $9,500 per year. Tuition at private colleges is substantially higher. |

(Data Source: SCHEV)

# 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 websites through the Virginia Western website. They can also find transfer information for all Virginia colleges and universities at the following website, which is administered by the State Council of Higher Education for Virginia: *http://www.schev.edu/students/transfer/default.asp.*

## Articulation Agreements

Virginia Western has articulation agreements with specific programs at Virginia senior institutions. Please see a counselor or visit the website: *http://www.virginiawestern.edu/services/transfer/guaranteedadmissions.php* for further information on these articulation agreements.

Virginia Western has the following guaranteed admission agreements:

- 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 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 of Arts or an Associates of Science Degree .

# 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
  UVA-Engineering
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

Bluefield College
Emory & Henry College
Ferrum College
Hollins University
Liberty University
Lynchburg College
Mary Baldwin College
Virginia Wesleyan College
Randolph College
Regent University
Roanoke College
Sweet Briar College
Virginia Intermont 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://www.vccs.edu/Students/TransferList.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

Social Sciences major
- Education specialization

### Associate of Applied Science (AAS)

Accounting major
Administration of Justice major
Administrative Management Technology major
- 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
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
- Energy Management specialization
- Mechatronics Technology specialization

Veterinary Technology major (awarded through BRCC)

## Certificate Programs

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

## 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
Energy Management Systems Introduction
Energy Management Systems Technician
Energy Management Systems Installer
Engineering
Geographical Information Systems: Career Exploration
Health Information Management
  HIM: Health Records Coding
  HIM: Medical Office Specialist
Horticulture
  Greenhouse Management
  Landscaping
  Viticulture
Information Technology
  IT: Database and Program Developer
  IT: Network and Database Administrator
  IT: Web Designer
  IT: Web Programmer
Maintenance Technology
Management
  Entrepreneurship Plus
  Human Resource Development
  Organizational Leadership
Microcomputer Systems Technology
Water and Wastewater Technology
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 houre requirements of the degree curriculum with at leaste twenty-five percent of the total semester hourse acquired at Virginia Western;e
2. Been certified by an appropriate college official fore graduation;e
3. Earned a grade point average of at least 2.0 ine all studies attempted that are applicable towarde graduation in their curriculum;e
4. Filed an application for graduation in the Recordse Office;e
5. Resolved all financial obligations to the college ande returned all library and college materials.e

## 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 houre requirements of the curriculum as specified in thee college catalog with 25% of the credits acquired ate Virginia Western;e
2. Been certified by an appropriate college official fore graduation;e
3. Earned a grade point average of 2.0 in all studiese attempted that are applicable toward graduation ine their curricula;e
4. Filed an application for graduation in the Recordse Office;e
5. Resolved all financial obligations to the college ande returned all library and other college materials.e

# 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: Humanities/Fine Arts, Social/Behavior Sciences, Natural Sciences/ Mathematics, and Health/Physical Education. These general education courses, 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.

## Full-Time Fridays

Virginia Western launched Full-Time Fridays for the first time Spring 2012. This option is for students who are seeking to earn a degree while balancing priorities with work, families and life in general. Full-Time Fridays will give those students the opportunity to earn an Associate of Science Degree in General Studies in just two years while taking in-class and hybrid courses on Fridays only. Courses are offered from 8 a.m. - 6:30 p.m.

For more information about enrolling in Full-Time Fridays, visit our website: *http://www.virginiawestern.edu/academics/fridays.php.*

## 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[1] ..... 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[2] ..... 6 CR
HIS 121-122 U.S. History I–II or
HIS 111-112 History of World Civilization I–II ..... 6 CR

[1] BIO 101-102 students must attend a few on-campus labs on Saturdays.

[2] 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 210 Survey of New Testament
REL 230 Religions of the World

**Social Science electives** (any three) ..... 6 CR
ECO 201-202 Principles of Macroeconomics/ Microeconomics
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**

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

# 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[1] ..... 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[2] ..... 3 CR
HIS 121-122 U.S. History I–II or
HIS 111-112 History of World Civilization I–II ..... 6 CR

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

ECO 201 Principles of Macroeconomics ..... 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 Microeconomics
GEO 200 Introduction to Physical Geography
PLS 211-212 U.S. Government I-II
PSY 215 Abnormal Psychology (or other PSY electives)
PSY 230 Developmental Psychology (or other PSY electives)

**General transfer electives** ..... 3 CR

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

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

# 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 more than $9,500 per year for tuition and fees, plus room and board. (Tuition at private colleges is substantially higher.) By comparison, tuition and fees for a full-time student at Virginia Western is less than $4,000 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**

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

<table>
<tr><th>Area</th><th>Distribution</th></tr>
<tr><td colspan="2">General Education<br>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.)</td><td>Minimum 15 credits<br>(Students must take at least one course in each of the five areas listed, to total at least 15 credits.)</td></tr>
<tr><td>I. Foundations in Communication: Courses designed to enable students to interact with others using all forms of communication, resulting in understanding and being understood.</td><td>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.</td><td></td></tr>
<tr><td>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.<br>IV. Foundations in Personal Development: Courses designed to enable students to strive for physical well-being and emotional maturity.</td><td>IV. Foundations in Personal Development: Courses designed to enable students to strive for physical well-being and emotional maturity.</td><td></td></tr>
<tr><td colspan="2">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.</td><td></td></tr>
<tr><td colspan="2">Program Requirements<br>Major Field Core<br>Related/Specialization Courses<br>Electives</td><td>Minimum 15 credits*<br>Maximum 15 credits<br>0–15 credits</td></tr>
<tr><td colspan="2" rowspan="2">Totals</td><td>AA/AS/AA&S:**<br>60–63 credits</td></tr>
<tr><td>AAA/AAS:<br>65–69 credits***</td></tr>
</table>

# 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.

* 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 5-2
# Minimum Requirements for Diplomas, Certificates, and Career Studies Certificates

| | Diploma | Certificate | Career Studies Certificate |
|---|---|---|---|
| **Definition** | A two-year curriculum with an emphasis in a career/technical area | A curriculum that consists of a minimum of 30 semester credit hours | A program of study of not less than 9 nor more than 29 semester credit hours |
| **Course Requirements** | May include any appropriate courses numbered 10-299 | May include any appropriate courses numbered 10-299 | May include any appropriate courses numbered 10-299 |
| **General Education Requirements** | A minimum of fifteen percent (15%) of credit hour requirements shall be in general education, including 1 three-credit English course. | A minimum of fifteen percent (15%) of credit hour requirements shall be in general education, including 1 three-credit English course. | There are no general education requirements. |
| **Graduation Requirements** | See 5.1.2 and 5.1.3<br>• 25% of courses must be taken at home institution.<br>• 2.0 GPA<br>• Graduation honors eligible | See 5.1.2 and 5.1.3<br>• 25% of courses must be taken at home institution.<br>• 2.0 GPA<br>• Graduation honors eligible | See 5.1.2 and 5.1.3<br>• 25% of courses must be taken at home institution.<br>• 2.0 GPA<br>• Not eligible for graduation honors |
| **Approval** | State Board for Community Colleges | Chancellor | Local College Board |

# Approved List of Transfer Courses

The purpose of these lists of courses is to assist students in their selection of required electives. Each program of study specifies the list from which electives must be chosen. Students must review the requirements for their degree program to ensure electives are chosen from the correct list. Electives should be selected carefully in conjunction with a faculty advisor. Students who intend to transfer should verify specific requirements with their ear institution.

## List A

**General Education Electives**

**Humanities/Fine Arts Electives:**

ART 101-102 History and Appreciation of ART I-II+
CST 130 Introduction to 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 Introduction to Philosophy I
PHI 220 Ethics
REL 200 Survey of the Old Testament
REL 230 Religions of the World
REL 231-232 Religions of the World I-II+
SPA 201-202 Intermediate Spanish I-II

**Health and Physical Education Electives:**

HLT 110 Concepts of Personal & Community Health
HLT 230 Principles of Nutrition & Human Development
PED courses

**Mathematics Electives:**

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 241-242 Statistics I-II
MTH 271-272 Applied Calculus I-II

**Science Sequence:**[1]

BIO 101-102 General Biology I-II
BIO 141-142 Human Anatomy and Physiology
CHM 111-112 College Chemistry I-II
GOL 105-106 Physical/Historical Geology+
NAS 131-132 Astronomy I-II+
PHY 201-202 General College Physics I-II
PHY 241-242 University Physics I-II

**Social Science Electives:**

ECO 201 Principles of Macroeconomics
ECO 202 Principles of Microeconomics
GEO 210 People & the Land: Intro to Cult Geo
GEO 220 World Regional Geography
HIS 111-112 History of World Civilization I-II+
HIS 121-122 United States History I-II+
PLS 211-212 United States Government 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 215 Sociology of the Family
SOC 266 Race and Ethnicity

[1] *A two semester sequence of the same lab science is required to fulfill a science sequnce.*

+ *(Applies to List A and List B) Either course in this sequence may be taken first.*

# Approved List of Transfer Courses

## List B

**Transfer Electives**

**Business Electives:**

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

**Computer Science Electives:**

CSC 201-202 Computer Science I-II

**Communication Electives:**

CST 100 Principles of Public Speaking
ENG 111-112 College Composition I-II
ENG 210 Advanced Composition

**Health and Physical Education Electives:**

HLT 110 Concepts of Personal & Community Health
HLT 230 Principles of Nutrition & Human Development
PED courses

**Humanities/Fine Arts Electives:**

ART 101-102 History and Appreciation of ART I-II+
ART 121-122 Drawing I-II
ART 241-242 Painting I-II
ART 243-244 Watercolor I-II
ART 131-132 Fundamentals of Design I-II
CST 130 Introduction to 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 101-102 Beginning French 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 Introduction to Philosophy I
PHI 220 Ethics
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 101-102 Beginning Spanish I-II
SPA 201-202 Intermediate Spanish I-II

**Mathematics Electives:**

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

**Mathematics Electives cont'd:**

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 Electives with Lab:**

BIO 101-102 General Biology I-II
BIO 141-142 Human Anatomy and Physiology
BIO 206 Cell Biology
BIO 215 Plant Life of Virginia
BIO 270 General Ecology
BIO 271 Introduction to Ecological Systems
CHM 111-112 College Chemistry I-II
CHM 241-242 Organic Chemistry I-II
CHM 245-246 Organic Chemistry Lab I-II
GOL 105-106 Physical/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 Electives without Lab:**

BIO 220 Immunology
BIO 285 Biological Problems in Contemporary Society
ENV 161 Intro to Environmental Compliance
ENV 162 Environmental Principles in Public Health

**Social Science Electives:**

ECO 201 Principles of Macroeconomics
ECO 202 Principles of Microeconomics
GEO 200 Introduction to Physical Geography
GEO 210 People & the Land: Intro to Cult Geography
GEO 220 World Regional Geography
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+
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 215 Sociology of the Family
SOC 266 Race and Ethnicity

# Alphabetical Listing of Programs



**DEVELOPMENTAL ENGLISH REDESIGN**

During the spring semester of 2013, Virginia Western Community College will implement a redesigned developmental English 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/* or *http://www.virginiawestern.edu/academics/deveducation.php*.

ASSOCIATE OF APPLIED SCIENCE (203)

# Accounting

**Purpose:** The curriculum is designed for persons who seek employment in the accounting field.

**Program Objectives:** Employment opportunities include positions as a clerk in accounting, auditing, tax or management.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| CST 105 | Oral Communication (or CST 100) | 3 |
| ECO 120 | Survey of Economics (or ECO 201/202) | 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* | Introduction to Mathematics (or MTH 163) | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 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* | 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] 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

** This course has a requisite. Requisites 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 124 |
| BUS 100 | ACC 212 |
| ENG 111 | BUS 125 |
| ITE 115 | CST 105 |
| MTH 120 | ECO 120 |
| SDV 100 | |

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

**CAREER STUDIES CERTIFICATE (221-203-02)**

# Accounting

**Purpose:** This curriculum is designed for persons who seek employment as a bookkeeper or as an accounting clerk.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

| 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 requisite. Requisites 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 is designed to provide a broad educational foundation which will prepare graduates for employment in numerous criminal justice related occupations. For students already working in the criminal justice field, this curriculum will provide preparation for advancement in the profession.

**Program Objectives:** Employment opportunities exist in a wide variety of areas: uniformed officers for local, county and state police agencies; enforcement/ investigative officers for federal government agencies; corrections, retail and industrial security, probation/ parole, insurance work and private investigation.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** The Associate of Applied Science degree does not take the place of attendance at a basic academy which most police, corrections, or security agencies require prior to being employed by that agency. However, the Administration of Justice curriculum will help prepare one academically for successful completion of an agency academy.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### 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 220 | Ethics (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[3] | Humanities/Fine Arts Elective (List B) | 3 |
| E[3] | Science Sequence (List A) | 8 |

### 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 Community | 3 |
| E[2] | Administration of Justice Electives | 12 |
| **Total Minimum Credits for Transfer Degree** | | **66** |

*[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.*

*[2] 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 232 Domestic Violence*
- *ADJ 234 Terrorism & Counter Terrorism*
- *ADJ 236 Principles of Criminal Investigation*
- *ADJ 237* Advanced Criminal Investigation*

*[3] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

### Suggested Schedule

| First Year/Fall | Spring |
|---|---|
| ADJ 100 | ADJ 120 |
| ENG 111 | CST 100 |
| HLT/PED | ENG 112 |
| ITE 115 | MTH 157 |
| PSY 200 | SOC 200 |
| SDV 100 | ADJ Elective |

| Second Year Fall | Spring |
|---|---|
| ADJ 140 | ADJ 229 |
| PLS 211 | PHI 220 |
| ADJ Elective | ADJ Elective |
| Humanities /Fine Arts | ADJ Elective |
| Science Elective | Science Elective |

ASSOCIATE OF APPLIED SCIENCE (298)

# Administrative Management Technology

**Purpose:** This curriculum is designed for graduates to be qualified for jobs in administrative office management and administrative support supervision.

A specialization is also available in medical administrative management.

**Program Objectives:** Employment opportunities include: general office manager, billing and/or credit manager, executive assistant, and account managers.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Suggested Schedule

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

### Administrative Management Major

### Curriculum and Other Requirements

**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* | Introduction to Mathematics | 3 |
| PSY 120 | Human Relations | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 3 |

### Administrative Management and Related Courses

| | | |
|---|---|---|
| ACC 211* | Principles of Accounting I | 4 |
| AST 101 | Keyboarding I | 3 |
| AST 102* | Keyboarding II | 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

| 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 |

ASSOCIATE OF APPLIED SCIENCE (298)

# Administrative Management Technology cont'd

**Purpose:** This curriculum is designed for graduates to be qualified for jobs in medical office management and medical administrative support supervision.

**Program Objectives:** Employment opportunities include: physician practice manager, hospital office manager, and health information office manager.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Suggested Schedule

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

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

### Medical Administrative Management Specialization (03)

### Curriculum and Other Requirements 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* | Introduction to Mathematics | 3 |
| PSY 120 | Human Relations | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 3 |

### Medical Administrative Management and Related Courses

| | | |
|---|---|---|
| ACC 211* | Principles of Accounting 1 | 4 |
| AST 101 | Keyboarding I | 3 |
| AST 102* | Keyboarding II | 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

** This course has a requisite. Requisites 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 prepare individuals for employment as an administrative professional to executives and/or managers in business and industry. Administrative professionals may also supervise other office personnel.

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

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs.

### Curriculum and Other Requirements

#### General Education Core Courses

| | | Credits |
|---|---|---|
| CST 105 | Oral Communications | 3 |
| ENG 111* | College Composition I | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 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** | | **42** |

** This course has a requisite. Requisites 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 100

**Spring**
ACC 124
AST 102
AST 113
AST 141
CST 105

**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 curriculum is designed to prepare individuals for administrative assistant employment opportunities.

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

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**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 requisite. Requisites 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 curriculum is designed to prepare students for an entry-level position in an industrial or manufacturing setting. It combines the concepts and practices of mechanical and electrical processes in order to manipulate motorized, hydraulic and pneumatic machines to perform complex automated functions.

**Program Objectives:** Employment opportunities include entry-level positions as mechanical, maintenance, electrical, quality, computer, process, and manufacturing technicians.

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

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** Students may continue into the Advanced Technology in Mechatronics career studies certificate or Technical Studies AAS Mechatronics specialization degree.

### 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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

### Suggested Schedule

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

**CAREER STUDIES CERTIFICATE (221-706-90)**

# Advanced Technology in Mechatronics

**Purpose:** This curriculum is designed to challenge the student with hands-on instruction in mechanical, electrical and computer systems in preparation for the Siemens Mechatronics Systems Certification. A Siemens Certified Mechatronic Systems Associate will function as a highly skilled technician who can work with modules and components in complex mechatronic systems as well as be able to assess and analyze the system as a whole. A certified Associate can manage, investigate, repair and troubleshoot mechatronic systems, with the aim of operational and cost efficiency, and process control.

**Program Objectives:** Graduates who successfully complete the Siemens Mechatronics Systems Certification may obtain a job as a certified mechatronics technician; designing, installing and commissioning systems, including instrumentation, controls and automation.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** Graduates may continue their studies in the AAS Technical Studies - Mechatronics Technology specialization.

**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 Systems I | 4 |
| MEC 162 | Applied Hydraulics & Pneumatics | 3 |
| **Total Minimum Credits for Certificate** | | **29** |

** This course has a requisite. Requisites 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 must graduate from high school before officially declaring and/or graduating from this program.*

CAREER STUDIES CERTIFICATE (221-903-10)

# Air Conditioning and Refrigeration

**Purpose:** This curriculum 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.

**Program Objectives:** Employment opportunities include air conditioning/refrigeration system installer, air conditioning system service technician, and air conditioning sales.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** 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.

## 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 |
| AIR 238 | Advanced Troubleshooting and Services | 3 |
| BLD 159 | Mechanical Code and Certification Preparation | 3 |
| ELE 133* | Practical Electricity I | 3 |
| WEL 120 | Introduction to Welding | 3 |
| **Total Minimum Credits for Certificate** | | **24** |

** This course has a requisite. Requisites 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 | AIR 238 |
| ELE 133 | |

| 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.

**Program Objectives:** Graduates may seek employment as an architectural or civil engineering technology aide.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** Students must possess computer literacy in order to be successful in this program. All of the courses offered through this program may be applied towards the AAS degree in Architectural/Civil Technology.

| 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 128* | Geometric Dimensioning and Tolerancing | 3 |
| DRF 201-202* | Computer Aided Drafting and Design I-II | 6 |
| MTH 115* | Technical Mathematics I | 3 |
| **Total Minimum Credits for Certificate** | | **24** |

** This course has a requisite. Requisites 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 128 |
| MTH 115 | DRF 202 |
| **Second Year** | **Spring** |
| **Fall** | CIV 135 |
| ARC 221 | CIV 171 |

ASSOCIATE OF APPLIED SCIENCE (895)

# Architectural/Civil Engineering Technology

**Purpose:** This curriculum is designed to prepare qualified technicians for career opportunities in architecture and civil engineering technology.

A specialization is also available in geographic information systems.

**Program 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 requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Architectural/Civil Engineering Major

### 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 | Intro to Physical Geography | 3 |
| HLT/PED[1] | Health or Physical Education | 1 |
| MTH 115-116* | Technical Mathematics I-II | 6 |
| PHY 201 | General College Physics I | 4 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 3 |
| E[2] | Social Science Elective (List B) | 3 |

### Architectural/Civil Engineering and Related Courses

| | | |
|---|---|---|
| ARC 100 | Introduction to Architecture | 3 |
| ARC 133 | Construction Method & Procedures I | 3 |
| ARC 221* | Architectural CAD Applica Software I | 3 |
| CIV 135 | Construction Manage & Estimating | 3 |
| CIV 171* | Surveying I | 3 |
| DRF 128* | Geometric Dimensioning and Tolerancing | 3 |
| DRF 201-202* | Computer Aided Drafting Design I-II | 6 |
| EGR 216* | Computer Methods in Engin & Tech | 3 |
| GIS 200-201* | Geographical Information Systems 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** | | **66** |

*[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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

### Suggested Schedule

| First Year | |
|---|---|
| **Fall** | **Spring** |
| ARC 100 | ARC 133 |
| DRF 201 | DRF 202 |
| EGR 216 | DRF 128 |
| GEO 200 | ENG 111 |
| MTH 115 | MEC 131 |
| SDV 100 | MTH 116 |

| Second Year | |
|---|---|
| **Fall** | **Spring** |
| ARC 221 | CIV 135 |
| GIS 200 | CIV 171 |
| HLT/PED | CST 100 |
| MEC 132 | GIS 201 |
| PHY 201 | Humanities/Fine Arts |
| | Social Science Elective |

ASSOCIATE OF APPLIED SCIENCE (895)

# Architectural/Civil Engineering Technology cont'd

**Purpose:** This curriculum is designed to prepare qualified technicians for career opportunities in the geospatial areas of architectural and civil engineering.

**Program Objectives:** The geospatial engineering 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), Western Virginia Water Authority, and the Department of Environmental Quality (DEQ).

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Geographic Information Systems Specialization

### 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 | Introduction to Physical Geography | 3 |
| HLT/PED[1] | Health or Physical Education | 2 |
| MTH 115-116* | Technical Mathematics I-II | 6 |
| PHY 201 | General College Physics I | 4 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 3 |
| E[2] | Social Science Elective (List B) | 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] 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

### 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 100 | 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 |

CAREER STUDIES CERTIFICATE (221-909-01)

# Automotive Analysis and Repair

**Purpose:** This curriculum is designed to train graduates in automotive systems theory, service, and repair.

**Program Objectives:** Employment opportunities include automotive technician, parts sales and service representative, repair service salesperson, repair service writer, repair technician, tune-up specialist.

This program is competency based to include specific classroom and shop exercises to prepare a student for ASE certification.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

### Curriculum and Other Requirements
### Automotive Analysis and Related Courses

| | | |
|---|---|---|
| AUT 126* | Automotive Fuel and Ignition Systems (Engine Performance) | 5 |
| AUT 241 | Automotive Electrical Skills | 4 |
| AUT 265[1] | Automotive Braking Systems | 4 |
| AUT 266[1] | Automotive Alignment | 4 |
| **Total Minimum Credits for Certificate** | | **17** |

### Suggested Schedule

**First Year**
**Fall**
AUT 241
AUT 265

**Spring**
AUT 126

**Second Year**
**Fall**
AUT 265

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

*[1] AUT 265 and 266 are taught in alternate years.*

***Note:*** *Dual-enrolled high school students must graduate from high school before officially declaring and/or graduating from this program.*

ASSOCIATE OF SCIENCE DEGREE (213)

# Business Administration

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution to complete a baccalaureate degree in a business-related field.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8, and 9.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

### 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[2] | Health or Physical Education | 2 |
| ITE 115 | Intro Computer Applica & Concepts | 3 |
| MTH 163* | Pre-Calculus I | 3 |
| MTH 241*-242[1] | 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 (List A) | 8 |
| E[1] | Transfer Elective (List B) | 3 |
| E[1] | Humanities/Fine Arts Elective (List B) | 3 |

### Business Administration Courses

| | | |
|---|---|---|
| ACC 211-212* | Principles of Accounting I-II | 8 |
| **Total Minimum Credits for Degree** | | **61** |

*[1] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[2] 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 requisite. Requisites 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
MTH 163
SDV 100
Science Elective

**Spring**
ENG 112
MTH 271
Science Elective
Transfer Elective or
Humanities/Fine Arts

**Second Year**

**Fall**
ACC 211
ECO 202
ENG 241
HLT/PED
ITE 115
MTH 241

**Spring**
ACC 212
CST 100
ECO 201
MTH 242
Transfer Elective or
Humanities/Fine Arts

CAREER STUDIES CERTIFICATE (221-212-04)

# Business Industrial Supervision

**Purpose:** The curriculum 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.

**Program Objectives:** Employment opportunities include entry-level supervisory positions including: manager, supervisor, foreman, team leader, or management trainee. Additionally, this program is designed to serve those who may be seeking a promotion to either an entry level management position or higher levels of management responsibility.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

It is strongly recommended that developmental education requirements be completed as soon as possible.

## 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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

### Suggested Schedule

**First Year**

**Fall**
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:** This curriculum is designed to teach students the skills needed to design, build, and maintain small to medium-size networks.

**Program Objectives:** This program provides students 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. Employment opportunities include telecommunications technician, LAN/ WAN technician/ cable installer, technical representative/salesperson.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Program Notes:** Students must possess computer literacy in order to be successful in this program.

**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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**Suggested Schedule**

**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:** This curriculum is designed 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.

**Program Objectives:** Employment opportunities include advertising design, printing, illustration, photography, digital illustration, digital prepress, graphic design, and Web page design.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** A satisfactory aptitude for drawing is desirable. Students must possess computer literacy in order to be successful in this program.

Students will prepare portfolios for their job search.

Due to prerequisite requirements, ART classes should be taken in a **specific** order. Students should work with a counselor or faculty advisor to determine their course plan if the suggested schedule is not followed.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Curriculum and Other Requirements

| General Education Core Courses | | Credits |
|---|---|---|
| ART 250 | History of Design | 3 |
| CST 105 | Oral Communication (or CST 100) | 3 |
| ENG 111* | College Composition I | 3 |
| HLT/PED[1] | Health or Physical Education | 2 |
| MTH 120* | Introduction to Mathematics | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Social Science Elective (List A) | 3 |

| Communication Design and Related Courses | | |
|---|---|---|
| ART 121-122* | Drawing I-II | 6 |
| ART 131-132* | Fundamentals of Design I-II | 6 |
| ART 140* | Introduction to Graphic Skills | 3 |
| ART 141* | Typography I | 3 |
| ART 221* | Drawing III (Figure Drawing) | 3 |
| ART 243* | Watercolor I | 3 |
| ART 247* | Painting Technique for Illustrators | 3 |
| ART 251-252* | Communication Design I-II | 6 |
| ART 282* | Graphic Techniques | 3 |
| ART 283* | Computer Graphics I (PhotoShop®) | 3 |
| ART 284* | Computer Graphics II (Digital Illus) | 3 |
| ART 287* | Portfolio and Resume Preparation | 3 |
| PHT 101 | Photography I | 3 |
| **Total Minimum Credits for Degree** | | **66** |

*[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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

** This course has a requisite. Requisites 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 140 | ART 141 | Social Science |
| ART 250 | ENG 111 | |
| SDV 100 | 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 |

**CAREER STUDIES CERTIFICATE (221-729-95)**

# Computer Aided Drafting Career Exploration

**Purpose:** This curriculum is designed to introduce 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 or Architectural Desktop. This program also provides an excellent foundation for continued study in engineering technology programs.

**Program Objectives:** Employment opportunities include CAD drafter.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** Students must possess computer literacy in order to be successful in this program.

**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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**Suggested Schedule**

**First Year**

| Fall | Spring |
|---|---|
| DRF 201 | DRF 202 |

**Second Year**

**Fall**

DRF 203

***Note:*** *Dual-enrolled high school students must graduate from high school before officially declaring and/or graduating from this program.*

**ASSOCIATE OF APPLIED SCIENCE DEGREE (242)**

# Culinary Arts

**Purpose:** This curriculum is designed to provide students with the knowledge and basic skills required to be successful in the culinary industry.

**Program Objectives:** Graduates satisfy the American Culinary Federation eligibility requirements to test for both the Certified Culinarian (CC) and Certified Pastry Culinarian (CPC) designations.

This curriculum prepares 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 requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Requirements:** 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. Be 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 accommodations will be considered for admission along with other qualified applicants.

**Program Notes:** Dual enrollment opportunities with secondary school programs in the college's service area are available.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

**ASSOCIATE OF APPLIED SCIENCE DEGREE (242)**

# Culinary Arts cont'd

### Curriculum and Other Requirements

**General Education Core Courses** **Credits**

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 (List A) ..... 3
E[1] ..... Social Science Elective (List A) ..... 3

### Culinary Arts and Related Courses

ACC 110 ..... Intro to Computerized Accounting ..... 1
HRI 106 ..... Principles of Culinary Arts I ..... 3
HRI 107* ..... Principles of Culinary Arts II ..... 3
HRI 119[3] ..... 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 251* ..... Food and Beverage Cost Control ..... 3
HRI 290[2,*] ..... Coord Internship in Culinary Arts ..... 2
SDV 106[2] ..... Preparation for Employment ..... 1

**Total Minimum Credits for Degree ..... 65**

*[1] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[2] HRI 290 and SDV 106 must be taken during the same semester.*

*[3] Health and wellness are emphasized throughout the culinary program, but specifically in HRI 119 Application of Nutrition for Food Service.*

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

### Suggested Schedule

**First Year**

**Fall**
ENG 111
HRI 106
HRI 154
HRI 158
MTH 120
SDV 100

**Spring**
HRI 128
HRI 145
HRI 215
HRI 219
Humanities/Fine Arts

**Summer**
ITE 115
Social Science

**Second Year**

**Fall**
HRI 107
HRI 119
HRI 207
HRI 218
HRI 220

**Spring**
ACC 110
BUS 165
HRI 206
HRI 251
HRI 290
SDV 106

**CAREER STUDIES CERTIFICATE (221-242-03)**

# Culinary Arts

**Purpose:** This curriculum is designed to provide students with the basic skills necessary to obtain an entry-level position in the culinary industry.

**Program Objectives:** This 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 requirements for admission to credit-level coursework established by 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.

**Program Notes:** Dual enrollment opportunities with secondary school programs in the college's service area are available.

**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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**Suggested Schedule**

**First Year**

| Fall | Spring |
|---|---|
| HRI 106 | HRI 145 |
| HRI 154 | HRI 219 |
| HRI 158 | |

**Second Year**

| Fall | Spring |
|---|---|
| HRI 119 | HRI 128 |
| HRI 207 | HRI 206 |

**CAREER STUDIES CERTIFICATE (221-242-05)**

# Culinary Arts: Baking and Pastry

**Purpose:** This curriculum is designed to provide students with the basic skills necessary to obtain entry-level baker positions.

**Program Objectives:** This 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 requirements for admission to credit-level coursework established by 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.

**Program Notes:** Dual enrollment opportunities with secondary school programs in the college's service area are available.

**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 requisite. Requisites 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 requisite 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).

**Program Objectives:** A dental hygienist may practice in 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; or health maintenance organizations/ managed care organizations.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9.

**Admission Requirements**: Applicants must meet the requirements for admission to credit-level coursework established by the college.

Applicants to the Dental Hygiene program must hold a high school diploma or GED and meet the developmental requirements listed above. Additionally, applicants must complete the prerequisites listed below with a grade of "C" or higher by the end of the spring semester prior to beginning the program:

1. One unit of high school or college biology
2. One unit of high school or college chemistry
3. Completion of BIO 141-142, Anatomy and Physiology I-II

The applicant's high school or college (if applicable) cumulative grade point average (GPA) must be at least 2.5. College GPA is based on at least 12 credit hours in a 12-month time frame. The GPA is determined at the end of the 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.

**Admission Procedures:** 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. Admission to the VWCC-Lord Fairfax joint venture distance program site in Middletown is offered 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. Students interested in this program should consult the VWCC Dental Hygiene Program page, VWCC policy on Infectious Disease Status, Essential Dental Hygiene Functions, Clinical Environment, Student Responsibilities, Student Retention and Readmission Policy. The page can be accessed through the VWCC website (*http://www.virginiawestern.edu/academics/programs/aasdegrees.php*).

**Program Notes:** This 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.

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.

Students who have begun a dental hygiene program at an accredited institution other than Virginia Western may be considered for admission by transfer if there is class availability and if certain conditions are met. Student interested in transfer should consult the VWCC Dental Hygiene program page for transfer criteria.

ASSOCIATE OF APPLIED SCIENCE DEGREE (118)

# Dental Hygiene cont'd

## Curriculum and Other Requirements

| General Education Core Courses | | Credits |
|---|---|---|
| BIO 141-142* | Human Anatomy & Physiology I-II | 8 |
| ENG 111* | College Composition I | 3 |
| PSY 230 | Developmental Psychology | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 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 | Practical Materials for Dental Hygiene | 2 |
| DNH 216 | Pharmacology | 2 |
| DNH 226-227* | 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 |
| NAS 185* | Microbiology | 4 |
| **Total Minimum Credits for Degree** | | **70** |

*[1] Health and wellness are emphasized throughout the dental hygiene program, but specifically in DNH 150 Nutrition.*

*[2] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

** This course has a requisite. Requisites 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 | DNH 235 |
| DNH 130 | DNH 216 | ENG 111 |
| DNH 141 | NAS 185 | |
| SDV 100 | | |

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

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

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.

**Program Objectives:** Employment opportunities include positions in independent childcare centers and kindergartens, family day care homes, preschool programs, 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 requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** Admission to CHD 165 is selective and must be approved by the program head. Eligibility is based on the following criteria: a 2.0 minimum GPA, completion of course prerequisites, any relevant internship site requirements and current documentation of a negative tuberculosis screening.

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.

Each student is responsible for transportation to and from field sites used for laboratory experience.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the Early Childhood program head for details.

**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 |
| HLT 105[1] | Cardiopulmonary Resuscitation (or HLT 106) | 1 |
| 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[2] | Sociology of the Family [or Social Science Elective (List B)] | 3 |
| E[2] | Humanities/Fine Arts Elective (List A) | 3 |

**Early Childhood Development and Related Courses**

| | | |
|---|---|---|
| CHD 118 | Language Arts for Young Children | 3 |
| CHD 119* | 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* | 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* | Adv Observation & Participation in Early Childhood/Primary Settings | 3 |
| CHD 270 | Administration of Early Childhood Programs | 3 |
| CHD 298* | Project in Portfolio Development | 1 |
| HLT 135 | Child, Health and Nutrition (or EDU 235) | 3 |

**Total Minimum Credits for Degree ..... 66**

[1] *The requirement for first aid training may be met by a Red Cross Certificate in basic first aid and infant/child and adult CPR.*

[2] *Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

**Suggested Schedule**

**First Year**

| Fall | Spring |
|---|---|
| CHD 120 | CHD 166 |
| CHD 145 | CHD 215 |
| CHD 210 | CHD 216 |
| ENG 111 | ENG 112 |
| PSY 235 | HLT 105/106 |
| SDV 100 | HLT 135 |

**Second Year**

| Fall | Spring |
|---|---|
| CHD 118 | CHD 119 |
| CHD 146 | CHD 205 |
| CHD 165 | CHD 265 |
| CHD 270 | CHD 298 |
| MTH 151 | CST 100 |
| Humanities/Fine Arts | SOC 215 |

CAREER STUDIES CERTIFICATE (221-636-04)

# Early Childhood Development

**Purpose:** This curriculum 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.

**Program Objectives:** 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.

Employment opportunities include positions in childcare centers, family day care homes, preschool programs, centers for children with special needs, residential childcare facilities and industry associated centers.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Program Notes:** All required courses also apply towards the AAS degree in Early Childhood Development.

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** |

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

### Suggested Schedule

| Fall | Spring |
|---|---|
| CHD 120 | CHD 205 |
| CHD 145 | HLT 135 |
| CHD 165 | SDV 100 |

**ASSOCIATE OF APPLIED SCIENCE DEGREE (731)**

# Electrical Engineering Technology

**Purpose:** This curriculum is designed to provide graduates with 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.

**Program Objectives:** Employment opportunities include positions as electrical engineering technicians who assist in identifying and solving problems with electrical equipment and systems found in industrial or commercial plants and laboratories. Job tasks may include evaluating performance of developmental parts; electrical component assembly; calibrating, maintaining and repair of electrical instruments; preparing technical reports; and analyzing test information to resolve design-related problems.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Curriculum and Other Requirements

**General Education Core Courses** **Credits**

| | | |
|---|---|---|
| ENG 111* | College Composition I | 3 |
| HLT/PED[3] | Health or Physical Education | 2 |
| MTH 115* | Technical Mathematics I | 3 |
| PHY 201* | General College Physics I | 4 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[1] | Humanities/Fine Arts Elective (List A) | 3 |
| E[1] | Social Science Elective (List A) | 3 |

**Electrical Engineering Technology & related Courses**

| | | |
|---|---|---|
| EGR 216* | Computer Methods in Engineering and Technology | 3 |
| ELE 239* | Programmable Controllers | 3 |
| ELE 298 | Seminar & Project in Electrical Engineer. | 3 |
| ETR 111 | Electronic Mathematics | 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[4] | ELE Elective | 3 |
| E[2] | Technical Electives | 3 |
| **Total Minimum Credits for Degree** | | **65** |

*[1] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[2] Students should choose from DRF 201, GIS 200, PHY 202, or TEL 250.*

*[3] 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.*

*[4] Students should enroll in ELE 293: Studies in Electrical Power and Control Systems to meet this requirement.*

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

### Suggested Schedule

| First Year | Spring |
|---|---|
| **Fall** | EGR 216 |
| ENG 111 | ETR 111 |
| ETR 113 | ETR 114 |
| MTH 115 | ETR 280 |
| SDV 100 | TEL 151 |
| TEL 150 | |

| Second Year | Spring |
|---|---|
| **Fall** | ELE 239 |
| ETR 250 | ELE 298 |
| HLT/PED | ETR 285 |
| PHY 201 | Humanities/Fine Arts |
| ELE Elective | Technical Elective |
| Social Science Elective | |

CAREER STUDIES CERTIFICATE (221-706-01)

# Electrical Wiring

**Purpose:** This curriculum is designed to provide students with the basic skills necessary to obtain an entry-level electrician position.

**Program Objectives:** Employment opportunities include plant electrician, electrician, estimator and entrance positions in the electrical construction and maintenance field as an apprentice.

This certificate meets the 240 clock hours of formal training required to take the Journeyman Electrician Exam. In addition to successful completion of the Journeyman Exam, four years of practical experience are required to become a Licensed Journeyman.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**Suggested Schedule**

| Fall | Spring |
|---|---|
| BLD 111 | ELE 134 |
| ELE 133 | ELE 138 |
| ELE 110 | SAF 127 |

CAREER STUDIES CERTIFICATE (221-820-02)

# Energy Management Systems Introduction

**Purpose:** This curriculum is designed to introduce students to the fundamentals and safety requirements for alternative energy systems.

**Program Objectives:** Entry-level employment opportunities include alternative energy installer and technician assistant.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** All courses in this program are included in the EMS Technician career studies certificate program.

## 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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

## Suggested Schedule

**Fall**
ELE 130
ELE 176
SAF 127

CAREER STUDIES CERTIFICATE (221-820-03)

# Energy Management Systems Technician

**Purpose:** This curriculum 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 alternative energy systems. The certificate is designed to enhance the awareness of different designs, layouts, wirings, and installations for alternative energy systems.

**Program Objectives:** Employment opportunities include positions as an alternative energy technician and installation assistant.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

## Curriculum and Other Requirements

### Energy Management and Other Related Courses

| | | Credits |
|---|---|---|
| BLD 110 | Introduction to Construction | 3 |
| BLD 111 | Blueprint Reading and Building Code | 3 |
| ELE 130* | Electricity | 4 |
| ELE 176* | Introduction to Alternative Energy | 3 |
| ENE 100 * | Conventional & Alternative Energy Apps. | 4 |
| SAF 127 | Industrial Safety | 2 |
| **Total Minimum Credits for Certificate** | | **19** |

** This course has a requisite. Requisites for all courses are listed in the course description section at the back 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:** This curriculum is designed to prepare students for managing, implementing and commissioning energy systems in today's society of rapidly changing, energy related industries and residential structures. Energy management students study conventional energy generation and distribution, as well as alternative energy with wind, solar (PV), solar (thermal), geothermal, energy efficiency, and energy production systems to develop an understanding of the challenges and opportunities in developing a renewable energy economy.

**Program Objectives:** Students will gain the knowledge to obtain entry level positions as alternative energy system installers and 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 requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**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 | Introduction to Construction | 3 |
| BLD 111 | Blueprint Reading and Building Code | 3 |
| MEC 155 | Mechanisms | 2 |
| MTH 115* | Technical Mathematics | 3 |
| E[1] | Energy Managemt Tech Concentration | 7 |
| **Total Minimum Credits for Certificate** | | **27** |

*[1] An Energy Management Concentration must be selected from the following options:*

*• Photovoltaic Installer must take*
*- ELE 147 Electrical & Power Systems*
*- ELE 177 Photovoltaic Energy Systems*
*-or-*
*• Wind Energy Installer must take*
*- ELE 147 Electrical & Power Systems*
*- ELE 178 Wind Turbine Technology*
*-or-*
*• Solar and Geo Thermal Installer must take*
*- ENE 105 Solar Thermal Active & Passive Technology*
*- MEC 205 Piping and Auxiliary Systems*

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

**Suggested Schedule**

**First Year**

**Fall**
ELE 130
ELE 176
MTH 115
SAF 127

**Spring**
BLD 110
BLD 111
MEC 155

**Second Year**

**Fall**
Energy Management Elective
Energy Management Elective

ASSOCIATE OF SCIENCE DEGREE (831)

# Engineering

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution 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.

A specialization is also available in computer science.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9. Additionally, students who do not demonstrate mastery in pre-calculus with trigonometry on the placement test will be required to complete MTH 166 prior to enrolling in MTH 175.

It is strongly recommended that developmental education requirements be completed as soon as possible.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

## Engineering Major

### Curriculum and Other Requirements

### General Education Core Courses

| | | Credits |
|---|---|---|
| CHM 111* | College Chemistry I | 4 |
| 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 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 6 |
| E[2] | Social Science Elective (List A) | 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[3] | Engineering/Science Elective | 6 |
| **Total Minimum Credits for Degree** | | **66** |

*[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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[3] The following are suggested Engineering/Science electives for specific engineering majors: Mechanical Engineering: EGR 245/246, Civil Engineering: EGR 206/246, Electrical Engineering: EGR 206/251/255, MTH 285, or MTH 287, Chemical Engineering: CHM 112/EGR 246 or CHM112/ 241/245.*

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

## Suggested Schedule

| First Year | Spring |
|---|---|
| **Fall** | EGR 120 |
| CHM 111 | EGR 126 |
| EGR 124 | EGR 140 |
| ENG 111 | ENG 112 |
| HLT/PED | MTH 176 |
| MTH 175 | MTH 178 |
| MTH 177 | |
| SDV 100 | |

| Second Year | Spring |
|---|---|
| **Fall** | MTH 291 |
| MTH 277 | PHY 242 |
| PHY 241 | EGR/Science Elective |
| EGR/Science Elective | Humanities/Fine Arts |
| Humanities/Fine Arts | Social Science Elective |
| Social Science Elective | |

ASSOCIATE OF SCIENCE DEGREE (831)

# Engineering cont'd

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution to complete a baccalaureate degree in computer science or information technology.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9. Additionally, students who do not demonstrate mastery in pre-calculus with trigonometry on the placement test will be required to complete MTH 166 prior to enrolling in MTH 175.

It is strongly recommended that developmental education requirements be completed as soon as possible.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

### Computer Science Specialization (01)

### Curriculum and Other Requirements

| General Education Core Courses | | Credits |
|---|---|---|
| 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 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 6 |
| E[2] | Social Science Elective (List A) | 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[3] | Engineering/Science Elective | 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[3] 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 requisite. Requisites for all courses are list the course description section at the back of the catalog.*

### Suggested Schedule

| First Year/Fall | Spring | Second Year/Fall | Spring |
|---|---|---|---|
| CSC 201 | CSC 202 | CSC 205 | HLT/PED |
| EGR 124 | EGR 120 | MTH 277 | PHY 242 |
| ENG 111 | ENG 112 | PHY 241 | Humanities/Fine Arts |
| MTH 175 | MTH 176 | Humanities/Fine Arts | Engineering Elective |
| MTH 177 | MTH 178 | Social Science Elective | Social Science Elective |
| SDV 100 | MTH 287 | | |

**CAREER STUDIES CERTIFICATE (221-831-01)**

# Engineering

**Purpose:** This curriculum is designed for persons who want to explore engineering as a potential major.

**Program Objectives:** 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 requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9. Additionally, students who do not demonstrate mastery in pre-calculus with trigonometry on the placement test will be required to complete MTH 166 prior to enrolling in MTH 175.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**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 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |

**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 |
| **Total Minimum Credits for Degree** | | **29** |

** This course has a requisite. 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 100 |

| **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 curriculum is designed for the student interested in exercise science and/or the fitness industry.

**Program Objectives:** 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).

Employment opportunities include 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 personal trainers.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1 and 2.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** The curriculum can be completed in three semesters or with planning in two semesters and a summer.

## 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 |

### Exercise Science and Related Courses

| | | |
|---|---|---|
| HIM 249* | Supervision & Management Practices | 3 |
| HLT 100[1] | First Aid, CPR, AED | 3 |
| HLT 116 | Introduction to Personal Wellness | 2 |
| HLT 125[2] | Anatomy and Physiology for Exercise Science | 3 |
| HLT 138 | Principles of Nutrition | 2 |
| HLT 206[2]* | Exercise Science | 3 |
| HLT 208* | Fitness & Exercise Training (ACE Prep) | 3 |
| HLT 217 | Exercise and Nutrition for Behavioral Change | 3 |
| HLT 240 | Consumer Health | 3 |
| HLT 290[3]* | Coordinated Internship | 3 |
| PED 105 | Aerobic Dance I (or PED 106) | 1 |
| PED 107 | Exercise and Nutrition | 2 |
| PED 109 | Yoga | 1 |
| PED 111 | Weight Training | 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 HLT 125 prior to taking HLT 206.*

[3] *Internship hours will not exceed 15 hours per week.*

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

### Suggested Schedule

| First Year | |
|---|---|
| **Fall** | **Spring** |
| ENG 111 | HIM 249 |
| HLT 116 | HLT 100 |
| HLT 125 | HLT 138 |
| HLT 217 | HLT 206 |
| PED 105 | ITE 115 |
| PED 107 | PED 111 |
| PED 109 | |

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.

**Program Objective:** To prepare students for transfer to a four-year college or university.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

### Suggested Schedule

| Fall | Spring |
|---|---|
| ENG 111 | ENG 112 |
| HIS 121 | HIS 122 |
| MTH 151 | Humanities/Fine Arts |
| SDV 100 | Science Elective |
| Humanities/Fine Arts | Social Science Elective |
| Science Elective | |

### Curriculum and Other Requirements

**General Education Core Courses** — **Credits**

| | | |
|---|---|---|
| ENG 111-112* | College Composition I-II | 6 |
| HIS 121-122 | U. S. History I (or HIS 111-112) | 6 |
| MTH 151* | Mathematics for the Liberal Arts I (or MTH 163* or MTH 157*) | 3 |
| SDV 100 | College Success Skills | 1 |
| E[1] | Humanities/Fine Arts Elective (List A) | 6 |
| E[1] | Science Sequence (List A) | 8 |
| E[1] | Social Science Elective (List A) | 3 |
| **Total Minimum Credits for Certificate** | | **33** |

*[1] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

ASSOCIATE OF SCIENCE (699)

# General Studies

**Purpose:** This curriculum is designed to satisfy the general education component of a baccalaureate degree for students who intend to transfer to a four-year institution.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

**Curriculum and Other Requirements**

| General Education Core Courses | | Credits |
|---|---|---|
| CST 100 | Principles of Public Speaking (or CST 105) | 3 |
| ENG 111-112* | College Composition I-II | 6 |
| ENG 241-242* | Survey of American Literature I-II (or ENG 243-244*) | 6 |
| HIS 111-112 | History of World Civilization I-II (or HIS 121-122) | 6 |
| HLT/PED[2] | Health or Physical Education | 3 |
| ITE 115 | Intro Computer Applications and Concepts | 3 |
| MTH 151* | Mathematics for the Liberal Arts I (or MTH 163*) | 3 |
| MTH 152* | 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 (List B) | 6 |
| E[1] | Science Sequence (List A) | 8 |
| E[1] | Transfer Electives (List B) | 6 |
| E[1] | Humanities/Fine Arts Electives (List B) | 6 |
| **Total Minimum Credits for Degree** | | **60** |

*[1] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[2] 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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**Suggested Schedule**

| First Year | Spring | Second Year | Spring |
|---|---|---|---|
| **Fall** | ENG 112 | **Fall** | ENG 242 |
| ENG 111 | MTH 152 | CST 100 | HIS 112 |
| ITE 115 | Social Science Elective | ENG 241 | HLT/PED |
| MTH 151 | Science Elective | HIS 111 | Humanities/Fine Arts |
| SDV 100 | Transfer Elective | Humanities/Fine Arts | |
| Social Science Elective | | Transfer Elective | |
| Science 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.

**Program Objectives:** Graduates may seek employment as GIS operators.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** The use of current ArcGIS® software is emphasized along with exposure to AutoCAD®.

Students must possess computer literacy in order to be successful in this program.

## Curriculum and Other Requirements

### General Education Core Courses

| | | Credits |
|---|---|---|
| ENG 111* | College Composition I | 3 |
| MTH 115 | Technical Mathematics | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |

### 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** |

** This course has a requisite. 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 |
| MTH 115 | |
| SDV 100 | |

| 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). This program also provides an excellent foundation for continued study of GIS.

**Program Objectives:** Graduates may seek employment as GIS data editors.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** The use of current ArcGIS® software is emphasized along with exposure to AutoCAD®.

Students must possess computer literacy in order to be successful in this program.

**Curriculum and Other Requirements**

| GIS and Related Courses | | Credits |
|---|---|---|
| DRF 201* | Computer Aided Drafting and Design I | 3 |
| ITE 115 | Intro to Computer Applications and Concepts (or EGR 216) | 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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**Suggested Schedule**

| Summer | Fall |
|---|---|
| DRF 201 | ITE 115 |
| | GIS 200 |

**Spring**
GEO 200

CERTIFICATE (285)

# HIM: Electronic Medical Records Management

**Purpose:** This curriculum is designed to prepare graduates to perform essential medical office management functions.

**Program 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 requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

It is strongly recommended that developmental education requirements be completed as soon as possible.

## Curriculum and Other Requirements

### General Education Core Courses

| | | Credits |
|---|---|---|
| ENG 111* | College Composition I | 3 |
| PSY 120 | Human Relations | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |

### Electronic Medical 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 requisite. Requisites 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:** This curriculum is designed to provide the technical knowledge and practical experience needed for employment as a health records coding technician.

Health Records Coding 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.

**Program 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 requirements for admission to credit-level coursework established by the college.

**Program Notes:** Students are strongly encouraged to sit for the CPC exam after completing HIM 254.

## 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* | Health Records Coding | 4 |
| HIM 254* | Advanced Coding and Reimbursements | 4 |
| HIM 290[1] | Coordinated Internship | 3 |
| HLT 143 | Medical Terminology I | 3 |
| HLT 144* | Medical Terminology II | 3 |
| **Total Credits for Certificate** | | **28** |

*[1] Must be taken in the final term of the program or with instructor's permission.*

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

### Suggested Schedule

**First Year**

**Fall**
AST 101
HIM 226
HLT 143

**Spring**
HLT 144
HIM 253
PSY 120

**Second Year**

**Fall**
AST 243
HIM 254

**Spring**
HIM 290

**CAREER STUDIES CERTIFICATE (221-285-87)**

# HIM: Medical Office Specialist

**Purpose:** This curriculum is designed to prepare graduates 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.

**Program 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 requirements for admission to credit-level coursework established by the college.

**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 requisite. Requisites 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

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.

**Program Objective:** Employment opportunities include assistant growers, wholesale and retail sales-persons, and production technicians.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Curriculum and Other Requirements**

| Greenhouse Management Courses | | Credits |
|---|---|---|
| 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 Horticultural 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 design businesses and to upgrade the skills of those currently employed in the industry.

**Program Objectives:** Employment opportunities include landscape designers and landscape technicians.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by 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 requisite. Requisites 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 (spring only) |

CAREER STUDIES CERTIFICATE (221-335-20)

# Horticulture: Viticulture

**Purpose:** This curriculum is designed to prepare students for employment in the grape cultivation industry and to upgrade the skills of those currently employed in viticulture.

**Program Objective:** Employment opportunities include positions in vineyards and related areas of sales and services.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by 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:** This curriculum prepares students for entry-level positions in the helping fields. Through courses and a field placement in agencies, students develop skills in working with people with physical and psychiatric disabilities, adolescents, the aged, the substance abuser, and the child or adult in crisis.

**Program Objectives:** Employment opportunities for graduates in Human Services include staff positions in hospitals, mental health clinics, residential facilities and community service agencies. Graduates may transfer to a four-year college or university for bachelor degrees in fields such as social work, psychology, and gerontology.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** MEN 101 is only offered in the fall semester and is a prerequisite for many classes. Students entering the Human Services 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, faculty recommendations, expected graduation date, and any relevant internship site requirements. Internship students that do not meet the professional standards of the Human Services Program, and/or the participating clinical agency may be withdrawn from the internship.

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| BIO 101-102* | 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 | 1 |
| ITE 115 | Intro Computer Applications and Concepts | 3 |
| MTH 157[1,*] | Elementary Statistics | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[3] | Humanities/Fine Arts Elective (List A) | 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* | Group Process I | 3 |
| MEN 225 | Counseling Therapy | 3 |
| MEN 290* | Coordinated Internship | 5 |
| PSY 200 | Principles of Psychology | 3 |
| PSY 215 | Abnormal Psychology | 3 |
| PSY 220 | Intro to Behavior Modification | 3 |
| SOC 200 | Principles of Sociology | 3 |
| E[5] | Human Services Elective | 3 |
| E[4] | Psychology Elective | 3 |
| **Total Minimum Credits for Degree** | | **66** |

*[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] 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[4] Select one of the following: PSY 230 or PSY 235.*

*[5] Select one of the following: HMS 236, HMS 251 or HMS 280.*

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

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the Human Services program head for details.

ASSOCIATE OF APPLIED SCIENCE DEGREE (480)

# Human Services cont'd

**Suggested Schedule**

**First Year**
**Fall**
ENG 111
MEN 100 (fall only)
MEN 101 (fall only)
PSY 200
PSY 220 (fall only)
SDV 100

**Spring**
ENG 112
HLT/PED
MEN 102 (spring only)
MEN 225 (spring only)
PSY 215
Psychology Elective

**Second Year**
**Fall**
BIO 101
MEN 221 (fall only)
MTH 157
SOC 200
Humanities/Fine Arts

**Spring**
BIO 102
CST 100
ITE 115
MEN 290
Human Services 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.

**Program Objectives:** Employment opportunities include Network Administrator, Web Programmer, Database Developer or GIS Developer.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs (ACBSP).

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.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| CST 100 | Public Speaking | 3 |
| ECO 120 | Survey of Economics (or ECO 201/202) | 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* | Introduction to Mathematics | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 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[3] | Info System Tech Concentration | 21 |
| **Total Minimum Credits for Degree** | | **66** |

*[1] 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.*

*[2] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[3] An IT Concentration of must be selected from the following four options:*

- *Network & Database Administrator must take ITD 250*, ITN 110*, ITN 111*, ITN 112*, ITN 113*, TEL 250*
- *Web Programmer must take ITD 112*, ITD 120*, ITD 210*, ITD 212*, ITD 220*, ITP 140 , ITP 225**
- *Database and Program Developer must take ITD 120*, ITD 250*, ITP 140*, (ITP 136*, 236*, 244*) or (ITP 120*, 220*, 246*)*
- *GIS Developer must take GIS 200*, GIS 201*, GIS 205, GIS 210*, ITP 136*, ITP 136L*, ITP 236**

** This course has a requisite. Requisites 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**

| Fall | Spring |
|---|---|
| ENG 111 | CST 100 |
| ITD 110 | ITD 130 |
| ITN 109 | ITE 115 |
| ITN 110 | ITN 111 |
| ITP 100 | MTH 120 |
| SDV 101 | Humanities/Fine Arts |

**Second Year**

| Fall | Spring |
|---|---|
| BUS 100 | ACC 211 |
| BUS 116 | ECO 120 |
| ITD 250 | ITN 113 |
| ITN 112 | TEL 250 |
| ITP 170 | |
| HLT/PED | |

### Database and Program Developer

**First Year**

| Fall | Spring |
|---|---|
| ENG 111 | ACC 211 |
| ITD 110 | ITD 130 |
| ITE 115 | HLT/PED |
| ITN 109 | MTH 120 |
| ITP 100 | ITP 136 or ITP 120 |
| SDV 101 | Humanities/Fine Arts |

**Second Year**

| Fall | Spring |
|---|---|
| BUS 116 | BUS 100 |
| ITD 250 | CST 100 |
| ITP 170 | ECO 120 |
| ITP 140 | ITD 120 |
| ITP 236 or ITP 220 | ITP 244 or ITP 246 |

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### Web Programmer

**First Year**

| Fall | Spring |
|---|---|
| ITD 110 | CST 100 |
| ITD 112 | ECO 120 |
| ITE 115 | ENG 111 |
| ITN 109 | ITD 130 |
| ITP 100 | ITD 210 |
| SDV 101 | MTH 120 |

**Second Year**

| Fall | Spring |
|---|---|
| BUS 100 | ACC 211 |
| BUS 116 | HLT/PED |
| ITD 212 | ITD 120 |
| ITP 140 | ITD 220 |
| ITP 170 | ITP 225 |
| Humanities/Fine Arts | |

### GIS Developer

**First Year**

| Fall | Spring |
|---|---|
| ENG 111 | BUS 100 |
| ITD 110 | CST 100 |
| ITE 115 | ITD 130 |
| ITN 109 | ITP 136 |
| ITP 100 | MTH 120 |
| SDV 101 | |

**Second Year**

| Fall | Spring |
|---|---|
| BUS 116 | ACC 211 |
| GIS 200 | ECO 120 |
| GIS 210 | GIS 201 |
| ITP 136L | GIS 205 |
| ITP 170 | HLT/PED |
| ITP 236 | Humanities/Fine Arts |

CAREER STUDIES CERTIFICATE (221-299-12)

# IT: Database and Program Developer

**Purpose:** This curriculum is designed to provide students with skills in the aspects of client side database and programming development necessary for medium to large size companies.

**Program Objectives:** Employment opportunities include entry level positions in fields including Database Administrator, SQL Server Administrator, MySQL Administrator, Java Developer, C# Developer, and Software Architect.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Program Notes:** Students enrolling in the program will choose whether to specialize in Java or C# programming. Electives must be approved by their faculty advisor.

## Curriculum and Other Requirements

| Database & Program Developer Courses | | Credits |
|---|---|---|
| ITD 130 | Database Fundamentals | 3 |
| ITD 250* | Database Architecture and Administration | 4 |
| ITP 100 | Software Design | 3 |
| ITP ### | Java Programming Sequence[1] or .NET Programming Sequence[2] | 11 |
| **Total Minimum Credits for Certificate** | | **21** |

[1] *Java Programming Sequence: ITP 120* Java Programming I, ITP 220* Java Programming II, and ITP 246* Java Server Side Programming.*

[2] *.Net Programming Sequence: ITP 136* C# Programming I, ITP 236* C# Programming II, and ITP 244* ASP.NET - Server Side Programming.*

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

## Suggested Schedule

**First Year**

**Fall**
ITP 100

**Spring**
ITD 130
Programming Sequence

**Second Year**

**Fall**
ITD 250
Programming Sequence

**Spring**
Programming Sequence

CAREER STUDIES CERTIFICATE (221-732-02)

# IT: Network and Database Administration

**Purpose:** This curriculum is designed to give students the knowledge and skills to meet industry need for administration and support of computer systems.

**Program Objectives:** Employment opportunities include 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 requirements for admission to credit-level coursework established by the college.

### Curriculum and Other Requirements

| Network and Database Administration Courses | | Credits |
|---|---|---|
| ITD 130 | Database Fundamentals | 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 requisite. Requisites 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 (221-352-02)

# IT: Web Designer

**Purpose:** : This curriculum is designed to assist students in gaining the knowledge necessary to be employed in, or start a business that specializes in Web Design and Web Development. It will prepare students for the spectrum of demands associated with applying the latest technology for Web Design and development, as well as introduce them to the day to day requirements of running a small business.

**Program Objectives:** Employment opportunities include positions in the areas of Web Design, Web Developing, New & Social Media and Interactive Design.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

### Curriculum and Other Requirements

| Web Designer Courses | | Credits |
|---|---|---|
| ACC 110 | Intro to Computerized Accounting | 1 |
| BUS 116 | Entrepreneurship | 3 |
| BUS 165* | Small Business Management | 3 |
| ITD 110 | Web Page Design I | 3 |
| ITD 112* | Designing Web Page Graphics | 3 |
| ITD 210* | Web Page Design II | 3 |
| ITD 212* | Interactive Web Design | 3 |
| MKT 100 | Principles of Marketing | 3 |
| **Total Minimum Credits for Certificate** | | **22** |

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

### Suggested Schedule

| First Year | Spring |
|---|---|
| Fall | ACC 110 |
| BUS 116 | BUS 165 |
| ITD 110 | ITD 210 |
| ITD 112 | MKT 100 |
| ITD 212 | |

CAREER STUDIES CERTIFICATE (221-352-03)

# IT: Web Programmer

**Purpose:** This curriculum is designed to provide students with the necessary skills to design web pages using graphical software.

**Program Objectives:** Employment opportunities include entry level positions as Internet Application Developers, Web Programmers, and Web Designers.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

## Curriculum and Other Requirements

| Web Programmer Courses | | Credits |
|---|---|---|
| ITD 110 | Web Page Design 1 | 3 |
| ITD 112* | Designing Web Page Graphics | 3 |
| ITD 120* | Design Concepts for Mobile Apps | 3 |
| ITD 210* | Web Page Design II | 3 |
| ITD 212* | Interactive Web Design | 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 requisite. Requisites 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 120 |
| ITD 212 | ITP 225 |
| ITP 140 | |

# Liberal Arts

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution to complete a baccalaureate degree in English, foreign language, humanities, journalism, liberal arts, philosophy, pre-law, or speech/drama.

A specialization is also available in fine arts.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

### Liberal Arts Major

| 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 241-242* | 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[3] | Health or Physical Education | 2 |
| ITE 115 | Intro to Computer Applications and Concepts | 3 |
| MTH 151* | Mathematics for the Liberal Arts I | 3 |
| MTH 152* | Mathematics for the Liberal Arts II (or MTH 157) | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[1] | Social Science Electives (List B) | 6 |
| E[1] | Science Sequence (List A) | 8 |
| E[1,2] | Beginning Foreign Language Electives or Humanities/Fine Arts Electives (List B) | 7 |
| E[2] | Intermediate Foreign Language Electives (List A) | 6 |
| **Total Minimum Credits for Degree** | | **60** |

*[1] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[2] French and Spanish are guaranteed to be offered at the beginning and intermediate level each year. Completion of an intermediate level foreign language sequence is required for graduation. Students may take the intermediate level foreign language sequence (201-202) their first year if they have completed two years of a high school foreign language with at least a "B" average. If not, students must complete a beginning level sequence (101-102) their first year and the intermediate level sequence (201-202) during their second year.*

*[3] 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 requisite. Requisites 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 |
| SDV 100 | ITE 115 |
| Foreign Lang Elective | Foreign Lang Elective |
| Social Science Elective | Social Science Elective |
| Science Elective | Science Elective |

**Second Year**

| Fall | Spring |
|---|---|
| CST 100 | ENG 242 |
| ENG 241 | HIS 112 |
| HIS 111 | HLT/PED |
| MTH 151 | MTH 152 |
| Humanities/Fine Arts | Humanities/Fine Arts |

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

# Liberal Arts cont'd

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year program in a professional art school or to a four-year program in fine arts.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

A satisfactory aptitude in visual art is preferred for entry into the art program.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

### Suggested Schedule

**First Year**
**Fall**
ART 121
ENG 111
SDV 100
Foreign Lang Elective
Social Science Elective

**Spring**
ART 122
ENG 112
CST 100
Social Science Elective

**Second Year**
**Fall**
ART 131
ENG 241
HIS 111
MTH 151
Science Elective

**Spring**
ART 132
HIS 112
HLT/PED
MTH 152
Science Elective

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

### Fine Arts Specialization (01)

| Curriculum and Other Requirements | Credits |
|---|---|
| **General Education Core Courses** | |
| CST 100 ..... Prin of Public Speaking (or CST 105) | 3 |
| ENG 111-112* College Composition I-II | 6 |
| ENG 241[3] ..... 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] ..... Health or Physical Education | 3 |
| MTH 151* ..... Mathematics for the Liberal Arts I | 3 |
| MTH 152* ..... Mathematics for the Liberal Arts II (or MTH 157) | 3 |
| SDV 100 ..... College Success Skills (or SDV 101) | 1 |
| E[1] ..... Interm Foreign Language Electives | 6 |
| E[2] ..... Social Science Elective (List B) | 6 |
| E[1] ..... Science Sequence (List A) | 8 |
| **Fine Arts Specialization Courses** | |
| ART 121-122* . Drawing I-II | 6 |
| ART 131 ..... Fundamentals of Design I | 3 |
| E[3,*] ..... Foreign Language Elective or (ART 132) | 3 |
| **Total Minimum Credits for Degree** | **60** |

*[1] French and Spanish are guaranteed to be offered at the beginning and intermediate level each year. Completion of an intermediate level foreign language sequence is required for graduation. Students may take the intermediate level foreign language sequence (201-202) their first year if they have completed two years of a high school foreign language with at least a "B" average. If not, students must complete a beginning level sequence (101-102) their first year and the intermediate level sequence (201-202) during their second year.*

*[2] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[3] Students completing the intermediate level of foreign language during the first year will take ENG 241 and ART 132 during their second year.*

*[4] 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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

CAREER STUDIES CERTIFICATE (221-731-98)

# Maintenance Technology

**Purpose:** This curriculum is designed to prepare students for careers in facilities maintenance.

**Program Objectives:** Employment opportunities include positions in the maintenance department of small industry, health care facilities, and other heavy industry organizations.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

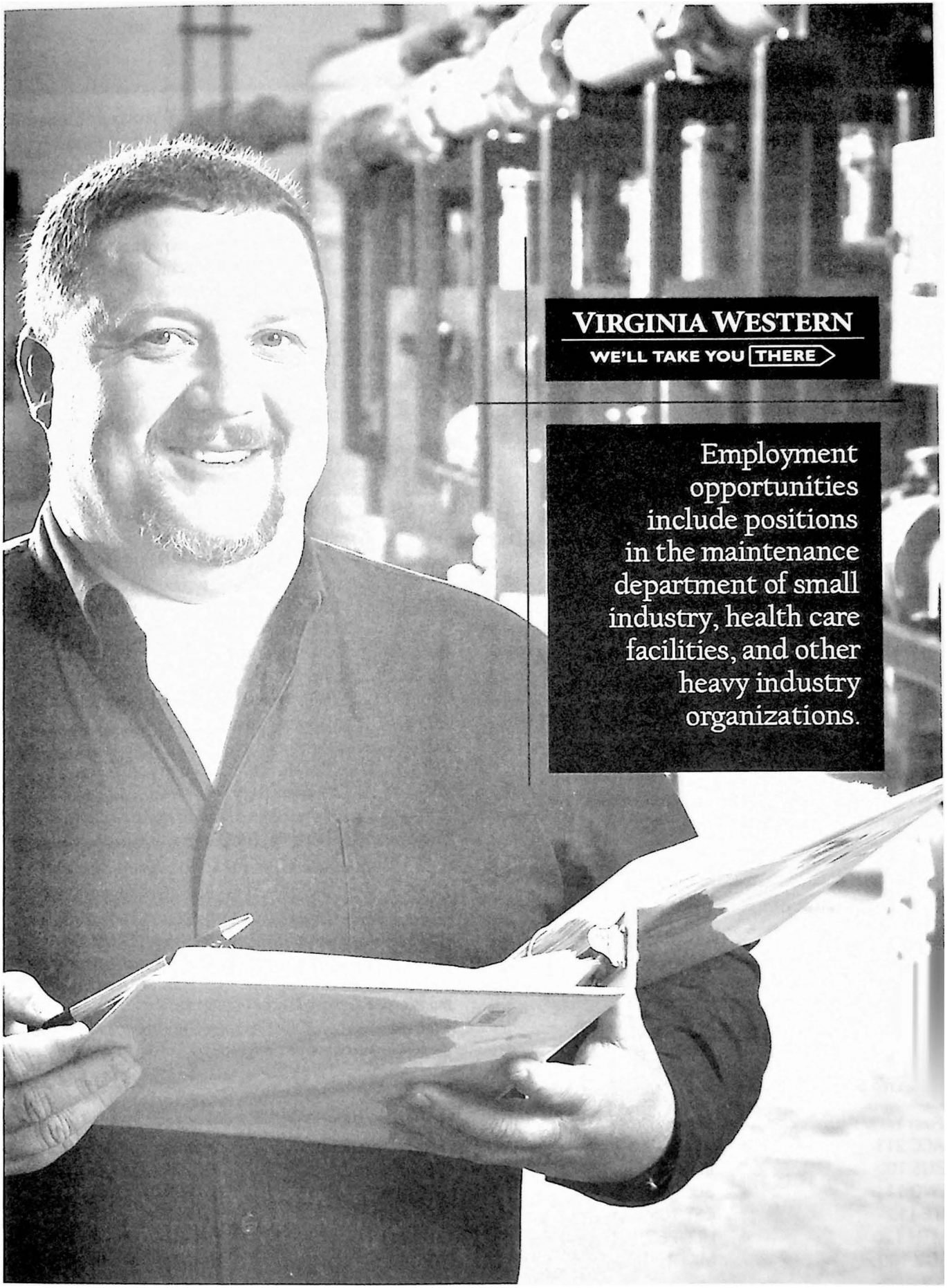
**Program Notes:** The program also prepares the student to take the EPA Section 608 Certification test, which is now required of all people employed in the installation, maintenance and repair of air conditioning and refrigeration equipment. This certification test is given on campus during the student's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

| Curriculum and Other Requirements | Credits |
|---|---|
| **Maintenance Technology and Related Courses** | |
| AIR 121-122* .. Air Conditioning & Refrigeration I-II | 6 |
| AIR 238 ..... Advanced Troubleshooting and Services | 3 |
| BLD 111 ..... Blueprint Reading and the Building Code | 3 |
| ELE 133* ..... Practical Electricity I | 3 |
| MEC 162 ..... Fluid Mechanics Hydraulics/ Pneumatics | 3 |
| WEL 120 ..... Introduction to Welding | 3 |
| **Total Minimum Credits for Certificate** | **21** |

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

**Suggested Schedule**

| Fall | Spring |
|---|---|
| AIR 121 | AIR 122 |
| ELE 133 | AIR 238 |
| WEL 120 | BLD 111 |
| | MEC 162 |


VIRGINIA WESTERN
WE'LL TAKE YOU THERE
Employment opportunities include positions in the maintenance department of small industry, health care facilities, and other heavy industry organizations.

# Management

**rpose:** This curriculum is designed for individuals who seek management positions in business and industry.

Specializations are available in marketing and human resource management.

**Program Objectives:** Employment opportunities include 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 requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Management Major

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| CST 105 | Oral Communication (or CST 100) | 3 |
| ECO 120 | Survey of Economics (or ECO 201/202) | 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 (List A) | 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 Mathematics (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] 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

** This course has a requisite. Requisites 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 | BUS 125 |
| ENG 111 | BUS 165 |
| ITE 115 | CST 105 |
| MTH 120 | HLT/PED |
| 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 |

# Management cont'd

**Purpose:** This curriculum is designed for students who are seeking employment in merchandising and marketing occupations upon graduation.

**Program Objectives:** Employment opportunities include positions in the marketing field as: manager/ trainee, assistant manager, department manager, sales supervisor, customer service representatives, display apprentice/trainee, advertising trainee, retail store owner/manager and media buyer.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Suggested Schedule

| First Year | |
|---|---|
| **Fall** | **Spring** |
| ACC 211 | ACC 212 |
| BUS 100 | AST 205 |
| ENG 111 | BUS 125 |
| HLT/PED | BUS 165 |
| ITE 115 | HLT/PED |
| MTH 120 | MKT 100 |
| SDV 108 | |

### Marketing Specialization (05)

| Curriculum and Other Requirements | Credits |
|---|---|
| **General Education Core Courses** | |
| CST 105 ..... Oral Communication (or CST 100) | 3 |
| ECO 120 ..... Survey of Economics (or ECO 201/202) | 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 (List A) | 3 |
| **Marketing and Related Courses** | |
| ACC 211-212* . Principles of Accounting I-II | |
| AST 205* ..... Business Communications | 3 |
| BUS 100 ..... Introduction to Business | 3 |
| BUS 125* ..... Applied Business Mathematics (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] 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

| Second Year | |
|---|---|
| **Fall** | **Spring** |
| MKT 216 | BUS 202 |
| BUS 225 | ECO 120 |
| BUS 241 | FIN 215 |
| CST 105 | MKT 220 |
| MKT 110 | Humanities/Fine Arts |

# Management cont'd

**Purpose:** This curriculum is designed for individuals who are seeking initial employment in an entry-level human resource position and those presently in business who are seeking promotions.

**Program Objectives:** Employment opportunities include entry-level human resource assistant, management trainee and supervisor.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** This program is accredited by the Association of Collegiate Business Schools and Programs.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

## Human Resource Management Specialization (07)

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| CST 105 | Oral Communication (or CST 100) | 3 |
| ECO 120 | Survey of Economics (or ECO 201/202) | 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 Mathematics | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 3 |
| **Human Resource Management and Related Courses** | | |
| ACC 110 | Intro to Computerized Accounting | 1 |
| 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 | 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 |
| BUS 285* | Current Issues in Management | 3 |
| FIN 215* | Financial Management | 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

### Suggested Schedule

| First Year | Spring |
|---|---|
| **Fall** | ACC 110 |
| ACC 211 | ACC 212 |
| BUS 100 | BUS 111 |
| ENG 111 | BUS 125 |
| HLT/PED | MKT 100 |
| ITE 115 | MTH 120 |
| SDV 100 | |

| Second Year | Spring |
|---|---|
| **Fall** | AST 205 |
| ACC 124 | BUS 202 |
| BUS 205 | BUS 285 |
| BUS 225 | CST 105 |
| BUS 241 | FIN 215 |
| ECO 120 | Humanities/Fine Arts |

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 a business.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Program Objectives:** Employment opportunities include entrepreneurship in a variety of occupational fields.

| 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 Sequence | 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 requisite. Requisites 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 |

# Management: Human Resource Development

**Purpose:** This curriculum is designed to prepare students for employment in the human resource management function of business and industry.

Emphasis will be placed on improving workplace readiness skills such as communications, critical analysis, problem-solving, teamwork, and work ethic.

**Program Objectives:** Employment opportunities include entry level positions within the field of Human Resource Management.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

| 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 |
| BUS 285* | Current Issue in Management | 3 |

**Total Minimum Credits for Certificate ..... 18**

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

**Suggested Schedule**

| Fall | Spring |
|---|---|
| ACC 124 | BUS 111 |
| BUS 100 | BUS 205 |
| BUS 200 | BUS 285 |

# Management: Organizational Leadership

**Purpose:** This curriculum 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.

**Program Objectives:** Students will be prepared to enter into leadership roles while developing people skills and exercising the decision making process.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by 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 requisite. Requisites 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

**Spring**
BUS 205
MKT 100

**Second Year**
**Fall**
BUS 165
MKT 110

# Mechanical En gineering Technology

**Purpose:** This curriculum is designed to prepare students for entry-level positions as mechanical engineering technicians.

**Program Objectives:** Graduates may seek employment as mechanical engineering technicians.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

| 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[2] | Health or Physical Education | 2 |
| MTH 115-116[4,*] | Technical Mathematics I-II | 6 |
| PHY 201* | General College Physics I | 4 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[1] | Humanities/Fine Arts Elective (List A) | 3 |
| E[1] | Social Science Elective (List A) | 3 |
| E[1] | Social Science Elective (List B) | 3 |
| **Mechanical Engineering and Related Courses** | | |
| DRF 128* | Geometric Dimensioning and Tolerancing | 3 |
| DRF201-202-203* | Computer Aided Drafting and Design I-II-III | 9 |
| DRF 226* | Computer Aided Machining | 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 Engineer Tech | 3 |
| MEC 132* | Mechanics II-Strength of Materials for Engineering Technology | 3 |
| E[3] | Technical Elective | 3 |
| **Total Minimum Credits for Degree** | | **65** |

*[1] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*
*[2] 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] A technical elective should be selected from EGR 126, EGR 206, MTH 157, PHY 202, or see advisor for additional options.*
*[4] Students may substitute MTH 166 and MTH 175. See advisor for details.*
** This course has a requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

## Suggested Schedule

| First Year | Spring | Second Year | Spring |
|---|---|---|---|
| **Fall** | DRF 202 | **Fall** | CST 100 |
| DRF 201 | DRF 226 | DRF 203 | DRF 128 |
| EGR 216 | MEC 113 | ETR 113 | HLT/PED |
| ENG 111 | MEC 131 | HLT/PED | Social Science Elective |
| MEC 119 | MTH 116 | MEC 132 | Technical Elective |
| MTH 115 | Humanities/Fine Arts | PHY 201 | |
| SDV 100 | | Social Science Elective | |

CAREER STUDIES CERTIFICATE (221-731-68)

# Microcomputer Systems Technology

**Purpose:** This curriculum 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.

**Program Objectives:** Employment opportunities include computer technician, LAN/WAN technician, and technical representative/salesperson.

Note: Courses on A+® certification and Cisco™ CCNA™ are included in this curriculum.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

| 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 requisite. 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 (NCLEX-RN) leading to the designation of registered nurse.

**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.

**Program 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.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

Applicants must meet the developmental requirements listed above prior to applying for admission to the AAS Nursing Program.

Completion of one unit of high school Biology and Chemistry with a grade of "C" or better is required before applying to this program.

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 time frame. 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.

For application materials and additional program information, please see our website at *http://www.virginiawestern.edu/academics/smh/health/nursing/index.php*.

**Curriculum Admissions Guidelines and Procedures**

1. Applicants to the nursing program are strongly encouraged to meet with the Health Careers 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 and results of placement evaluations are required prior to this meeting.
2. The nursing program accepts new students each fall. Applications must be completed no later than March 1. 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 current Nursing Application form. Nursing Application forms are available in the Admissions Office, the Health Professions Information Office, and on our website (listed above).
3. BIO 141 must be completed with a grade of "C" or better by the end of the spring semester preceding enrollment in NUR 121. BIO 142 must be completed with a "C" or better by the end of the summer session preceding enrollment in NUR 121. 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.)
4. 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.

**Program Notes:** This program is approved by the Virginia Board of Nursing and is a member of the National League of Nursing. The VWCC Nursing Program does not participate in voluntary NLN-AC accreditation.

# Nursing cont'd

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 NCLEX-RN exam.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Suggested Schedule

**First Year**

**Fall**
HLT 141
HLT/PED
NUR 121
NUR 135-RN
SDV 100

**Spring**
NAS 185
NUR 122

| Curriculum and Other Requirements | Credits |
|---|---|
| **General Education Core Courses** | |
| BIO 141 -142[5] ... Human Anatomy and Physiology I-II | 8 |
| ENG 111* ... College Composition I | 3 |
| HLT/PED[6] ... Health or Physical Education | 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[3] ... Humanities/Fine Arts Elective (List A) | 3 |
| **Nursing and Related Courses** | |
| HLT 141[4] ... Intro to Medical Terminology | 1 |
| NUR 121-122[1] . Nursing Fundamentals I-II | 20 |
| NUR 135[2] ... Drug Dosage Calculation | 2 |
| NUR 238-239[1] . 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[4] HLT 143 cannot substitute for HLT 141 unless the sequence is completed; both HLT 143 and HLT 144.*

*[5] Must be completed by the end of summer session preceding NUR 121.*

*[6] HLT 105 or CPR certification can be used to satisfy this requirement.*

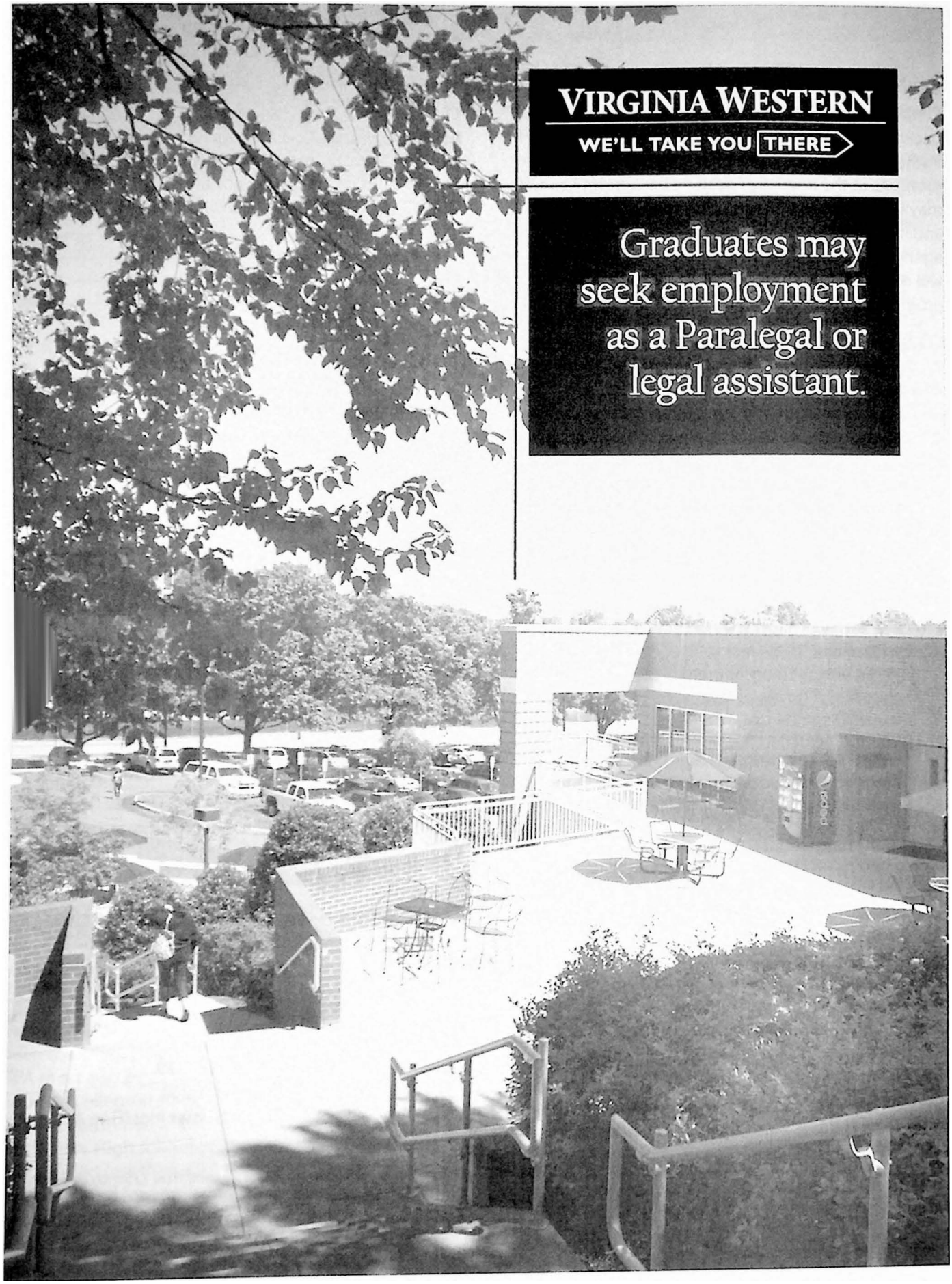
** This course has a requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**Second Year**

**Fall**
ENG 111
NUR 238
PSY 200

**Spring**
NUR 239
PSY 230
Humanities/Fine Arts

**Support courses (non-NUR courses) and NUR 135 may be taken prior to entry into the program.*


VIRGINIA WESTERN
WE'LL TAKE YOU THERE
Graduates may seek employment as a Paralegal or legal assistant.

ASSOCIATE OF APPLIED SCIENCE DEGREE (260)

# Paralegal Studies

**Purpose:** This curriculum is designed to provide an individual working under the direct supervision of an attorney with a sufficient level of knowledge and proficiency to perform tasks in meeting the needs of clients.

A paralegal will have a basic understanding of the general process of civil and criminal american law.

**Program Objectives:** Graduates may seek employment as a paralegal or legal assistant.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2 and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Notes:** Due to prerequisite requirements, LGL classes should be taken in a **specific** order as shown in the section titled "Suggested Schedule."

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

| 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 120* | Introduction to Mathematics | 3 |
| PSY 120 | Human Relations | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 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[3,*] | Legal Research | 3 |
| LGL 126[3,*] | 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] 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*
*[3] LGL 125 and LGL 126 must be taken during the same semester.*
** This course has a requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**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 120 |
| LGL 200 | PSY 120 |
| SDV 100 | |

| Second Year/Fall | Spring |
|---|---|
| ACC 211 | LGL 215 |
| HLT/PED | LGL 216 |
| LGL 210 | LGL 218 |
| LGL 225 | LGL 238 |
| LGL 230 | Humanities/Fine Arts |
| LGL 235 | |

CERTIFICATE (157)

# Practical Nursing

## *Also See Nursing*

**Purpose:** This curriculum is designed to prepare students for a career as a Licensed Practical Nurse (LPN). The program will provide instruction to prepare 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 academically eligible to take the NCLEX-PN examination.

**Program Objectives:** Employment opportunities include nursing homes, hospices, public health and community nursing, medical offices and clinics, and acute and long-term care facilities.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3 and 4.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

Admission to the program is competitive. Students are admitted once a year in August. Prospective applicants who are accepted into the program must attend an information session. While applications are accepted at any time, to be eligible for admission the application packet must be submitted by April 1st of the admission year. The criteria for admission to the practical nursing program are outlined in the Practical Nursing Admissions Packet. Additional information related to entrance testing requirements will be given to qualified applicants in the spring semester.

1. Applicants must have a high school diploma or equivalent.
2. Applicants must have completed one unit of high school or college-level Biology with a grade of "C" or better.
3. Applicants must have a cumulative high school or college-level GPA of 2.0. College GPA is 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.
4. Students must complete required evaluative tests administered at Virginia Western.
5. Verification of current CPR certification will be required prior to the beginning of classes and must be kept current throughout enrollment in the program.

**Admission Procedures:** The program begins 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. Letters are mailed in May regarding fall admission. All application materials must be submitted to the attention of the Health Careers Information Specialist prior to April 1. The applicant is responsible for making certain that the following have been submitted in addition to the college application: completed practical nursing application form, written essay (criteria listed on back of application), official high school transcript, copy of GED scores (if applicable), official transcripts from all colleges attended (VWCC and other Virginia community colleges are not required). Applicants being considered for admission will be required to take a nursing entrance test during the spring semester (nonrefundable fee is the responsibility of the applicant). Applicants must attend a personal interview demonstrating satisfactory oral and written communication skills. Qualified applicants are considered without regard to race, color, gender, age, religion, disability, national origin, or other non-merit factors. Students interested in this program should consult the Practical Nursing Program page for additional information and responsibilities. The page can be accessed through the VWCC website *http://www.virginiawestern.edu/academics/smh/health/programs.php.*

Please note that students are responsible for costs related to required testing fees, uniforms, books, criminal background checks, urine drug screenings, and nursing skills lab kits.

**Progression:** Students must pass each theoretical and clinical nursing course in order to proceed to the next course. Students must maintain a minimum GPA of 2.0

# Practical Nursing cont'd

to continue in the program. For application materials and additional program information, please see the VWCC website at http://www.virginiawestern.edu/academics/smh/health/practicalnursing/index.php.

**Program Note:** The certificate program in Practical Nursing requires four full-time semesters of study and is approved by the Virginia Board of Nursing. The Board of Nursing can deny licensure to any applicant who has filed false credentials, who has falsely represented facts on the application for licensure, and/or has committed a felony or misdemeanor. Some health care facilities may not employ individuals who have committed certain criminal acts and may conduct criminal background checks before hiring. Criminal background checks and urine drug screens are required for entrance into some clinical agencies. Students who have convictions may be prohibited from clinical agencies and may not complete the certificate program.

| Curriculum and Other Requirements | Credits |
|---|---|
| **General Education Core Courses** | |
| ENG 111 * ..... College Composition I | 3 |
| HLT/PED[3] ..... Health or Physical Education | 2 |
| PSY 200 ..... Principles of Psychology | 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** | **56** |

[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.*

[3] *HLT 105 or CPR certification can be used to satisfy this requirement.*

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

**Suggested Schedule**

**First Year**

| Fall | Spring |
|---|---|
| ENG 111 | PNE 110 |
| NUR 135-PN (fall only) | PNE 142 |
| PNE 120 | PNE 156 |
| PNE 141 | PNE 174 |
| PNE 155 | |
| SDV 100 | |

**Second Year**

| Fall | Spring |
|---|---|
| PNE 111 | HLT/PED |
| PNE 158 | PNE 135 |
| PNE 181 | PNE 145 |
| PSY 200 | PNE 182 |

# Radiation Oncology

**Purpose:** This curriculum is designed to prepare selected students to perform the responsibilities of an entry-level radiation therapist. Upon completion graduates will be eligible to apply to take the American Registry of Radiologic Technologists (ARRT) examination leading to certification as a registered Radiation Therapist, RT-T.

**Program Objectives:** Graduates may apply for employment in hospitals, cancer centers, education, management, government agencies, and marketing and research.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9.

**Clinical Environment:** By nature of the profession, students may be exposed to ionizing radiation, infectious diseases, and challenging patients. Students will be exposed to stressful and demanding situations, as well as time pressures in the clinical setting.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

The Radiation Oncology Program is a selective admissions program requiring an application to the college as well as a separate application to the program. For details about the Admission Requirements go to: *http://www.virginiawestern.edu/academics/smh/health/oncology/index.php.*

**Admission Procedure:** The Radiation Oncology applicant is responsible for making certain that the following have been submitted in addition to a current college application by the **March 15** deadline:

Completed program application form
- Official high school transcript
  Copy of GED scores, if applicable
- Official transcripts from all colleges attended (VWCC and other Virginia community college transcripts are not necessary)
- Two (2) letters of recommendation, such as, employers or professors
- Copy of any professional licensure or certification

**Note:** If applying for the joint venture site at Northern Virginia Community College, applicants must complete a college application for NOVA, in addition to VWCC.

All application materials must be submitted to the attention of the Health Careers Information Specialist by **March 15**.

The Radiation Oncology application form and additional program information can be accessed from our website at *http://www.virginiawestern.edu/academics/smh/health/oncology/index.php.* Application packets are also available in the Health Professions and College Admissions Office. Early application is encouraged for advising purposes.

Applicants must also take the math placement test at Virginia Western. Additional information regarding the math evaluation procedures will be mailed to applicants upon receipt of the above completed academic file.

Qualified applicants will be contacted for an interview appointment during the spring semester. Applicants considered by the Radiation Oncology Admissions Committee will be notified by mail in May regarding fall admission. If the number of qualified applicants is below the maximum enrollment for VWCC or NOVA, the application deadline may be extended for that site.

**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.
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

# Radiation Oncology cont'd

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 throughout 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.

**Program Notes:** 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.

| 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* ..... 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** |

** This course has a requisite. Requisites 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 |

***Note:*** *Support courses (non-ROC courses) may be taken prior to entry.*

*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.*

# Radiography

**Purpose:** This curriculum is designed to prepare selected students to perform the responsibilities of an entry-level radiographer. Upon completion of the curriculum, graduates are eligible to apply to take the National Registry examination leading to certification as a Registered Radiographer, RT-R.

**Program Objectives:** Graduates may apply for employment in hospitals, education, industry, clinics, government agencies, physician's offices, and emergency care centers.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

The Radiography Program is a selective admissions program requiring an application to the college as well as a separate application to the program. For details about the Admission Requirements go to the radiography website under Curriculum Information: *http://www.virginiawestern.edu/academics/smh/health/radiography/index.php .*

**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 essential functions of a Radiographer, for details go to: *http://www.virginiawestern.edu/academics/smh/health/radiography/faq.php*

**Clinical Environment:** The candidates should realize that student Radiographers may be, by nature of the profession, exposed to ionizing radiation, infectious diseases, and difficult patients.

**Admission Procedure:** The radiography program applicant is responsible for making certain that the following have been submitted in addition to a current college application by the February 15 deadline:

Completed program application form
Official high school transcript or copy of GED scores (if applicable)
Official transcripts for all colleges attended (VWCC and other Virginia community college transcripts are not necessary)

All application materials must be submitted to the attention of the Health Careers Information Specialist prior to February 15. The Radiography application form and additional program information can be accessed from our web site at *http://www.virginiawestern.edu/academics/smh/health/radiography/index.php .* Application packets are also available in the Health Professions and college Admissions offices. Early application is encouraged for advising purposes. Once the above documentation has been evaluated, applicants are encouraged to contact the Health Careers Specialist for any additional questions and advising.

Qualified applicants will be contacted for an interview with the Program Director during the spring semester. Interviews are usually held in February and March. The admissions process also includes a hospital tour, interview with a radiography instructor, and a writing sample.

**Student Responsibilities:** All students admitted to the Radiography program must attend the Radiography Orientation, register for all classes, and pay tuition prior to the beginning of the semester.

Final admission is contingent upon a satisfactory medical examination. Results must be returned to the Radiography Program Director 30 days before fall classes begin. The health history must include evidence of Rubella (German measles) screening and/or vaccine, Tuberculin skin test (or chest x-ray), Hepatitis B vaccine, and a routine CBC. A medical form is provided upon admission to the program.

- The student is responsible for the purchase of uniforms and transportation to and from agencies utilized for clinical experience.
  Acceptance into the program is contingent upon a satisfactory background check and negative drug screening test at the student's expense.
- Verification of current CPR certification will be required prior to the beginning of Radiography classes and must be kept current.

# Radiography cont'd

The student is responsible for paying a $20 fee for a radiation dosimetry badge each semester.

**Retention Policies:** Successful completion of the program requires the student maintain a "C" or better grade in all Radiography courses, BIO elective and HLT 143. A complete statement of all of the above policies is outlined in the Radiography Handbook, which is available upon admissions into the program. Students must maintain a 2.0 or better GPA to remain in the program.

**Program Notes:** 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.

Support courses (non-RAD courses) may be taken prior to entry into the radiography program.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| ENG 111* | College Composition I | 3 |
| HLT/PED[2] | Health or Physical Education | 1 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[3] | BIO Elective | 4 |
| E[1] | Humanities/Fine Arts Elective (List A) | 3 |
| E[1] | Social Science Elective (List A) | 3 |
| **Radiography and Related Courses** | | |
| HLT 143 | Medical Terminology I | 3 |
| RAD 106 | Introduction to Radiologic Science | 2 |
| RAD 111-112 | Radiologic Science I-II | 8 |
| RAD 121 | Radiographic Procedures I | 4 |
| RAD 125 | Patient Care Procedures | 3 |
| RAD 131-132 | Elementary Clinical Procedures I-II | 6 |
| RAD 190* | Coordinated Internship | 3 |
| RAD 205 | Radiation Protection & Radiobiology | 3 |
| RAD 215 | Correlated Radiographic Theory | 2 |
| RAD 221* | 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** | | **70** |

*[1] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[2] HLT 105 or CPR certification can be used to satisfy this requirement.*

*[3] Students should enroll in BIO 193: Human Anatomy & Physiology or have completed BIO 141-142 within five years prior to the date of admission into the program.*

** This course has a requisite. Requisites 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 | HLT/PED |
| RAD 121 | RAD 125 | RAD 190 |
| RAD 131 | RAD 132 | RAD 205 |
| SDV 100 | RAD 221 | |
| BIO Elective | | |

**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 | |

# Science

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution to complete a baccalaureate degree in a science discipline or pre-professional program.

Students may elect to specialize in Health Sciences, Integrated Environmental Studies and Mathematics.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses prior to enrollment in this program.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9.

It is strongly recommended that developmental education requirements be completed as soon as possible.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

## Science Major

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| ENG 111-112* | College Composition I-II | 6 |
| HIS 121 | US History (or HIS 111) | 3 |
| HLT/PED[1] | Health or Physical Education | 1 |
| ITE 115 | Intro to Computer Applications and Concepts (or CSC 201) | 3 |
| MTH 163* | Pre-Calculus I (or MTH 166) | 3 |
| MTH 271* | Applied Calculus I (or MTH 175) | 3 |
| MTH 272* | Applied Calculus II (or MTH 176) | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 6 |
| E[2] | Transfer Elective (List B) | 6 |
| E[2] | Social Science Elective (List B) | 6 |
| **Science Courses** | | |
| E[2] | Science Sequence (List A) | 8 |
| E[2,3] | Science Elective without Lab (List B) | 3 |
| E[2] | Science Electives with Lab (List B) | 8 |
| **Total Minimum Credits for Degree** | | **60** |

*[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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[3] A science elective with lab (List B) may also be used to satisfy this requirement.*

** This course has a requisite. Requisites 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 |
| HLT/PED | MTH 271 |
| ITE 115 | Humanities/Fine Arts |
| MTH 163 | Science Elective/Lab |
| SDV 100 | Transfer Elective |
| Science Elective/Lab | |

**Second Year**

| Fall | Spring |
|---|---|
| HIS 121 | Humanities/Fine Arts |
| MTH 272 | Science Elective |
| Science Elective/Lab | Science Elective/Lab |
| Social Science Elective | Social Science Elective |

# Science cont'd

**Program Notes:** Students preparing for a major in **pre-medicine, pre-dentistry, pre-pharmacy, pre-physician's assistant or pre-veterinary** should complete the curricular program in Science and select BIO 101-102 and CHM 111-112 to fulfill the 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; which is offered every other year in even years.

Students preparing for a major in **biology** should complete in their science electives BIO 101-102, BIO 206, BIO 220, as well as CHM 111-112.

Students preparing for a major in **chemistry** should complete in their science electives CHM 111-112, CHM 241/245, CHM 242/244, as well as BIO 101-102.

Students preparing for a major in **earth sciences** should complete in their science electives GOL 105-106, as well as selecting from BIO 101-102 or CHM 111-112, depending on the demands of the transfer institution.

Students preparing for a major in **environmental science, ecology, or forestry** should pursue the Integrated Environmental Studies Specialization.

Students preparing for a major in **mathematics, mathematics education, or statistics** should pursue the Specialization in Mathematics.

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.

# Science cont'd

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution to complete a baccalaureate degree in a health field such as nursing, nutrition, health education, or allied health programs including physical or occupational therapy.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses prior to enrollment in this program.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Note:** Students pursuing admission to Dental Hygiene, Nursing, Practical Nursing, Radiography, Radiation Oncology, Surgical Technology or Veterinary Technology should follow the suggested schedule listed on the following page.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

## Health Sciences Specialization (02)

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| ENG 111-112* | College Composition I-II | 6 |
| 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 157* | Statistics (or MTH 152) | 3 |
| PLS 211 | U.S. Government I (or ECO 201) | 3 |
| PSY 200 | Principles of Psychology | 3 |
| PSY 230 | Developmental Psychology | 3 |
| SOC 200 | Principles of Sociology | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[1] | Humanities/Fine Arts Electives (List A) | 6 |
| **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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

## Suggested Schedule

### First Year

| Fall | Spring |
|---|---|
| CHM 111 | CHM 112 |
| ENG 111 | ENG 112 |
| HIS 121 | HLT 230 |
| MTH 151 | ITE 115 |
| PSY 200 | MTH 157 |
| SDV 100 | |

### Second Year

| Fall | Spring |
|---|---|
| BIO 141 | BIO 142 |
| PLS 211 | NAS 18 |
| SOC 200 | PSY 230 |
| Humanities/Fine Arts | Humanities/Fine Arts |

# Science cont'd

Students completing admissions requirements prior to applying to the **AAS Dental Hygiene** program:

Developmental Math Requirements: MTE 1, 2, 3, 4, 5, 6, 7, 8, 9

**Suggested Schedule**

| Fall | Spring |
|---|---|
| BIO 141 | BIO 142 |
| ENG 111 | NAS 185 |
| HLT/PED | PSY 230 |
| SDV 100 | Humanities/Fine Arts |

Students completing admissions requirements prior to applying to the **AAS Nursing** program:

Developmental Math Requirements: MTE 1, 2, 3, 4, 5, 6

**Suggested Schedule**

| Fall | Spring |
|---|---|
| BIO 141 | BIO 142 |
| ENG 111 | NAS 185 |
| HLT/PED | PSY 230 |
| PSY 200 | Humanities/Fine Arts |
| SDV 100 | |

Students completing admissions requirements prior to applying to the **Certificate Practical Nursing** program:

Developmental Math Requirements: MTE 1, 2, 3, 4

**Suggested Schedule**

| Fall | Spring |
|---|---|
| ENG 111 | PSY 200 |
| HLT/PED | |
| SDV 100 | |

Students completing admissions requirements prior to applying to the **AAS Radiography** program:

Developmental Math Requirements: MTE 1, 2, 3, 4, 5, 6, 7, 8, 9

**Suggested Schedule**

| Fall | Spring |
|---|---|
| BIO 141* | BIO 142* |
| ENG 111 | MTH 163 |
| HLT/PED | Humanities/Fine Arts |
| SDV 100 | Social Science |

**BIO 193 will satisfy the admissions requirement.*

Students completing admissions requirements prior to applying to the **Certificate Radiation Oncology** program:

Developmental Math Requirements: MTE 1, 2, 3, 4, 5, 6, 7, 8, 9

**Suggested Schedule**

| Fall | Spring |
|---|---|
| BIO 141 | BIO 142 |
| ENG 111 | MTH 163 |
| HLT/PED | ITE 115 |
| SDV 100 | |

Students completing admissions requirements prior to applying to the **Certificate Surgical Technology** program (through PVCC):

Developmental Math Requirements: MTE 1, 2, 3, 4, 5

**Suggested Schedule**

| Fall | Spring |
|---|---|
| BIO 141 | BIO 142 |
| ENG 111 | NAS 185 |
| HLT 143 | HLT/PED |
| SDV 100 | |

Students completing admissions requirements prior to applying to the **AAS Veterinary Technology** program (through BRCC):

Developmental Math Requirements: MTE 1, 2, 3, 4, 5, 6, 7, 8, 9

**Suggested Schedule**

| Fall | Spring |
|---|---|
| ENG 111 | CHM 111 |
| HLT/PED | Humanities/Fine Arts |
| SDV 100 | Social Science |

# Science cont'd

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution to complete a baccalaureate degree in environmental science, environmental biology, natural resource management, forestry or wildlife science.

**Program Objectives:** Graduates who do not plan to transfer may pursue employment at the technical level as environmental science and protection technicians working with natural resources, agriculture, water resources, or waste water management.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9.

It is strongly recommended that developmental education requirements be completed as soon as possible.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

## Integrated Environmental Studies (IES) Specialization (05)

| Curriculum and Other Requirements | Credits |
|---|---|
| **General Education Core Courses** | |
| BIO 101-102* .. General Biology I-II | 8 |
| ENG 111-112[x] College Composition I-II | 6 |
| GEO 210 ..... Cultural Geography | 3 |
| HLT/PED[2] ..... Health or Physical Education | 3 |
| HUM 202 ..... Survey of Western Culture II | 3 |
| PHI 220 ..... Ethics | 3 |
| PLS 211-212[1] ... 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 163* ..... Applied Calculus I (or MTH 271) | 3 |
| Three IES electives from the following 4-credit courses | 12 |
| BIO 270* General Ecology | |
| BIO 271* Introduction to Ecological Systems | |
| CHM 111* College Chemistry I | |
| CHM 112* College Chemistry II | |
| GOL 105 Physical Geology | |
| **Total Minimum Credits for Degree** | **60** |

[1] *ECO 201-202 may be taken in place of PLS 211-212.*

[2] *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.*

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

### Suggested Schedule

| First Year/Fall | Spring | Second Year/Fall | Spring |
|---|---|---|---|
| BIO 101 | BIO 102 | GEO 210 | BIO 285 |
| ENG 111 | ENG 112 | HLT/PED | HUM 202 |
| ENV 161 | ENV 162 | MTH 163 | IES Elective |
| MTH 157 | PHI 220 | IES Elective | IES Elective |
| PLS 211 | PLS 212 | IES Elective | |
| SDV 100 | | | |

# Science cont'd

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution and major in mathematics, mathematics education, or statistics. This program is suitable for students pursing baccalaureate degrees in physics, chemistry, engineering or computer science.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9. Additionally, students who do not demonstrate mastery in pre-calculus with trigonometry on the placement test will be required to complete MTH 166 prior to enrolling in MTH 175.

It is strongly recommended that developmental education requirements be completed as soon as possible.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

## Mathematics Specialization (04)

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| 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 (List A) | 6 |
| E[2] | Humanities/Fine Arts Elective (List A) | 6 |
| **Mathematics and Related Courses** | | |
| CHM 111-112* | College Chemistry I-II | 8 |
| 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** | | **60** |

*[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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

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

## Suggested Schedule

| First Year/Fall | Spring |
|---|---|
| CHM 111 | CHM 112 |
| ENG 111 | ENG 112 |
| HLT/PED | HIS 121 |
| MTH 175 | MTH 176 |
| SDV 100 | MTH 178 |
| Humanities/Fine Arts | |

| Second Year/Fall | Spring |
|---|---|
| MTH 277 | MTH 287 |
| MTH 285 | MTH 291 |
| PHY 241 | PHY 242 |
| Social Science Elective | Humanities/Fine Arts |
| | Social Science Elective |

ASSOCIATE OF SCIENCE DEGREE (882)

# Social Sciences

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution and complete a baccalaureate degree in fields such as anthropology, economics, history, pre-law, political science, psychology, social sciences or sociology.

A Specialization in Education is also offered for students who want to prepare to teach at the elementary or secondary school level.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

### Social Sciences Major

| Curriculum and Other Requirements<br>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[1] | Health or Physical Education | 3 |
| ITE 115 | Intro Computer Applications and Concepts | 3 |
| MTH 151* | Mathematics for the Liberal Arts I | 3 |
| MTH 152* | Mathematics for the Liberal Arts II (or MTH 157) | 3 |
| PSY 200 | Principles of Psychology | 3 |
| SOC 200 | Principles of Sociology | 3 |
| SDV 100 | College Success Skills (or SDV 108) | 1 |
| E[2] | Humanities/Fine Arts Elective (List B) | 3 |
| E[2] | Science Sequence (List A) | 8 |
| E[2] | Social Science Electives (List B) | 12 |
| **Total Minimum Credits for Degree** | | **60** |

*[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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

** This course has a requisite. Requisites 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 | HIS 122 |
| MTH 151 | MTH 152 |
| SDV 100 | Social Science Elective |
| Social Science Elective | Science Elective |
| Science Elective | |

**Second Year**

| Fall | Spring |
|---|---|
| ENG 241 | CST 100 |
| ITE 115 | HLT/PED |
| PSY 200 | Humanities/Fine Arts |
| Social Science Elective | SOC 200 |
| | Social Science Elective |

# Social Sciences cont'd

**Purpose:** This curriculum is designed for students who plan to transfer to a four-year institution to prepare for a teaching career at the elementary or secondary level.

**Program Objectives:** Students who wish to be teachers in Virginia must major in a content area at a four-year institution such as history, English, mathematics, science or interdisciplinary studies. Although students will be required to complete several professional education courses at the senior institution, they must major in an area besides education.

**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 institutions as an admissions requirement into their teacher education programs. Virginia Western education students should check with the institution 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 institution.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

It is strongly recommended that developmental education requirements be completed as soon as possible.

While a course may satisfy a requirement for a VWCC program, it may not fulfill a requirement at a four-year institution. Students who intend to transfer should verify specific program requirements with their four-year institution.

### Education Specialization (01) Curriculum and Other Requirements

| | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| BIO 101-102* | 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 (or ENG 243) | 3 |
| GEO 210 | Cultural Geography | 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* | Mathematics for the Liberal Arts I | 3 |
| MTH 152* | Mathematics for the Liberal Arts II (or MTH 157) | 3 |
| PHI 101 | Introduction to Philosophy | 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 |
| **Education and Related Courses** | | |
| ART 101 | Art Appreciation I | 3 |
| EDU 100 | Introduction to Education | 1 |
| MUS 121 | Music Appreciation I | 3 |
| **Total Minimum Credits for Degree** | | **60** |

** This course has a requisite. Requisites 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 | ENG 112 |
| MTH 151 | HIS 122 |
| PSY 200 | MTH 152 |
| SDV 100 | PHI 101 |
| **Second Year** | |
| **Fall** | **Spring** |
| ENG 241 | ART 101 |
| ITE 115 | CST 100 |
| GEO 210 | HLT/PED |
| MUS 121 | PLS 211 |
| SOC 200 | |

CERTIFICATE

# Surgical Technology

**Distance Learning Program**

**Offered through partnership with Piedmont Virginia Community College (PVCC)**

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:** This curriculum 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 Objectives:** 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.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4 and 5.

**Admission Requirements:** Students who plan to complete the program through distance education at Virginia Western should follow the PVCC application instructions located at www.pvcc.edu/programs_study/certificate/cert_surgical_technology.php. Completion of the Surgical Technology program application is due by May 1 to Piedmont Virginia Community College. For more information please contact the Health and Life Sciences Division at PVCC: (434) 961-5445.

| Curriculum and Other Requirements | Credits |
|---|---|
| **General Education Core Courses** | |
| BIO 141-142* .. Human Anatomy and Physiology I-II | 8 |
| ENG 111* ..... College Composition I | 3 |
| HLT 143 ..... Medical Terminology | 3 |
| NAS 185* ..... Microbiology | 4 |
| SDV 100 ..... College Success Skills (or SDV 108) | 1 |
| **Surgical Technology and Related Courses** | |
| 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 requisite. Requisites for all courses are listed in the course description section at the back of the catalog.*

**Suggested Schedule**

**First Year**

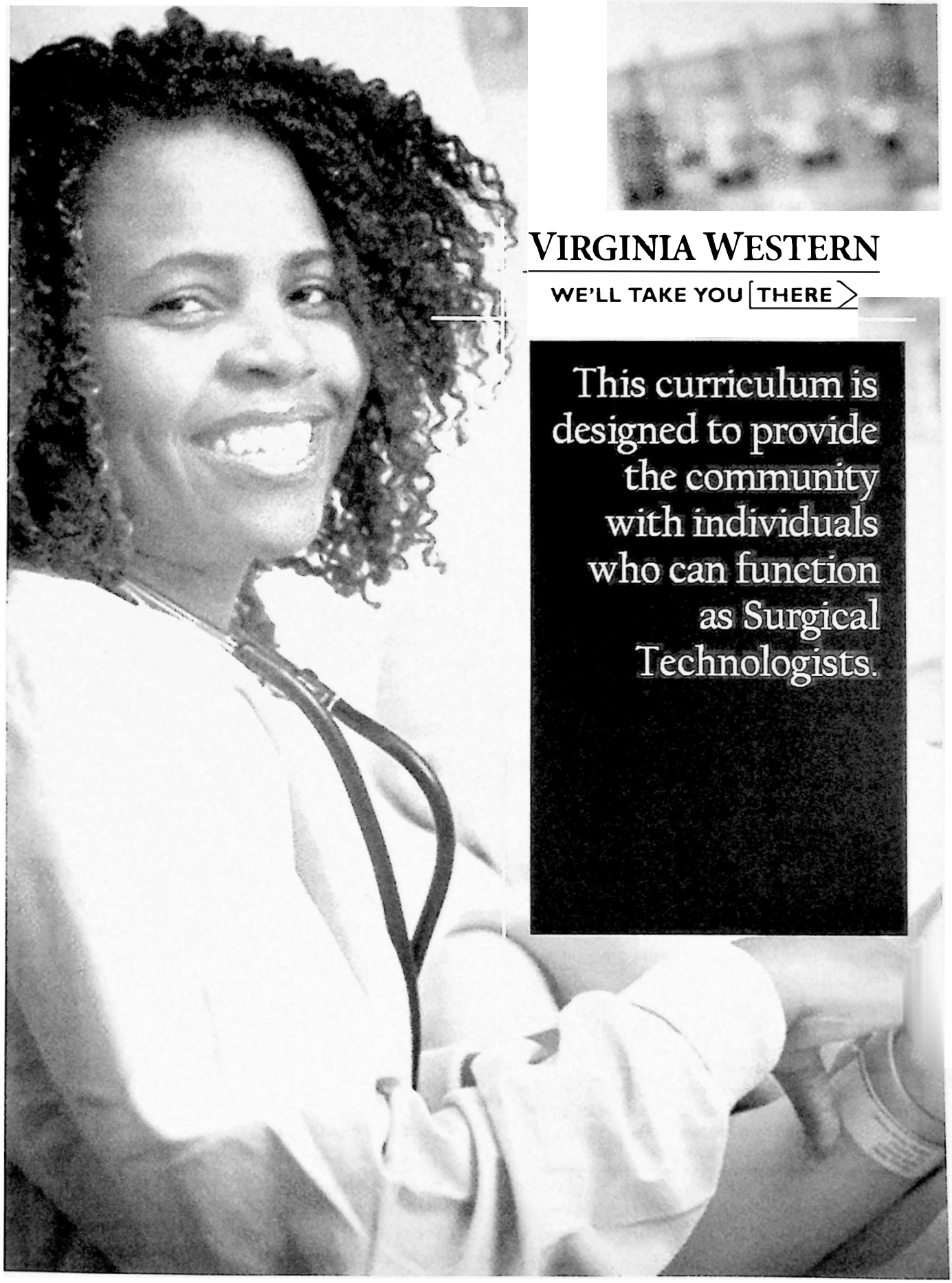
| Fall | Spring |
|---|---|
| BIO 141 | BIO 142 |
| HLT 141 | SDV 100 |
| SUR 140 | SUR 210 |
| SUR 145 | SUR 250 |

**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.*


VIRGINIA WESTERN
WE'LL TAKE YOU THERE
This curriculum is designed to provide the community with individuals who can function as Surgical Technologists.

# Technical Studies

**Purpose:** This 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.)

Specializations are available in mechatronics technology and energy management systems.

Customized plans of study may be designed and developed to meet specific company or industry needs. For further details, please contact the School of Business, Engineering and Technology.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, and 3.

It is strongly recommended that developmental education requirements be completed as soon as possible.

**Program Note:** Work based learning is satisfied by completion of one or a combination of: (1) Journeyman card, (2) three-credit co-op work experience, (3) Standard Industry Exam.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Technical Studies Major

| Curriculum and Other Requirements | Credits |
|---|---|
| **General Education Core Courses** | |
| ENG 111* ..... College Composition I | 3 |
| HLT/PED[1] ..... Health or Physical Education | 1 |
| ITE 115 ..... Intro Computer Applications and Concepts | 3 |
| MTH 120 ..... Introduction to Mathematics (or MTH 115) | 3 |
| SDV 100 ..... College Success Skills (or SDV 101) | 1 |
| E[2] ..... Humanities/Fine Arts Elective (List A) | 3 |
| E[2] ..... Social Science Elective (List A) | 3 |
| **Technical Studies and Related Courses** | |
| BLD 111 ..... Blueprint Reading and the Building Code | 3 |
| ELE 130 ..... Electricity | 4 |
| ELE 159 ..... Electrical Motors | 3 |
| MAC 161 ..... Machine Shop Practices I | 3 |
| MEC 162 ..... Applied Hydraulics and Pneumatics | 3 |
| SAF 127 ..... Industrial Safety | 2 |
| E[3] ..... Technical Electives | 30 |
| **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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[3] Faculty advisor approved electives should be chosen from the following prefixes and may be substituted to align with actual work experience: AIR, ARC, BLD, CIV, DRF, EGR, ELE, ETR, ENE, GIS, IND, MAC, MEC, PHY, TEL and WEL.*

** This course has a requisite. Requisites 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 120
SAF 127
SDV 100
Technical Elective

**Spring**
ELE 130
HLT/PED
MAC 161
MEC 162
Technical Elective

**Second Year/Fall**
BLD 111
Social Science
Technical Elective

**Spring**
ELE 159
Humanities/Find Arts
Technical Elective

# Technical Studies cont'd

**Purpose:** This curriculum 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.

**Program Objectives:** Entry-level or advanced 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 requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

### Suggested Schedule

| First Year/Fall | Spring |
|---|---|
| ELE 133 | ELE 134 |
| ENG 111 | ETR 123 |
| ITE 115 | ETR 141 |
| MTH 115 | HLT/PED |
| SAF 127 | IND 230 |
| SDV 100 | MEC 162 |

### Mechatronics Technology Specialization (01)

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| ENG 111* | College Composition I | 3 |
| HLT/PED[1] | Health or Physical Education | 1 |
| ITE 115 | Introduction to Computer Applications and Concepts | 3 |
| MTH 115* | Tech. Mathematics (or MTH 166) | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 3 |
| E[2] | Social Science Elective (List A) | 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 |
| MEC 119 | Introduction to Basic CNC and CAM | 3 |
| MEC 155 | Mechanisms | 2 |
| MEC 162 | Applied Hydraulics and Pneumatics | 3 |
| PHY 201-202* | General College Physics I-II | 8 |
| SAF 127 | Industrial Safety | 2 |
| E[3] | Technical Electives | 5 |
| **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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[3] Faculty advisor approved electives should be chosen from the following prefixes and may be substituted to align with actual work experience: AIR, ARC, BLD, CIV, DRF, EGR, ELE, ETR, ENE, GIS, IND, MAC, MEC, PHY, TEL and WEL.*

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

| Second Year/Fall | Spring |
|---|---|
| BLD 111 | ELE 239 |
| ETR 286 | IND 290 |
| MEC 119 | MEC 155 |
| PHY 201 | PHY 202 |
| Social Science | Humanities/Fine Arts |
| Technical Elective | Technical Elective |

ASSOCIATE OF APPLIED SCIENCE DEGREE (718)

# Technical Studies cont'd

**Purpose:** This curriculum is designed to prepare students for the challenges of designing, promoting, auditing, managing, and implementing energy systems in today's society of rapidly changing, energy related industries and residential structures. Energy management students study conventional energy generation and distribution as well as alternative energy with wind, solar(PV,) solar(thermal,) geothermal, energy efficiency, and energy production systems to develop an understanding of the challenges and opportunities in developing a renewable energy economy.

**Program Objectives:** Targeted occupations include Energy Auditor, Energy Manager, Energy Rater, Energy Consultant, Home Performance Consultant, Building Performance Consultant, Home Energy Rater, and Energy Engineering Technician.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5 and 6.

It is strongly recommended that developmental education requirements be completed as soon as possible.

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

## Energy Management Specialization (02)

| Curriculum and Other Requirements | | Credits |
|---|---|---|
| **General Education Core Courses** | | |
| 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 | Intro to Mathematics (or MTH 115) | 3 |
| SDV 100 | College Success Skills (or SDV 101) | 1 |
| E[2] | Humanities/Fine Arts Elective (List A) | 3 |
| E[2] | Social Science Elective (List A) | 3 |
| **Energy Management and Related Courses** | | |
| AIR 281-282 | Energy Management I-II | 6 |
| BLD 110 | Introduction to Construction | 3 |
| BLD 111 | Blueprint Reading and the Building Code | 3 |
| DRF 201 | Computer Aided Drafting & Design | 3 |
| ELE 130 | Electricity | 4 |
| ELE 138 | National Electric Code | 2 |
| ELE 147* | Electrical Power & Control Systems | 3 |
| ELE 176 | Introduction to Alternative Energy | 3 |
| ELE 225 | Electrical Control Systems | 4 |
| ENE 100 | Conventional and Alternative Energy Applications | 4 |
| IND 290 | Coordinated Internship | 3 |
| MEC 155 | Mechanisms | 2 |
| PHY 131 | Applied Physics I | 4 |
| SAF 127 | Industrial Safety | 2 |
| E[3] | Energy Management Elective | 3 |
| **Total Minimum Credits for Degree** | | **66** |

*[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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

*[3] Faculty advisor approved energy management electives are strongly recommended to be chosen from the following prefixes: PV- ELE 177, Wind - ELE 178, or Solar Thermal - ENE 105.*

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

### Suggested Schedule

| First Year/Fall | Spring | Second Year/Fall | Spring |
|---|---|---|---|
| BLD 111 | BLD 110 | AIR 281 | AIR 282 |
| ELE 130 | ELE 138 | DRF 201 | HLT/PED |
| ELE 176 | ENE 100 | ELE 147 | IND 290 |
| ENG 111 | ITE 115 | ELE 225 | Energy Mng Elective |
| SAF 127 | MEC 155 | PHY 131 | Humanities/Fine Arts |
| SDV 100 | MTH 120 | | Social Science Elective |

# VIRGINIA WESTERN

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This curriculum is designed to prepare students for the challenges of designing, promoting, auditing, managing, and implementing energy systems in today's society of rapidly changing energy related structures.

# Veterinary Technology

**Distance Learning Program**

**Offered through partnership with Blue Ridge Community College (BRCC)**

This curriculum 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:** This curriculum is designed to prepare students as veterinary technicians.

**Program Objectives:** 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.

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.

**Developmental Requirements:** Students who do not place into college-level English on the placement test will be required to take developmental courses.

Students who do not demonstrate proficiency on the placement test in the following mathematical units will be required to complete developmental courses: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9.

**Admissions Requirements:** Students who plan to complete the program through distance education at Virginia Western should follow the BRCC application instructions located at *http://community.brcc.edu/vettech/index.php/admission/*. Applications are due to Blue Ridge Community College by January 31st.

For more information please visit the Veterinary Technology Department at BRCC at *http://community.brcc.edu/vettech/.*

**Program Note:** It is the student's responsibility to verify that transcripts have been received at BRCC. Transfer credits are evaluated by the registrar. BRCC transmits this program using compressed video technology. Courses will be offered in sequence to allow a student who takes every course to finish in 9 semesters.

Students will be required to travel to the Weyers Cave Campus three times during the semester for laboratory work and practical exams.

Graduates of this program are eligible to take the National Veterinary Technician Exam (NVTE).

Although this program is not designed for transfer, articulation agreements with four-year institutions may be available. Contact the VWCC program head for details.

# 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 | 3 |
| SDV 100 | College Success Skills | 1 |
| CHM 111* | College Chemistry I | 4 |
| HLT/PED | Health or Physical Education | 2 |
| E[1] | Humanities/Fine Arts Elective (List A) | 3 |
| E[1] | Social Science Elective (List A) | 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] Electives must be chosen from the specific list referenced in the curriculum requirements above. List A and List B electives can be found on the Approved List of Transfer courses.*

** This course has a requisite. Requisites 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:** This curriculum is designed to prepare students to become water or wastewater plant operators in municipal and industrial treatment facilities and laboratories.

**Program Objectives:** Coursework in this program academically prepares students to sit for the state certification exam required for a water or wastewater operator's license. 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 Wastewater 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 requirements for admission to credit-level coursework established by the college.

| 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/Wastewater Operations ..... | 3 |
| ENV 149 ..... Wastewater Treatment Plant Operations ..... | 3 |
| SAF 127 ..... Industrial Safety ..... | 2 |
| **Total Minimum Credits for Certificate ..... 17** | |

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

**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 (221-995-47)

# Welding: Welding and Metal Processing

**Purpose:** This curriculum is designed to prepare students for entry-level positions in production type welding.

**Program Objectives:** Employment opportunities include arc, gas, mig, and/or tig welder or metal fabricator.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

**Developmental Requirements:** To be successful in this program, students must have proficiency in oral and written communication skills and general mathematics.

**Program Notes:** The purchase of personal safety equipment is the financial responsibility of the individual student.

| Curriculum and Other Requirements<br>Welding and Metal Processing Courses | Credits |
|---|---|
| DRF 161 ..... Blueprint Reading I | 2 |
| SAF 127 ..... Industrial Safety | 2 |
| WEL 120 ..... Introduction to 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 requisite. Requisites 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:** This program is designed to provide both knowledge and skills related to understanding the dimensions of wellness for occupations in the health, fitness, senior health care, health care support and health related non-profit sector. It also provides post-secondary preparation for entry-level health related career opportunities or career advancement. Graduates may continue their studies in the Exercise Science and Personal Training certificate. Specific courses in this certificate provide in-depth knowledge of lifestyle factors that influence personal health status.

**Program Objectives:** Employment opportunities include entry-level positions in health related non-profit organizations and foundations.

**Admission Requirements:** Applicants must meet the requirements for admission to credit-level coursework established by the college.

| Curriculum and Other Requirements | Credits |
|---|---|
| **General Education Core Courses** | |
| PSY 200 ..... Principles of Psychology (or PSY 230) | 3 |
| SDV 100 ..... College Success 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 | PED Elective |
| SDV 100 | |

# 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 corequisites 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 academic deans and the Vice President 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

the 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 Vice President 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** (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** (3 CR) Prerequisite: MTE 1, 2, and 3. 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: MTE 1, 2 and 3. 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 per week.

**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 per week.

**ACC 215 - Computerized Accounting** (3 CR) Prerequisite or corequisite ACC 211 or equivalent. 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. 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 232 Domestic Violence** (3 CR) Surveys historical issues that have affected family violence. Examines current trends in the context of the criminal justice system. Lecture 3 hours per week.

**ADJ 234 Terrorism and Counter-Terrorism** (3 CR) Surveys the historical and current practices of terrorism that are national, transnational, or domestic in origin. Includes biological, chemical, nuclear, and cyber-terrorism. Teaches the identification and classification of terrorist organizations, violent political groups and issue-oriented militant movements. Examines investigative methods and procedures utilized in counter terrorist efforts domestically and internationally. 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.

# AIR – Air Conditioning and Refrigeration

**AIR 121 Air Conditioning and Refrigerati** (3 CR) Prerequisite: MTE 1, 2 and 3 or equivalent. Pre/Corequisite: ELE 130 or ELE 133. Studies refrigeration theory, characteristics of refrigerants, temperature, and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Presents charging and evaluation of systems and leak detection.

Explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**AIR 122 Air Conditioning and Refrigeration II** (3 CR) Prerequisite: AIR 121. Corequisite: ELE 130 or ELE 134. Studies refrigeration theory, characteristics of refrigerants, temperature, and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Presents charging and evaluation of systems and leak detection. Explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. 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 water 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 AIR 238. 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. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**AIR 238 Advanced Troubleshooting and Service** (3 CR) Prerequisites: ELE 130 or ELE 133. Presents advanced service techniques on wide variety of equipment used in refrigeration, air conditioning, and phases of heating and ventilation and controls. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**AIR 281-282 Energy Management I-II** (3 CR) (3 CR) Introduces methodology for residential audits covering heat flow analysis, construction methods and materials. Discusses effects of life styles on energy consumption, conservation and practices, renewable energy sources, calculating cost and savings, interviewing and education techniques. Introduces commercial and industrial energy audits, methodology for the performance of audits covering heat flow analysis, construction methods and materials. 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 121 Architectural Drafting I** (3 CR) Introduces techniques of architectural drafting, including lettering, dimensioning, and symbols. Requires production of plans, sections, and elevations of a simple building. Studies use of common reference material and the organization of architectural working drawings. Requires development of a limited set of working drawings, including a site plan, related details, and pictorial drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 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.

# 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 140 Introduction to Graphic Skills** (3 CR) Teaches basic studio skills and concepts. Emphasizes concept development and problem solving using traditional art materials and computer techniques. Uses current graphic software applications. Lecture 2 hours, Laboratory 3 hours, Total 5 hours per week.

**ART 141 Typography I** (3 CR) Prerequisites: ART 131 and ART 140. 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, and uses current technologies for copy fitting and hands-on typesetting problems. Lecture 2 hours. Studio instruction 3 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 122 or divisional approval; for ART 242, the prerequisites are ART 122, ART 241 or divisional approval. 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 131 or divisional approval; for ART 244: the prerequisites are ART 131, ART 243 or divisional approval. 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 131-132; ART 241 or ART 243 or divisional approval. 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 131-132, ART 140, 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 2 hours. Studio instruction 3 hours. Total 5 hours per week.

**ART 282 Graphic Techniques** (3 CR) Prerequisites: ART 140, 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 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ART 283-284 Computer Graphics I-II** (3 CR, 3 CR) Prerequisite: ART 140. 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. Studio instruction 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 divisional approval. Lecture 1 hour. Studio instruction 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 American Sign Language III** (3 CR) Prerequisites: ASL 102. 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 per week.

## 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** (3 CR) Prerequisite: AST 101. Develops keyboarding and document production skills with emphasis on preparation of specialized business documents. 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. Teaches techniques of oral and written communications. 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, word processing, databases, and spreadsheets. Emphasizes document production to meet business and industry standards. Lecture 3 hours per week.

**AST 236 Specialized Software Applications** (3 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 hours per week.

**AST 253 Advanced Desktop Publishing I** (3 CR) Prerequisite AST 101 or equivalent and experience in using a word processing package. Introduces specific desktop publishing software. Teaches document layout and design, fonts, type styles, style sheets, and graphics. Lecture 3 hours per week.

## AUB - Auto Body

**AUB 116 Auto Body Repair** (4 CR) Teaches collision straightening procedures and use of equipment, planning repair procedures, disassembly techniques, body fastening systems, glass removal and replacement and panel repair and alignment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

## AUT – Automotive Analysis and Repair

**AUT 101 Introduction to Automotive Systems** (4 CR) Introduces fundamental systems of automobile, the engine fuel, exhaust, electric, ignition, lubrication, cooling, transmission, steering, brake and suspension systems. Teaches theory and function of each system. Demonstrates operation. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**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 4 hours. Laboratory 3 hours. Total 7 hours per week.

**AUT 241 Automotive Electricity I** (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 251 Automatic Transmissions** (3 CR) Studies several types of automatic transmissions, torque converters, and their principles of operation. Includes adjustment, maintenance, and rebuilding. Lecture 2 hours. Laboratory 3 hours. Total 5 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 1 Foundations of Biology** (4 CR) Develops a basic understanding of plant and animal form, function, and relationships. Prepares students who have a deficiency in high school biology. May be repeated for credit. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**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 successful completion of all required developmental English courses. 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. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours 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. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**IO 141 Human Anatomy and Physiology I** (4 CR) Prerequisite: BIO 101 or high school Biology within the past 5 years. Integrates anatomy and physiology of cells, tissues, organs, and systems of the body. Integrates concepts of chemistry, physics and pathology. Lecture 3 hours per week. Laboratory 2 hours per week. Total 5 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 human body. Integrates concepts of chemistry, physics and pathology. Lecture 3 hours per week. Laboratory 2 hours per week. Total 5 hours per week.

**BIO 145 Human Anatomy and Physiology for the Health Sciences** (4 CR) Introduces human anatomy and physiology primarily to those planning to pursue an AAS degree in nursing or other allied health professions. Covers basic chemical concepts, cellular physiology, as well as the anatomy and physiology of human organ systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**BIO 193 Studies in Human Anatomy & Physiology** (4 CR) Presents a concise overview of anatomy and physiology, encompassing the musculoskeletal system and organ systems of the human body. Studying the systems at the cellular and gross level with an introduction to disease states. Lecture 3 hours. Laboratory 3 hours. Total 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, NAS 185 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 hours. Total 6 hours 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.

**BIO 298 Seminar and Project** (1-5 CR) Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

## 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 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 relate 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.

## BCS – Broadcasting

**BCS 110 Fundamentals in Video Production** (4 CR) Studies the use of video equipment and the application of production techniques and aesthetics in electronic media, and develops fundamental production skills through hands on experience with cameras, video tape records, video seitcher, graphic computers, and lighting instruments. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**BCS 117 Electronic Journalism** (3 CR) Prerequisite: ENG 111. Teaches and provides practical training in electronic news reporting, writing, editing, and stacking (organization). Studies electronic news ethics and responsible news gathering and reporting in a free society. Lecture 3 hours per week.

**BCS 140 Introduction to Mass Media** (3 CR) Studies the development of mass media communication, including the history and technological evolution of print and electronic media. Emphasizes mass communication in the United States. Lecture 3 hours per week.

## BSK - Basic Skills

**BSK 1 Whole Numbers** (1 CR) Covers whole number principles and computations. Credits not applicable toward graduation. Lecture 1 hour 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: MTE 1, 2 and 3. Applies mathematical operations to business process and problems, such as wages and payroll, sales and property taxes, checkbook records and bank reconciliation, depreciation, overhead, distribution of profits and 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 corequisite: 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 management functions of planning, organizing, leading, and controlling. Focuses on application of 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. May use case studies and/or management decision models to analyze problems in developing and implementing a business strategy while creating and maintaining competitive advantage. Lecture 3 hours per week.

**BUS 205 Human Resource Management** (3 CR) Introduces employment, selection, and placement of personnel, forecasting, job analysis, job descriptions, training methods and programs, employee evaluation systems, compensation, benefits, and labor relations. 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 222 - Business Statistics II** (3 CR) Prerequisite BUS 221 or division approval. Continues study of inferential statistics and application of statistical techniques and methodology in business. Includes analysis of variance, regression and correlation measurement of business and economic activity through the use of index numbers, trend, cyclical, and seasonal effects and the Chi-Square distribution and other non-parametric techniques. 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.

**BUS 285 - Current Issues in Management** (3 CR) Pre/Corequisite: BUS 205. Designed as a capstone course for management majors, the course is designed to provide an integrated perspective of the current issues and trends in business management. Contemporary issues will be explored in a highly participatory class environment. 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 corequisites: CHD 120 and CHD 215 or divisional approval. 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, CHD 165 and CHD 215 or divisional approval. 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) Prerequisites: CHD 118, CHD 120, CHD 145-146, CHD 165-166, CHD 210, CHD 215-216, and CHD 270. Corequisites: CHD 119, CHD 205 and CHD 265. This is considered a capstone course and will require cumulative work from previous courses. 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: MTE 1, 2, 3, 4, 5 and 6; and a placement recommendation for ENG 111 or successful completion of all required developmental English courses. Introduces basic principles of inorganic, organic, and biological 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: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9; and a placement recommendation for ENG 111 or successful completion of all required developmental English courses. 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. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**CHM 112 College Chemistry II** (4 CR) Prerequisite: 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. 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. Lecture 3 hours per week.

**CHM 245 Organic Chemistry Laboratory I** (2 CR) Prerequisite: CHM 112. Corequisite: CHM 241. Includes qualitative organic analysis. 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. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**CHM 260 Introductory Biochemistry** (3 CR) Prerequisite CHM 112 or divisional approval. Explores fundamentals of biological chemistry. Includes study of macromolecules, metabolic pathways, and biochemical genetics. Lecture 3 hours per week.

**CHM 261 Biochemistry Lab** (1 CR) Provides hands on lab experiences designed to reinforce the fundamentals of biological chemistry taught in CHM 260 such as biochemistry assays, enzyme kinetics, enzyme purification, chromatography, electrophoresis and use of western blots. Laboratory 3 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) Corequisites: CSC 100 or equivalent or divisional approval and MTH 173 or equivalent (MTH 175) or divisional approval. 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. Corequisite: MTH 174 or equivalent (MTH 176) or divisional approval. 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 complete 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 manikins, 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, and client education 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 their supporting structures. Lecture 2 hours per week.

**DNH 146 Periodontics for Dental Hygienist** (2 CR) Introduces the theoretical and 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. Exposes student to current advances in dentistry. Includes 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 128 Geometric Dimensioning and Tolerancing** (3 CR) Prerequisite: DRF 201 or divisional approval. Teaches use of a positional tolerance system, its relationship to coordinate tolerance systems, and other aspects of industry standard drafting practices based on the current ASME Y14.5 standard. Covers the standard dimensioning practices in the architectural, civil, mechanical, electrical and other industries. Lecture 3 hours per week.

**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; MTE 1, 2 and 3 or divisional approval. 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 divisional approval. 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 divisional approval. 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 divisional approval. 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.

**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 per week.

**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.

**EDU 114 Driver Task Analysis** (3 CR) Prerequisite: Must be eligible for ENG 03 and 05 or ESL 13. Introduces the "driver task" as related to the highway transportation system and factors that influences performance ability. Prepares students so they may be eligible to take certification exams for driving school instructors in both public and private schools. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EDU 214 - Instructional Principles of Driver Education** (3 CR) Prerequisite: EDU 114. Analyzes rules and regulations that govern the conduct of Driver Education programs with special emphasis on organization and administration. Includes uses in the classroom, driving range and on the street. Prepares students so they may be eligible to take the state certification exam in driver education. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EDU 287 - Instructional Design for Online Learning** (3 CR) Prepares educators to design online courses that encourage active learning and student participation. Focuses on instructional design practices including the development of content tied to learning objectives and a peer-based approach to evaluating courses. Lecture 3 hours 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 computer software such as Inventor, MATLAB, Excel, and LabVIEW. 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) Corequisites: 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 FORTRAN or C++ and elementary numerical methods. Lecture 3 hours per week.

**EGR 126 Computer Programming for Engineers** (3 CR) Corequisite: 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) Corequisite: MTH 116 or equivalent. Presents economic analysis of engineering alternatives. Studies economic and cost concepts, calculation of economic equivalence, comparison of 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. Corequisite: 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) Corequisite: 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) Prerequisite: MTH 176 and 178. Corequisite: 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) Corequisite: 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. Corequisite: 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) Prerequisite: IND 290. 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. Lecture 1 hour per week.

# ELE – Electrical Technology

**ELE 110 Home Electric Power** (3 CR) Corequisite: ELE 133 or divisional approval. 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** (4 CR) Prerequisite: MTE 1, 2 and 3. Covers DC and AC theory (FOR NON-ELECTRICAL STUDENTS), with some introduction to electrical machines. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 133-134 Practical Electricity I-II** (3 CR, 3 CR) Prerequisite: MTE 1, 2 and 3. 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, including fundamentals of motors and controls. 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) Prerequisite: ELE 133 or divisional approval. Teaches purpose and interpretation of the National Electrical Code as well as familiarizations with various charts, code rulings, and wiring methods. Prepares the student to take the Journeyman-Level Exam. Lecture 2 hours per week.

**ELE 147 Electrical Power and Control Systems** (3 CR) Prerequisite: ELE 130, ELE 134 or equivalent. 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 159 Electrical Motors** (3 CR) Teaches practical applications and fundamentals of A.C. and D.C. machines. Includes the concepts of magnetism and generators used in electrical motor applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ELE 176 Introduction to Alternative Energy Including Hybrid Systems** (3 CR) Prerequisites: MTE 1, 2 and 3. Corequisite: 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 225 Electrical Control Systems** (4 CR) Studies components, equipment and circuits that are used to control the operation of electrical machines. Explains the physical and operating characteristics of various electromagnetic, static, and programmable control devices. Investigates control schemes used to accomplish specific control objectives. 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 divisional approval. Examines installation, programming, interfacing, and concepts of troubleshooting programmable controllers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ELE 293 Studies in Electrical Power and Control Systems** (3 CR) Prerequisite: ETR 114. Studies the theory and operation of rotating machines, transformers, AC power distribution and control systems used in industrial applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ELE 298 Seminar and Project in Electrical Engineering** (3CR) Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. Lecture 3 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 hour 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) Prerequisite: EMS 100 or equivalent or CPR certification at the Health Care Provider level. Co-requisite: EMS 120. Prepares student for certification as a Virginia and National Registry EMT-Basic. Focuses on 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 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. Focuses on 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) Continues 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 corequisite to both EMS 111 and EMS 113. Laboratory 2 hours 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) Corequisite: 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** (3 CR) Prerequisites: EMS 151 and EMS 153. Pre- or corequisite: 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 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EMS 170 ALS Internship** (1 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 hours per week.

**EMS 172 ALS Clinical Internship II** (1 CR) Corequisite: 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 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 divisional 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.

# ENF - English Fundamentals

**(Effective Spring 2013)**

**ENF 01 Preparing for College English I** (8 CR) Prerequisite: Qualifying Placement Score. Provides integrated reading and writing instruction for students who require extensive preparation to succeed in college-level English courses. Students will place into this course based on placement test scores. Upon successful completion and faculty recommendation, students will move into Preparing for College English III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Lecture 8 hours per week.

**ENF 02 Preparing for College English II** (4 CR) Prerequisite: Qualifying Placement Score. Provides integrated reading and writing instruction for students who require intermediate preparation to succeed in college-level English courses. Students will place into this course based on placement test scores. Upon successful completion and faculty recommendation, students will move into Preparing for College English III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Lecture 4 hours per week.

**ENF 03 Preparing for College English III** (2 CR) Prerequisite: Qualifying Placement Score. Provides integrated reading and writing instruction for students who require minimal preparation to succeed in college-level English courses but still need some preparation to succeed. Students will place into this

course based on placement test scores. Credit is not applicable toward graduation. Lecture 2 hours per week.

# ENG – English

**ENG 1 Preparing for College Writing I** (4 CR) Helps students discover and develop writing processes needed to bring their proficiency to the level necessary for entrance into 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 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 hours per week.

**ENG 4 Preparing for College Reading I** (4 CR) Prepares students to be successful in college-level reading assignments with developmentally appropriate materials. Emphasizes strategies within the reading process to help students 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 9 Individualized Instruction in Writing** (2 CR) Corequisite: ENG 111. Focuses on individual writing needs as determined by the student and instructor. Provides support for students simultaneously enrolled in other courses or who want additional writing instruction in a tutorial setting. Lecture 2 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) Prerequisite: Divisional approval. 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) Prerequisite: ENG 112 or divisional approval. Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. 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 or divisional

approval. 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 or divisional approval. 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) Prerequisite: ENG 112 or divisional approval. Studies selected mythologies of the world, emphasizing their common origins and subsequent influence on human thought and expression. Involves critical reading and writing. Lecture 3 hours per week.

**ENG 278 - Appalachian Literature** (3 CR) Prerequisite: ENG 112 or divisional approval. Examines selected works of outstanding authors of the Appalachian region. Involves critical reading and writing. 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 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 divisional 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 divisional 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 understand proper field techniques in 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 DC and AC Fundamentals I** (4 CR) Prerequisite: MTE 1, 2 and 3. 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 114 DC and AC Fundamentals II** (4 CR) Prerequisite: ETR 113. Corequisite: 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) Corequisite: ETR 141-142. Provides laboratory and shop experience as applied to basic electronic devices, circuits, and systems with emphasis on practical measurements. Laboratory 3 hours 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 corequisite 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, BUS 125. Pre/Corequisite: 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 of 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 hours 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 spoken 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.

# 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: 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.

# GER - German

**GER 101-102 Beginning German I-II** (4 CR) (4 CR) Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Lecture 4 hours per week.

**GER 201-202 Intermediate German I-II** (4 CR) (4 CR) Prerequisite: GER 102 or equivalent. For GER 202 Prerequisite: GER 201. Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Lecture 4 hours per week.

# GIS – Geographic Information Systems

**GIS 101 Introduction to Geospatial Technology I** (3 CR) Prerequisite: Basic computer knowledge including file management, mouse usage and keyboarding skills; MTE 1, 2 and 3 or divisional approval. 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 location and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology. Lecture 3 hours per week.

**GIS 102 Introduction to Geospatial Technology II** (3 CR) Prerequisite: GIS 101. 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. Lecture 3 hours per week.

**GIS 200 Geographical Information Systems I** (3 CR) Prerequisite: EGR 216 or ITE 115 or equivalent and MTE 1, 2 and 3, or divisional 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) Prerequisite: GIS 201 or divisional approval. 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 as 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) Prerequisite: GIS 201 or divisional approval. 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 successful 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 successful 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 130 Healthcare Information Systems** (3 CR) Teaches basic concepts of microcomputer software (to include operating systems, word processing, spreadsheets, and database applications). Focuses on microcomputer applications and information systems in the Healthcare environment. Provides a working introduction to electronic health information systems for allied health, teaching students how the adoption of electronic health records affects them as future healthcare professionals. 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** (2 CR) Prerequisite: All curriculum requirements must be completed. Corequisite: HIM 254. Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Lecture 2 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) Prerequisite: MTE 1 and 2. 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. Pre/Corequisite: HLT 144. 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 per week.

**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 per week.

**HIM 290 Coordinated Internship II** (1–5 CR) Prerequisite: All curriculum requirements must be completed. Divisional 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. HIS 111 covers ancient times to 1650. HIS 112 covers 1650 to present. HIS 111 and 112 may be taken out of sequence. 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. 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 241-242 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. Lecture 3 hours per week.

**HIS 253-254 - History of Asian Civilizations I-II** (3 CR, 3CR) Surveys the civilizations of Asia from their origins to the present. 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** (3 CR) Focuses on the principles and techniques of safety, first aid, and cardiopulmonary resuscitation. Lecture 3 hours per week.

**HLT 105* Cardiopulmonary Resuscitation** (1 CR) Equivalent to EMS 100. 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 CR) Introduces students to the dimensions of wellness including the physical, emotional, environmental, spiritual, occupational, and social components. Lecture 2 hours per week.

**HLT 125 Anatomy and Physiology for Exercise Science** (3 CR) Presents basic principles of human anatomy and physiology including the body structure, systems and functions. The course provides a foundation to build and apply concepts in the study of Exercise Science, Group Fitness, Personal Training and related fitness studies. Lecture 3 hours per week.

**HLT 135* Child Health and Nutrition** (3 CR) Focuses on the physical needs of the preschool child and the methods by which these are met. Emphasizes health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases, and safety as they relate to health, growth, and development. Lecture 3 hours per week.

**HLT 138 Principles of Nutrition** (2 CR) Studies nutrient components of food, including carbohydrates, fats, proteins, vitamins, minerals and water. Provides a behavioral approach to nutrient guidelines for the development and maintenance of optimum wellness. Lecture 2 hours per week.

**HLT 141 Introduction to Medical Terminology** (1 CR) Prerequisite: Acceptance into the AAS Nursing program. Focuses on medical terminology for students preparing for careers in the health professions. 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 the study of prefixes, suffixes, word stems, and technical terms with emphasis on 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) Prerequisite: MTE 1 and 2. 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; MTE 1 and 2. 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 hours. Total 4 hours per week.

**HLT 217 Exercise and Nutrition for Behavioral Change** (3 CR) Studies the principles of behavioral change. Applies the stages of change as it relates to motivation in the fitness and nutrition industry. Lecture 3 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 the nutritional needs of an individual. 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) Prerequisites: BIO 100, HLT 100, HLT 206, HIM 249, MTE 1 and 2. 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) Prerequisites: 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. 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 per week.

**HRI 128 Principles of Baking** (3 CR) Prerequisite or corequisite: 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 140 Fundamentals of Quality for the Hospitality Industry** (3 CR) Teaches quality in the hospitality industry, including material on the total quality management movement. Emphasizes quality from the customer's perspective. Lecture 3 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 by-products, 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 hours. Laboratory 3 hours. Total 5 hours per week.

**HRI 251 Food and Beverage Cost Control I** (3 CR) Prerequisite: MTH 120 or divisional 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 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 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** (2 CR) Corequisite: SDV 106. 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 selection. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 121 Greenhouse Crop Production I** (3 CR) Covers commercial practices related to production of floriculture crops. Considers production requirements, environmental control and management, and cultural techniques. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 198 Seminar and Project** (1 CR) Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

**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 260 Introduction to Floral Design** (3 CR) Teaches skills required for the composition of basic table arrangements. Includes the history of design styles, identification of flowers and green, identification and use of equipment, and conditioning and handling of flowers. Lecture 2 hours. Laboratory 2 hours. Total 4 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 a Horticultural Business** (3 CR) Studies the business and selling practices, which relate to wholesale and retail horticultural 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 college. Internship 4 hours per week.

## 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 the following 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 world views which comprise the diverse traditions of Native peoples. Lecture 3 hours per week.

## HMS - Human Services

**HMS 236 - Gerontology** (3 CR) Examines the process of aging; its implications in relation to health, recreation, education, transportation, meaningful work or activity, and to community resources. Emphasizes experiencing the aging process, facilitating retirement, and application of the helping relationship to work with older adults. Lecture 3 hours per week.

**HMS 251 - Substance Abuse I** (3 CR) Provides knowledge, skills, and insight for working in drug and alcohol abuse programs. Emphasizes personal growth and client growth measures in helping relationships. Stresses various methods of individual and group techniques for helping the substance abuser. Lecture 3 hours per week.

**HMS 280 - Understanding Serious Mental Illness** (3 CR) Provides an overview of current information about serious and persistent mental illnesses and their treatment. Includes a particular focus on relapse prevention and recovery. Lecture 3 hours per week.

## IND – Industrial Engineering Technology

**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 hour. Laboratory 4 hours. Total 5 hours per week.

**IND 251 Automated Manufacturing Systems I** (4 CR) Prerequisite: divisional approval. 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. Lecture 2 hours. Laboratory 4 hours. Total 6 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 Corequisite: ITD 110 or divisional approval. 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 120 - Design Concepts for Mobile Applications** (3 CR) Prerequisite: ITP 140. Provides skills for designing both Web-based and stand-alone applications for wireless devices. Details discussions of the needs for applications including mobile phones and a range of rich hand-held devices such as PDA's. Emphasizes the importance of usability, accessibility, optimization and performance to create fast-loading business enterprise applications and games. 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 divisional approval. 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 or Corequeisite: ITD 110 or divisional approval. 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: Divisional approval. 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 divisional approval. Involves in-depth instruction about the underlying architecture of databases and the handling of database administration. Lecture 4 hours per week.

**ITD 256 Advanced Database Management** (3 CR) Focuses in-depth instruction in the handling of critical tasks of planning and implementing large databases. Includes an introduction to concepts of advanced data warehousing and database configuration. 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 uses a software suite which includes word processing, spreadsheet, database, and presentation software to demonstrate skills. Recommended prerequisite keyboarding skills. 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 per week.

# ITN – Information Technology Networking

**ITN 101 Introduction to Network Concepts** (4 CR) Provides instruction in networking media, physical and logical topologies, common networking standards and popular networking protocols. Emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Includes selected topics in network implementation, support and LAN/WAN connectivity. Lecture 4 hours per week.

**ITN 107 Personal Computer Hardware and Troubleshooting** (4 CR) Includes specially designed instruction to give a student a basic knowledge of hardware and software configurations. Includes the installation of various peripheral devices as well as basic system hardware components. Lecture 4 hours per week.

**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 or corequisite: 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 115 Windows 2003 Server** (3 CR) Consists of instruction that teaches students how to manage and maintain a Microsoft Windows Server 2003 environment. Lecture 3 hours per week.

**ITN 240 Win.03 Active Directory & Network Infra. Design (AD-NID)** (4 CR) Includes instruction that teaches students how to design a Microsoft Windows Server 2003 Active Directory and network infrastructure. Lecture 4 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 divisional approval. 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 divisional approval. 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: 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 divisional approval. Provides instruction in fundamentals of Internet application design, development, and deployment using client side scripting language(s). Lecture 3 hours per week.

**ITP 160 Introduction to Game Design & Development** (3 CR) Introduces object-oriented game design and development. Provides overview of the electronic game design and development process and underlines the historical context, content creation strategies, game careers, and future trends in the industry. Utilizes a game language environment to introduce game design, object-oriented paradigms, software design, software development and product testing. Teaches skills of writing a game design document and creating a game with several levels and objects. Integrate 2D animations, 3D models, sound effects, and background music as well as graphic backgrounds. Lecture 3 hours per week.

**ITP 170 Project Management** (3 CR) Prerequisite: Divisional approval. 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 Corequisite: 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, ITP 100 and ITP 140 or divisional approval. 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 build 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 Corequisite: 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 divisional approval. Provides instruction in application and 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.

## LAT - Latin

**LAT 101-102 Elementary Latin I-II** (3 CR) (3 CR) Teaches Latin grammar and composition. Introduces the translation of Latin literature, with special selections from Caesar and other writers. Lecture 3 hours per week.

**LAT 201-202 Intermediate Latin I-II** (3 CR) (3 CR) Prerequisites: two years high school Latin or one year college Latin. Introduces the reading of classical Latin with a review of Latin grammar, forms, and syntax. Lecture 3 hours per week.

## LGL – Legal Administration

**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) Corequisite: LGL 126. 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 divisional approval. Corequisite: LGL 125. 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) Prerequisite: Successful completion of all 100 level LGL courses or divisional approval. Examines the rules of procedure in the Virginia and federal court systems, 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) Prerequisite: Successful completion of all 100 level LGL courses or divisional approval. 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: Successful completion of all 100 level LGL courses or divisional approval. 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) Prerequisite: Successful completion of all 100 level LGL courses or divisional approval. 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) Prerequisite: Successful completion of all 100 level LGL courses or divisional approval. 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) Prerequisite: Successful completion of all 100 level LGL courses or divisional approval. 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) Prerequisite: Successful completion of all 100 level LGL courses or divisional approval. 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) Prerequisite: Successful completion of all 100 level LGL courses or divisional approval. 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.

# MAC - Machine Technology

**MAC 131 Machine Lab I** (3CR) Teaches fundamental machine shop operations, bench work, layout, measuring tools, and safety. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MAC 161 Machine Shop Practices I** (3CR) Introduces safety procedures, bench work, hand tools, precision measuring instruments, drill presses, cut-off saws, engine lathes, manual surface grinders, and milling machines. Lecture 2 hours. Laboratory 2 hours. Total 4 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) Prerequisite: MTE 1, 2 and 3 or divisional approval. 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. Corequisite: 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 hour. Laboratory 2 hours. Total 3 hours per week.

**MEC 162 Fluid Mechanics – Applied 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 divisional 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 divisional 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, e-commerce and international considerations in marketing. Lecture 3 hours per week.

**MKT 110 Principles of Selling** (3 CR) Presents a fundamental, skills-based approach to selling and relationship building. Emphasizes learning effective interpersonal communication skills in all areas of the sales process through skill-building activities. Examines entry-level sales careers in retailing, wholesaling, services and industrial selling. Lecture 3 hours per week.

**MKT 220 Principles of Advertising** (3 CR) Emphasizes the role of advertising in the marketing of 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. Introduces advertising display, copy and art work preparation, printing and selection of media. Lecture 3 hours per week.

**MKT 275 International Marketing** (3 CR) Examines the role of global business as well as the environments in which they operate. Covers marketing strategies as they apply to global markets

and contrasts them with domestic 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 115-116 Technical Mathematics I-II** (3 CR, 3 CR) Prerequisites: MTE 1, 2, 3, 4, 5 and 6 or a placement recommendation for MTH 115 or MTH 116. 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: MTE 1, 2, and 3 or 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 151 Mathematics for the Liberal Arts I** (3 CR) Prerequisites: MTE 1, 2, 3, 4, and 5 or 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: MTE 1, 2, 3, 4, and 5 or 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: MTE 1, 2, 3, 4 and 5 or a placement recommendation for MTH 157. 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: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9 or 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: MTE 1, 2, 3, 4, 5, 6, 7, 8 and 9 or 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: MTH 166 or 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) Corequisite: 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) Prerequisite: MTH 175. Corequisite: MTH 176 or equivalent. Covers conic sections, polar and parametric equations, polar and parametric graphing, and calculus with vector-valued functions. 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 a placement recommendation for MTH 241. 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 a placement recommendation for MTH 271. 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) Corequisite: 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) Corequisite: 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.

# MTE - Math Essentials

**MTE 1 Operations with Positive Fractions** (1 CR) Prerequisite(s): BSK 1 or a qualifying placement score. Includes operations and problem solving with proper fractions, improper fractions, and mixed numbers without the use of a calculator. Emphasizes applications and includes U. S. customary units of measure. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

**MTE 2 Operations with Positive Decimals and Percents** (1 CR) Prerequisite(s): MTE 1 or qualifying placement score. Includes operations and problem solving with positive decimals and percents. Emphasizes applications and includes U. S. customary and metric units of measure. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

**MTE 3 Algebra Basics** (1 CR) Prerequisite(s): MTE 2 or qualifying placement score. Includes basic operations with algebraic expressions and solving simple algebraic equations using signed numbers with emphasis on applications. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

**MTE 4 First Degree Equations and Inequalities in One Variable** (1 CR) Prerequisite(s): MTE 3 or qualifying placement score. Includes solving first degree equations and inequalities containing one variable, and using them to solve application problems. Emphasizes applications and problem solving. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

**MTE 5 Linear Equations, Inequalities and Systems of Linear Equations in Two Variables** (1 CR) Prerequisite(s): MTE 4 or qualifying placement score. Includes finding the equation of a line, graphing linear equations and inequalities in two variables and solving systems of two linear equations. Emphasizes writing and graphing equations using the slope of the line and points on the line, and applications. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

**MTE 6 Exponents, Factoring and Polynomial Equations** (1 CR) Prerequisite(s): MTE 5 or qualifying placement score. The student will learn to perform operations on exponential expressions and polynomials. Students will also learn techniques to factor polynomials and use these techniques to solve polynomial equations. Emphasis should be on learning all the different factoring methods, and solving application problems using polynomial equations. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

### MTE 7 Rational Expressions and Equations

(1 CR) Prerequisite(s): MTE 6 or qualifying placement score. Includes simplifying rational algebraic expressions, solving rational algebraic equations and solving applications that use rational algebraic equations. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

### MTE 8 Rational Exponents and Radicals

(1 CR) Prerequisite(s): MTE 7 or qualifying placement score. Includes simplifying radical expressions, using rational exponents, solving radical equations and solving applications using radical equations. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

### MTE 9 Functions, Quadratic Equations and Parabolas

(1 CR) Prerequisite(s): MTE 8 or qualifying placement score. Includes an introduction to functions in ordered pair, graph, and equation form. Also introduces quadratic functions, their properties and their graphs. Credit is not applicable toward graduation. Credit for this course can be received by completing the appropriate MTT course. Lecture 1 hour per week.

## MTS - Motorsports Management & Technology

### MTS 130 Motorsports Structural Technology I

(3 CR) Prerequisite(s): MTS 125 and WEL 130. Introduces the student to the basic design and fabrication of a racecar. Develops skills for use of the tools, equipment, and materials in the production of a racecar. Emphasizes safety, accuracy, and aesthetics of the racecar and the work environment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

## MTT - Developmental Mathematics

### MTT 1 Developmental Mathematics I

(MTE 1, 2, 3, 4, 5), (1 CR) Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses and curricula. Designed for the study of one developmental math unit prescribed by the student's placement test results. Intended for students beginning their developmental mathematics requirements in MTE 1, 2, 3, 4 or 5. Credits not applicable towards graduation.

### MTT 1 Developmental Mathematics I

(MTE 6, 7, 8, 9) (1 CR) Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses and curricula. Designed for the study of one developmental math unit prescribed by the student's placement test results. Intended for students beginning their developmental mathematics requirements in MTE 6, 7, 8, or 9. Credits not applicable towards graduation.

### MTT 2 Developmental Mathematics II

(MTE 1, 2, 3, 4, 5) (2 CR) Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses and curricula. Designed for the study of two developmental math units prescribed by the student's placement test results. Intended for students beginning their developmental mathematics requirements in MTE 1, 2, 3, 4 or 5. Credits not applicable towards graduation.

### MTT 2 Developmental Mathematics II

(MTE 6, 7, 8, 9) (2 CR) Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses and curricula. Designed for the study of two developmental math units prescribed by the student's placement test results. Intended for students beginning their developmental mathematics requirements in MTE 6, 7, 8, or 9. Credits not applicable towards graduation.

### MTT 3 Developmental Mathematics III

(MTE 1, 2, 3, 4, 5) (3 CR) Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses or curricula. Designed for the study of three developmental math units prescribed by the student's placement test results. Intended for students beginning their developmental mathematics requirements in MTE 1, 2, 3, 4, or 5. Credits not applicable towards graduation.

### MTT 3 Developmental Mathematics III

(MTE 6, 7, 8, 9) (3 CR) Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses or curricula. Designed for the study of three developmental math units prescribed by the student's placement test results. Intended for students beginning their developmental mathematics requirements in MTE 6, 7, 8, or 9. Credits not applicable towards graduation.

**MTT 4 Developmental Mathematics IV** (MTE 1, 2, 3, 4, 5) (4 CR) Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses or curricula. Designed for the study of four developmental math units prescribed by the student's placement test results. Intended for students beginning their developmental mathematics requirements in MTE 1, 2, 3, 4, or 5. Credits not applicable towards graduation.

**MTT 4 Developmental Mathematics IV** (MTE 6, 7, 8, 9) (4 CR) Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses or curricula. Designed for the study of four developmental math units prescribed by the student's placement test results. Intended for students beginning their developmental mathematics requirements in MTE 6, 7, 8, or 9. Credits not applicable towards graduation.

## 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 the 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) Prerequisite: divisional approval. Introduces and surveys employment opportunities in the commercial music industry. Assists students in defining their professional goals. Lecture 1 hour per week.

**MUS 140 Introduction to Recording Techniques** (3 CR) Introduces students to the theory of and practices in digital audio. Describes basic background of the history of audio, culminating with hands-on operation of a digital audio workstation (DAW). The student is not expected to have any previous musical experience. 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 successful 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. 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) Prerequisite: NUR 290. 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) Prerequisites: Acceptance into the AAS Nursing program; 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 assessment, introducing basic concepts and needs, pharmacologic treatment and developing basic nursing skills. Includes math computational skills, basic computer instruction related to the delivery of

nursing care, introduction to nursing, legal aspects of nursing care, diagnostic testing, assessment, asepsis, body mechanics and safety, personal care, mobility, wound care, elimination, fluid and electrolytes, regulation, pain control, care of the obstetrical client, labor/ delivery and care of the newborn and medication administration and dosage calculations. Provides supervised learning. Lecture 7 hours. Laboratory 9 hours. Total 16 hours per week.

**NUR 122 Nursing Fundamentals II** (10 CR) Prerequisite: NUR 121 and NUR 135. Pre/Corequisite: 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) Prerequiste: Acceptance into the AAS Nursing program. Focuses on apothecary, metric, household conversion in medication dosage calculation for adult and pediatric clients. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates. Lecture 2 hours per week.

**NUR 238 Integrated Nursing Principles I** (10 CR) Prerequisites: NUR 115 or NUR 122 and NAS 185. 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: parental 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) Prerequisite: Acceptance into the AAS Nursing program. 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. Laboratory 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. Laboratory 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. Laboratory 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. Laboratory 2 hours per week.

**PED 107 Exercise and Nutrition I** (2 CR) Provides for the study and application of fitness and wellness and their relationship to a healthy lifestyle. Defines fitness and wellness, evaluates the student's level of fitness and wellness. Students will incorporate physical fitness and wellness into the course and daily living. A personal fitness/wellness plan is required for the 2

credit course. 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. Laboratory 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. Laboratory 2 hours per week.

**PED 120 - Yoga II** (1 CR) Prerequisite: PED 109. Focuses on the forms of yoga training emphasizing flexibility. Laboratory 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. Laboratory 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. Laboratory 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. Laboratory 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. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**PED 137 Martial Arts I** (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. Lecture 1 hour. Laboratory 2 hours. Total 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 hour. 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. Laboratory 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. Laboratory 2 hours per week.

**PED 154 Volleyball** (1-2 CR) Introduces skills, techniques, strategies, rules, and scoring. Lecture 0-1 hours. Laboratory 2-4 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. Laboratory 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. Laboratory 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. Laboratory 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. Laboratory 2 hours per week.

## PHI – Philosophy

**PHI 101 Introduction to Philosophy I** (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.

**PHI 220 - Ethics** (3 CR) Provides a systematic study of representative ethical systems. 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 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 or equivalent and a placement recommendation for ENG 111 or successful completion of all required developmental English courses. A non-calculus introductory college physics sequence. Teaches 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 116 - Normal Nutrition** (1 CR) Introduces the basic principles of good nutrition. Studies nutrients, their sources and functions, basic requirements for individuals. Includes a brief introduction to diet therapy. Lecture 1 hour 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 stages. 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 2 hours. Laboratory 3 hours. Total 5 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 1 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. Studies history, classification, sources, effects, and legalities of drugs. Emphasizes major drug classes and specific agents within each class. 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) Prerequisites: PSY 200, 201 or 202. 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. Stresses basic technical factors of image production and radiographic quality. 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** (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 3 hours per week.

**RAD 131-132 Elementary Clinical Procedures I-II** (3 CR, 3 CR) Develop advanced technical skills in fundamental radiographic procedures. Focuses on introduction to radiography, basic radiation safety, manipulation of equipment, patient care, osseous studies, skull procedures, and contrast studies. Provides clinical experience in cooperating health agencies. Clinical 15 hours per week.

**RAD 190 Coordinated Internship** (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 15 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 25 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 20 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 upon 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, Confucianism, 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 115 Therapeutic Radiation Safety** (1 CR) Presents an overview of radiation protection focusing on detection and measurement, shielding and room design, somatic and genetic effects, maximum permissible does, surveys, source handling, personnel monitoring, and organizations and agencies that guide radiation protection procedures. Lecture 1 hour per week.

**ROC 120 Radiation Oncology/Pathology I** (3 CR) Prerequisite: ROC 110. 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) Introduces students to the clinical setting and the basics of Radiation Oncology. Covers 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. Explores use of chemotherapeutic agents. 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. Allows the student to acquire the knowledge and ability to recognize inaccuracy of treatment delivery. Reviews warm-up guidelines. Lecture 2 hours per week.

**ROC 151 Introduction to Cross-Sectional Anatomy** (2 CR) Prerequisites: ROC 121. Corequisite: ROC 120. 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) Corequisite: 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, introduces the student 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 25 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 25 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. Discusses types of brachytherapy applicators and dose distributions systems and includes brachytherapy dose calculation exercises. Introduces electron beam dosimetry. Lecture 2 hours per week.

**ROC 242 Clinical Radiobiology** (2 CR) Prerequisites: ROC 110 and ROC 120. Corequisite: ROC 121. This course is an advance study into the principles of biologic responses to radiation. Focuses 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/Corequisites: All Radiation Oncology Core Courses. Designed to correlate all major radiation oncology subject areas in preparation for national certification. Lecture 2 hours per week.

# RVH - RV/Motorcycle Maintenance

**RVH 130 Motorcycle Rider Safety - Beginner** (1 CR) Studies principles and basic skills of motorcycle riding with an emphasis on safety. Includes street strategies, protective gear, and selection and care/ maintenance of motorcycles. Lecture 1 hour 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 Race and Ethnicity** (eff. Fall 2012) (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 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. Spanish is spoken in the classroom. 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 divisional 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) Prerequisite: VEN 121 or divisional approval. 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 Introduction to 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.

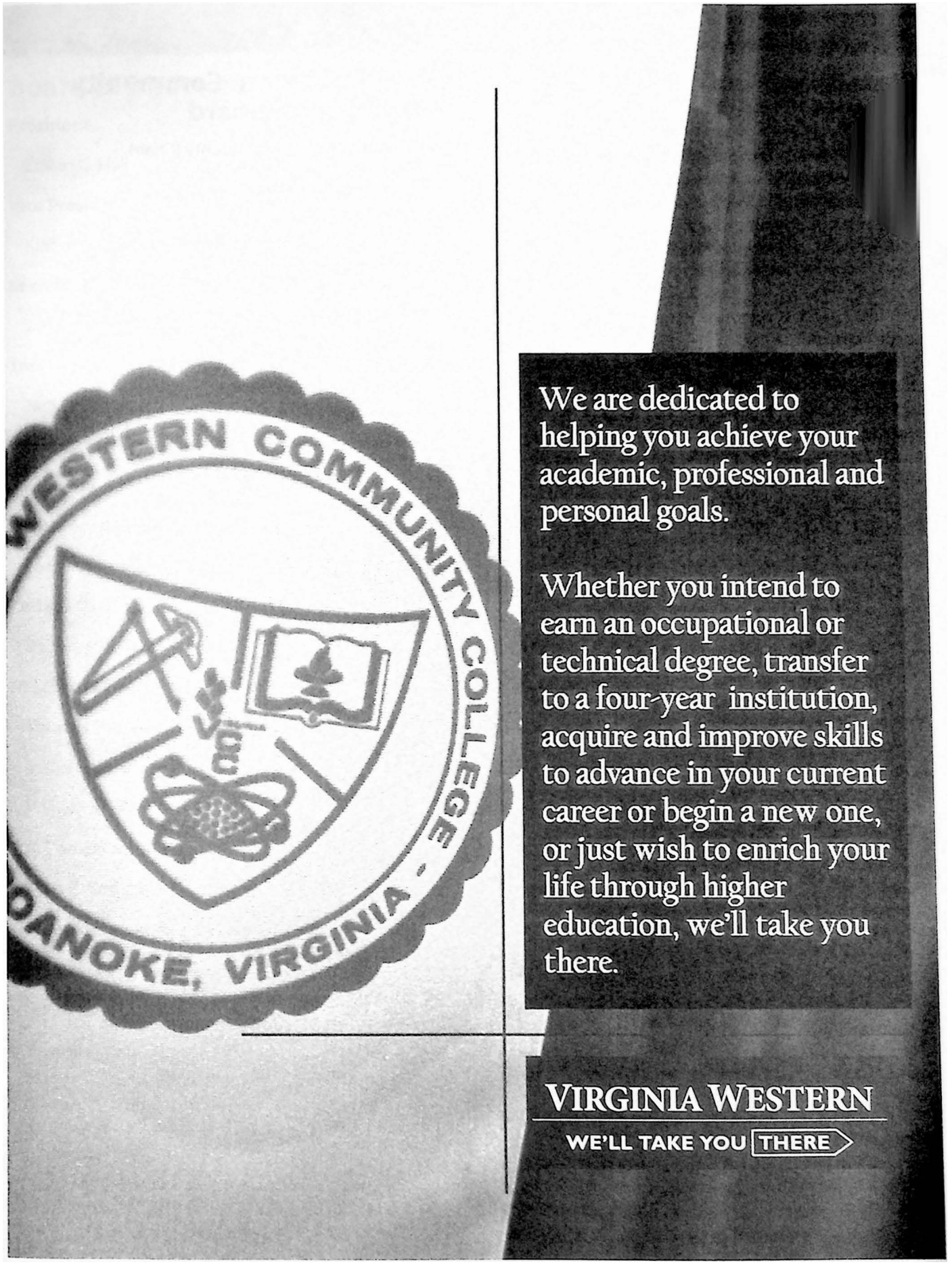
**WEL 121 ARC Welding** (2 CR) Prerequisite: WEL 120 or divisional approval. Studies the operation of AC and DC power sources, weld heat, polarities and electrodes for use in joining various alloys by the SMAW process. Covers welds in different types of joints and different welding positions. Emphasizes safety procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**WEL 130 Inert Gas Welding** (3 CR) Prerequisite: WEL 120 or divisional 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 divisional 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.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# Administrative and Professional Faculty

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B.S.-The Citadel, 1967
M.Ed.-South Carolina State College, 1972
Ed.D.-University of South Carolina, 1983

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B.A. - Virginia Tech, 1988
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B.S.-Bluefield College, 2000
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M.A.–Virginia Tech, 1990
M.B.A.–Averett University, 1992
Ph.D.–Virginia Tech, 2002

**Chitwood, Sarah H.**
*Assistant Professor, French & English as a Second Language*
B.A.–Roanoke College, 1987
M.A.–Univ. of North Carolina at Greensboro, 1995

# Teaching Faculty cont'd

**Clark, Kristel L.**
*Associate Professor, Accounting*
B.B.A.–Roanoke College, 1995
C.P.A.–1999
M.S.– Virginia Tech, 2005

**Clark, Richard L., Jr.**
*Professor, Engineering Technology*
B.S.–Virginia Tech, 1991
M.S.–Virginia Tech, 1994
Ph.D.–Virginia Tech, 1996

**Clark, Teri**
*Assistant Professor, Nursing*
B.S.–Baker University, 2005
M.S.–Walden University, 2008

**Cleiland, Carolyn P.**
*Assistant Professor, Nursing*
R.N.-University of Alabama, 1967
B.S.–Hollins University, 1984
B.S.N.–Radford University, 2000
M.S.N.-Old Dominion University, 2007

**Collyer, Betsy D.**
*Associate Professor, Administrative Management Technology and Information Systems Technology*
B.S. - Bridgewater College, 1996
M.S. - Shenandoah University, 2001

**Crawford, Robert J.**
*Associate Professor, Electrical Engineering Technology*
A.A.S.–Virginia Western Community College, 1973
B.S.–Virginia Tech, 1983

**Cunningham, Cheryl**
*Assistant Professor, Nursing*
A.A.S.–Virginia Western Community College, 1986
B.S.–Old Dominion University, 2007
M.S.–Old Dominion University, 2009

**Dameron, Nancy**
*Assistant Professor, Nursing*
B.S.–Virginia Commonwealth University, 2007
M.S.–Old Dominion University, 2010

**Davis, Linda S.**
*Associate Professor, Administrative Management Technology*
B.S.–East Tennessee State University, 1970
M.S.–University of Tennessee, 1985

**Dennis, Bonnie, S.**
*Associate Professor, Psychology*
B.A.–St. Bonaventure University, 1998
M.A.–St. Bonaventure University, 1998

**Dent, Gary L.**
*Professor, History*
B.A.–Lynchburg College, 1971
M.A.L.S.–Hollins University, 1975
D.A.–Catholic University, 1985

**Derbyshire, Paula**
*Assistant Professor, Dental Hygiene*
B.S.–Longwood College, 1980
B.S.–Virginia Commonwealth University, 1983
M.S.–Virginia Tech, 1993

**Ellis-Littlefoot, Kim C.**
*Associate Professor, Information Systems Technology*
A.A.S.–Virginia Western Community College, 1981
B.B.A.–Roanoke College, 1990
M.A.L.S.–Hollins University, 2002

**Fightmaster, James W.**
*Assistant Professor, Mathematics*
B.S.–Georgetown, 1957
M.Ed.–University of Virginia, 1965

**Fulcomer, Judith**
*Assistant Professor, Nursing*
A.S.–Hagerstown Community College, 1984
B.S.N.–Excelsior College, 1999

**Garden, Virginia E.**
*Professor, Biology*
B.A.–University of Tennessee, 1974
D.V.M.–University of Tennessee, 1980

**Gess, Ashley**
*Instructor, Biology*
B.S.–College of Charleston, 1988
M.A.–Furman University, 1995

**Gillette, Jeffrey S.**
*Professor, Biology*
A.A.S.–Monroe Community College, 1985
B.S.M.T.–Daemen College, 1987
M.S.–University of Rochester, 1993
Ph.D.–North Carolina State University, 2000

# Teaching Faculty cont'd

**Graham, Carole S.**
*Associate Professor, Radiation Oncology*
A.A.S.–Virginia Commonwealth University/ Medical College of VA, 1984
B.A.–Mary Baldwin College, 1990
M.Ed.–Virginia Tech, 2002

**Greenway, Brenda D.**
*Instructor, Radiation Oncology*
A.A.S.–Virginia Western Community College, 1980
B.S.-Bluefield College, 2007

**Gregory, Kim P.**
*Associate Professor, Early Childhood Development*
B.S.–Syracuse University, 1991
M.S.–Roosevelt University, 1995

**Hammer, Steven T.**
*Associate Professor, Mathematics*
B.S.–Millersville University of Pennsylvania, 1984
M.S.–Virginia Tech, Mathematics 1987
M.S.–Virginia Tech, Statistics, 1998

**Hanson, David C.**
*Professor, History*
B.S.-Ball State University, 1974
M.A.-Ball State University, 1975
Ed.D.-Ball State University, 1980

**Harmon, Tracy L.**
*Associate Professor, Administrative Management Technology*
B.S.–Radford University, 1985
M.S.–Radford University, 1990

**Harris, Heather A.**
*Instructor, Dental Hygiene*
B.S.–West Virginia University, 1994

**Haynes, Susan**
*Assistant Professor, Radiography*
A.A.S.-Virginia Western Community College, 1980
B.S. - Roanoke College, 1985
M.Ed. - University of Virginia, 2002

**Horine, Daniel C.**
*Instructor, Automated Manufacturing*
A.S. - Virginia Western Community College, 1998
B.S. - Old Dominion University, 1999

**Huff, Stephen L.**
*Associate Professor, Communication Design*
A.A.S.–New River Community College, 1986
B.F.A.–Virginia Commonwealth University, 1990
M.A.L.S.–Hollins University, 1998

**Isaacs, Morgan**
*Assistant Professor, Nursing*
A.S.–Grossmont College, 1982
B.S.N.–University of Phoenix, 1988
M.S.–Loma Linda University, 1995

**Kakouras, Ann R.**
*Associate Professor, Accounting, C.P.A.*
B.S.–Virginia Tech, 1991
M.S.–Virginia Tech, 1992

**Kurtz, Jenifer R.**
*Associate Professor, English*
B.S.–Radford University, 1997
M.A.–Radford University, 1999
C.A.S. - Hollins University, 2010

**Lamanca, Shirl Duke**
*Associate Professor, Radiography*
Certificate–Lewis-Gale School of Radiologic Technology, 1968
A.A.S–Virginia Western Community College, 1977
B.S.–Roanoke College, 1983
MSEd.–Virginia Tech, 1989

**Lofthus, II, Owen W.**
*Associate Professor, Chemistry*
B.S.–George Mason University, 1992
M.A.–University of Texas, 1996

**Loritsch, Mary B.**
*Professor, Radiologic Technology*
B.S.–Radford University, 1972
A.A.S.–Virginia Western Community College, 1974
M.A.Ed.–Virginia Tech, 1983
Ed.D.–Virginia Tech, 1995

**Martin, Sarah J.**
*Assistant Professor, Mathematics*
B.S.–Roanoke College, 1975
M.A.Ed.–Virginia Tech, 1977

**McDaniel, Margaret P.**
*Associate Professor, English*
B.A.–Virginia Tech, 1970
M.A.–Virginia Tech, 1971
M.S.-Virginia Tech, 1981

# Teaching Faculty cont'd

**Moore, Hunter**
*Assistant Professor, Engineering Technology*
B.S –Virginia Tech, 2006
M.S.-The Pennsylvania State University

**Moore, Melaine J.**
*Associate Professor, Practical Nursing*
A.S.N.–Bluefield State College, 1987
B.A.–Bluefield State College, 1992
M.S.N.–Bellarmine University, 2003

**Moore, Mona R.**
*Associate Professor, English*
B.S –Radford University, 1971
M.A.L.S.–Hollins University, 1990
C.A.S–Hollins University, 2009

**Moser, Ann H.**
*Professor, English*
B.S.–Barton College, 1972
M.A.–Radford University, 1988
Ph.D.–Virginia Tech, 2002

**Nunn, Judith A.**
*Associate Professor, Nursing*
A.A.S.-Bucks County Community College, 1976
B.S.N.–Gwynedd-Mercer College, 1994
M.Ed.–Virginia Tech, 1999

**Pepin, Antoinette L.**
*Professor, Biology*
B.S.–Virginia Tech, 1976
M.S.–Utah State University, 1982
Ph.D.–George Mason University, 1999

**Schaubach, Bryan M.**
*Associate Professor, Biology*
B.S. –Old Dominion University, 1994
Ph.D. –University of Texas, Health Science Center at Houston, 2003

**Schopp, John**
*Instructor, Culinary Arts*
A.A.S.–Virginia Western Community College

**Scott, Alexander**
*Assistant Professor, Spanish*
B.A.-Autonomous University of Santo Domingo, Dominican Republic
M.B.A.-APEC University, Dominican Republic
M.A.-The University of Jaén, Spain

**Scott, Jeffery K.**
*Associate Professor, Information Systems Technology*
B.S. - Liberty University, 2000
M.A. - Hollins University, 2007

**Shelor, Joshua A.**
*Instructor, Mathematics*
A.S.–Virginia Western Community College, 2006
B.S.– Virginia Tech, 2008
M.S.–Virginia Tech, 2011

**Sherman, Ruth A.**
*Assistant Professor, Mathematics*
A.A.S.–Paul Smiths College, 1981
B.A.–State University of New York, 1983
M.S.–Virginia Tech, 1986

**Sieveking, Brian S.**
*Associate Professor, Art & Communication Design*
B.A.–Virginia Tech, 1987
M.A.L.S.–Hollins University, 2001

**Simpson, Thelma**
*Instructor, Spanish*
A.A.–Virginia Western Community College, 1993
B.A.–Roanoke College, 1996
M.S.–Virginia Tech, 2005

**Snare, Bryan**
*Instructor, Mathematics*
B.S.–University of Virginia's College at Wise, 2006
M.A.–Appalachian State University, 2007

**Strom, Jeffrey D.**
*Associate Professor, Business Management*
B.B.A.–Radford University, 1992
M.B.A.–Virginia Tech, 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

# Teaching Faculty cont'd

**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

**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.–Virginia Tech, 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

**Faculty Emeritus**

**2012**
Richard Crites

**2011**
Gordon Hancock

**2010**
Ethel Bonds
Hugh Smith

**2009**
Andrew Archer
Elizabeth Payne

# Staff

## Academic & Student Affairs

Lorry Conklin ..... Assistant to the Vice President
Kathy Holland ..... Class Scheduling Specialist

## Admissions

Heather Hunter ..... Office Manager
Debbie LaRocca ..... Enrollment Services Technician
Laura Overbay ..... Enrollment Services Technician
Meg Patterson ..... Admissions & Records Coord/Registrar
Katelyn Quinley ..... Enrollment Services Technician
Courtney Yeager ..... Enrollment Services Technician

## Advising & Retention Services

Lee Allen ..... Academic Advisor
Cathy Falligant ..... Admin. & Office Specialist
Desiree Frye ..... Admin & Office Specialist
Reba Hancock ..... Academic Advisor
Angela Hairston-Niblett ..... Academic Advisor
Cheryl Hilton ..... Retention Assistant
Rebecca Kraemer ..... Academic Advisor

## School of Business, Engineering and Technology

Tara Alatorre ..... HITE Grant Program Director
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
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

## Dean of Student Services Office

Bonny Simpson ..... Administrative Assistant
Sharlona Wimmer ..... Policy & Planning Specialist

## Facilities Management Services

Ray Braley ..... B&G Trades Technician
Corvin Davis ..... B&G Trades Technician
Will Dowd ..... B&G Trades Technician
Grady Hill ..... B&G Trades Technician
H.B. Ingram ..... Maintenance Technician
Johnny Johnson ..... Maintenance Technician
Judy Lienhardt ..... Administrative Assistant
Jim Ramsdell ..... HVAC Technician
Pat Rhodes ..... Trades Supervisor
Chris Smith ..... Plumber/Steamfitter
Landon Spraker ..... B&G Trades Technician
Peter Stocki ..... Electrician
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

## Financial Aid/Veterans Affairs

Michele Hilts ..... Education Support Specialist
Amy Huffman ..... Education Support Specialist
Jeff Jamison ..... Education Support Specialist
Rachel Koester ..... Admin. & Office Specialist
Mayra Vazquez-Miller ..... PeopleSoft Specialist
Michelle Webb ..... Financial Aid Grant Specialist
Holly Woodson ..... Education Support Specialist

# Staff cont'd

## 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 Technology Specialist
Cameron Carroll.....Information Technology Specialist
Layne Compton...Admin Application Support Supervisor
Melanie Crouch.....Programmer/Analyst
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 Graphic Designer
Jaime Shetrone.....Web Developer
Tim Stockton.....Systems Administrator
Cathy Swain.....Admin. Application Programmer/Analyst
Natalie Talbott.....User Support Services Supervisor
Rick Via.....Network Administrator

## Institutional Advancement

Joe Collins.....Graphic Designer
Ruth Ebrahim.....Alumni & Development Services Coord.
Tara Nepper.....Event Planning & Scheduling Coord.
Carolyn Payne.....Scholarship & CCAP Program Coord.
Karen Rayl.....Admin. & Office Specialist

## Institutional Effectiveness

Jordan Leet.....Admin. & Office Specialist

## Learning Technology Center

Lois Beck.....Admin. & Office Specialist
Lynn Campbell-Reed.....Admin. & Office Specialist
Nancy Cook.....Learning Technology Center Manager

## Learning Technology Center cont'd

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
Lenore Trout.....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

## 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
Karin Cole.....Assistant Registrar
Jennifer Bobbit.....Student Records Specialist

## School of Science, Mathematics and Health Professions

Julia Andrews.....Administrative Assistant-Health
Anita Firebaugh.....Admin. & Office Specialist
Colleen Hailey.....Dental Hygiene Clinical Coordinator

# Staff cont'd

## School of Science, Mathematics and Health Professions cont'd

Shirley Long.....On Campus Nursing Lab Coordinator
Clay Nye.....Biology Laboratory Assistant
Mary Perry.....Administrative Assistant-Science/Math
Robin Shockley.....Chemistry Laboratory Manager
Susan Speight.....Biology Laboratory Manager
Debra Tyree.....Admin. & Office Specialist
Deborah Thompson.....Admin. & Office Specialist
Pam Woody.....Health Careers Information Specialist

## Student Activities

Natasha Lee.....Student Activities Coordinator
Nicholas Owens.....Athletic & Student Activities Coord.

## Student Recruitment

Allison Dooley.....CCAP Advisor & Recruiter
Kelsey Yardley.....Recruitment Coordinator

## REACH/Student Support Services

Mandy Jackson.....Admin. & Office Specialist
Rick Robers.....Tutor/Accommodations Coordinator

## Workforce Development

Dana Asciolla.....Admin. & Office Specialist
Candace Cassen....Greenfield Ctr. Admin. & Office Specialist
Cassandra Dove.....Greenfield Center Coordinator
Brenda Fichtner.....Franklin Ctr. Admin. & Office Specialist
Sarah Olson.....Greenfield Ctr. Admin. & Office Specialist
Paulette Parkhill.....Admin. & Office Specialist
Kerstin Plunkett.....Greenfield Ctr. Admin. & Office Specialist
Phyllis Smith.....Admin. & Office Specialist
Laura Stevens.....One Stop Center Coordinator

### Professional Emeritus

**2012**
Patricia Prevo

**2011**
Boyd Deacon

**2010**
Brenda Shepherd
Janice Stout

# Curriculum Advisory Committees

## Accounting

Melinda T. Chitwood
Partner
Brown, Edwards & Company, L.L.P.

Suzy Lawrence
Director of Accounting
Carilion Clinic

Richard B. Lester
Accounting Supervisor/Assistant Controller
Steel Dynamics, Inc.

Harry Schwarz
Partner
Dixon, Hughes, Goodman, L.L.P.

## Administration of Justice

Diane V. Brogan
Teaching Associate
Sociology & Criminal Justice
Roanoke College

Captain Ben Cook
Vinton Police Department

Mike Green
City of Salem Police Department

Terrell Holbrook
Roanoke County Police Chief

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
Police Chief
Roanoke City

Major David Rorer
City of Salem Sheriff's Department

Steve Short
Roanoke County Police Academy

## Administrative Management Technology/ Health Information Management

Dr. Kathryn H. Beard
Coordinator of Career & Technical Edu.
Roanoke County Schools

Robert "Bob" 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

Sherry F. Crickenberger
Architectural Designer
VWCC Adjunct Faculty

Byron Dickson
President
Dickson Architects & Associates

John Garland
Principal/President
Spectrum Design, P.C.

Donald Pritchard
Vice President
SFCS, Inc.

Troy J. Smith, President
Avis Construction Co., 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

Steven P. Hoback
VWCC Adjunct Instructor &
Automotive Instructor
Roanoke County Public Schools

Carlton Mabe, Trainer & Instructor I
Virginia Western Community College

Scott Shrewsbury, Service Manager
Mike Sisca, Shop Foreman
Magic City Ford

Wendell Timothy Wray, Master Technician
VWCC Adjunct Instructor &
Berglund Ford

## Business Management

Emily S. Brock
VWCC Adjunct Instructor

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
Hometown 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.

Susan Roberts Gordon
Graphics Manager
Magnets USA®

Chris McAdams
The Becher Agency

Tony Pearman
Access

## Culinary Arts

Beverly Allman
Secondary School Education, Consultant
Salem City Schools

Katie Camper Porter
Culinary Advisor

Bruce Coffey
Training and Development Manager
U. S. Foodservice-Roanoke Division

Phillip J. Davis
Assistant General Manager
The Hotel Roanoke & Conference Center

Fred Najjum
Owner
Roanoke Fruit & Produce Company

Billie Raper, CEC
Executive Chef
The Hotel Roanoke & Conference Center

## Dental Hygiene

Amanda Beheler, R.D.H.
Roanoke, VA

Charles E. Conklin, D.D.S.
Director of Dental Services
Carilion Clinic

Paula Derbyshire, R.D.H.
Virginia Western Community College

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 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

*Emily Maas
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

Amber Parker, 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)

Paul Fox, Ph.D.
Dean of Arts and Sciences
Danville Community College

Pat Gobble, R.D.H.
Danville, VA

F.T. Grogan, III, D.D.S.
Danville, VA

Greg D. Howard, D.D.S.
Danville, VA

Robin Jennings, R.D.H.
South Boston, VA

Margaret Le, D.D.S.
Danville, VA

Jim Muehleck, D.D.S.
Martinsville, 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

*Brandy Strawderman
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 Fairfax Community College

Lori L. Gochenour, D.D.S.
Hagerstown, MD

Jill B. Grassmick, R.D.H.
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# Index

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# Location Map

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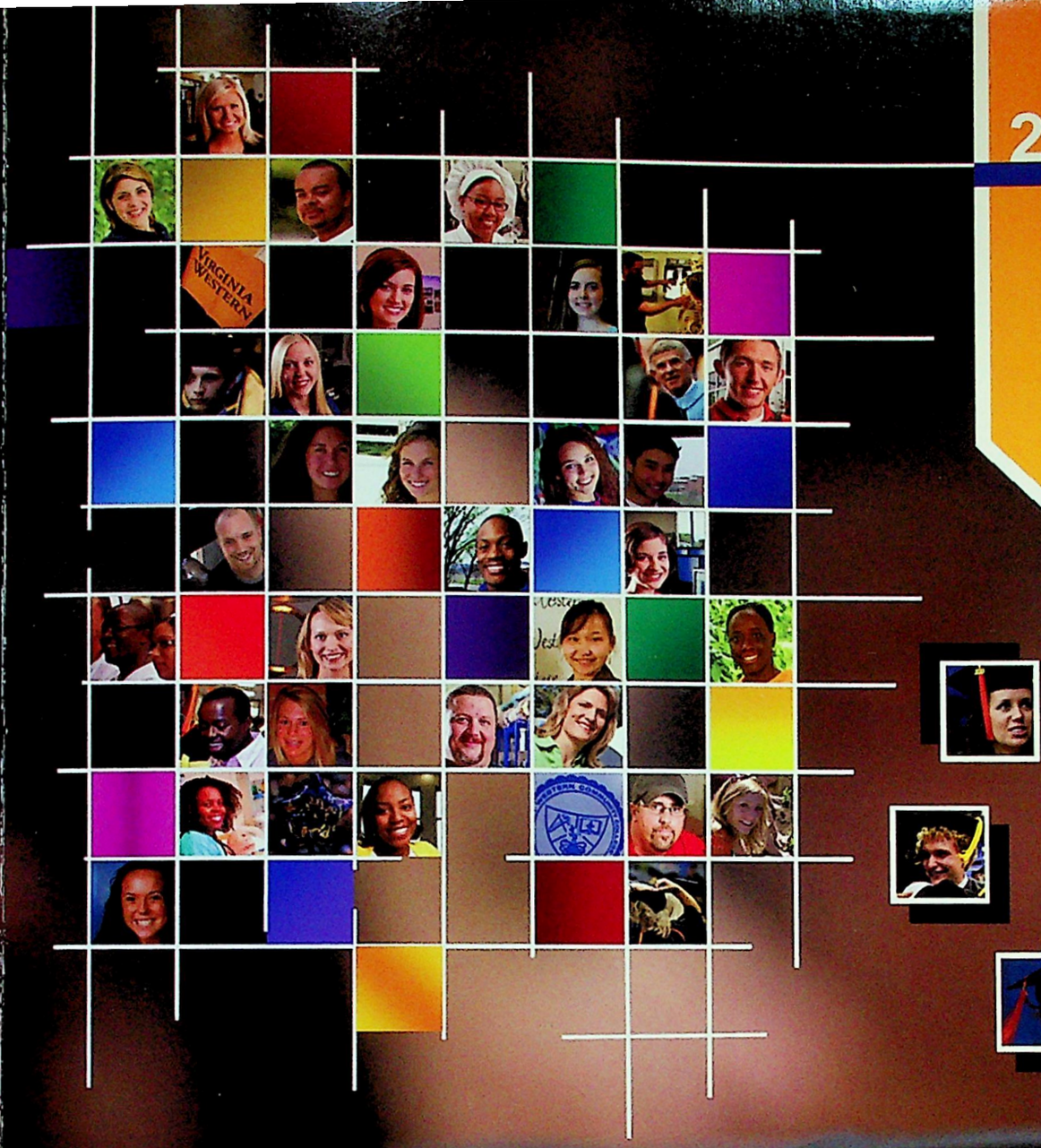


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