2007–2008
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
National Relay Service: 711

General information and registration system
(540) 857-8922

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

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

VIRGINIA COMMUNITY COLLEGE SYSTEM

President's Welcome

O BEHALF OF THE ENTIRE FACULTY AND STAFF,

I would like to welcome you to Virginia Western. We hope your decision to join the 9,000 students who take classes at our main campus in Roanoke, our off-campus sites in Franklin and raig counties, the Greenfield Center in Botetourt County, and the Roanoke Higher Education Center will provide you with opportunities for academic and personal growth. Whether you are here to earn an occupational/technical degree, plan to transfer to a four-year institution, want to improve your kills in your current occupation, make a career change, or just take classes for personal enrichment, Virginia Western is your educational partner.

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

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

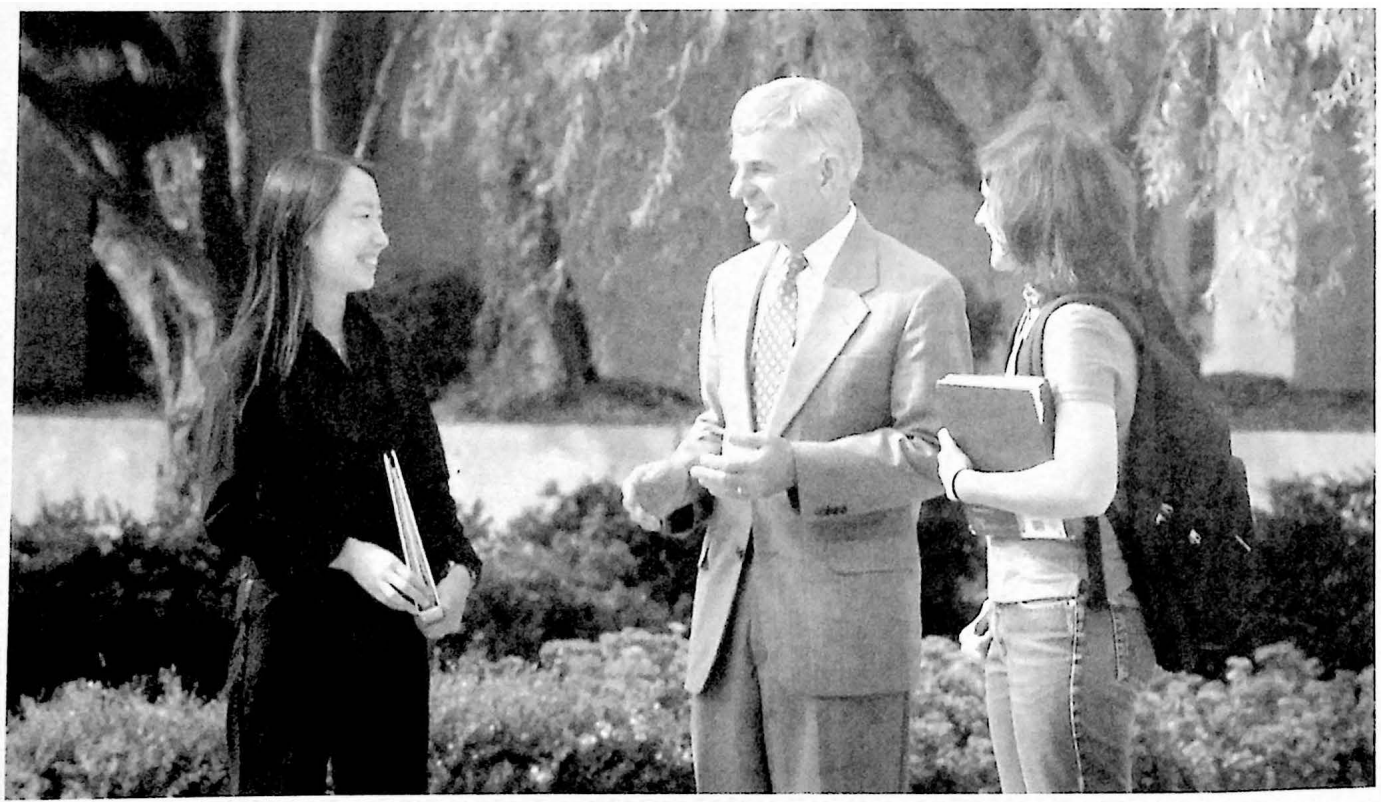
I encourage you to seek the guidance of our faculty and staff, to vi it our Web site atawww.virginiaweatern.edu, or to call our Information Center at (540) 857-VWCC. If you would like to schedule a tour of our campus, there areas udent ambassadors who are available to assist you.

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

Sincerely,

Robert H. Sandel

President



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Academic Calendar for 2007–2008

Summer Term 2007

Ten-Week Session

First Day to Enroll ..... April 16
First Day of Classes ..... May 16
Last Day to Register/Add a Class ..... May 22
Last Day to Drop and Receive a Refund ..... May 25
Memorial Day Holiday ..... May 28
Last Day to Apply for Graduation This Term ..... June 8
Break (no classes) ..... June 21–24
Last Day to Withdraw Without Grade Penalty ..... June 30
Independence Day Holiday ..... July 4
Last Day of Classes ..... July 30

First Five-Week Session

First Day of Classes ..... May 16
Last Day to Register/Add a Class ..... May 18
Last Day to Drop and Receive a Refund ..... May 20
Memorial Day Holiday ..... May 28
Last Day to Withdraw Without Grade Penalty ..... June 6
Last Day to Apply for Graduation ..... June 8
Last Day of Classes ..... June 20

Second Five-Week Session

First Day of Classes ..... June 25
Last Day to Register/Add a Class ..... June 27
Last Day to Drop and Receive a Refund ..... June 29
Independence Day Holiday ..... July 4
Last Day to Withdraw Without Grade Penalty ..... July 16
Last Day of Classes ..... July 30

Fall Semester 2007

Sixteen-Week Session

First Day to Enroll ..... July 16
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 4
Last Day to Apply for Fall Graduation ..... October 8
Last Day to Withdraw Without Grade Penalty ..... October 28
Faculty In-Service Day–No Day or Night Classes ..... November 20
Faculty Research Day–No Day or Night Classes ..... November 21
Thanksgiving Holidays ..... November 22–24
Last Day of Classes ..... December 11
Final Examinations ..... December 12–18

Spring Semester 2008

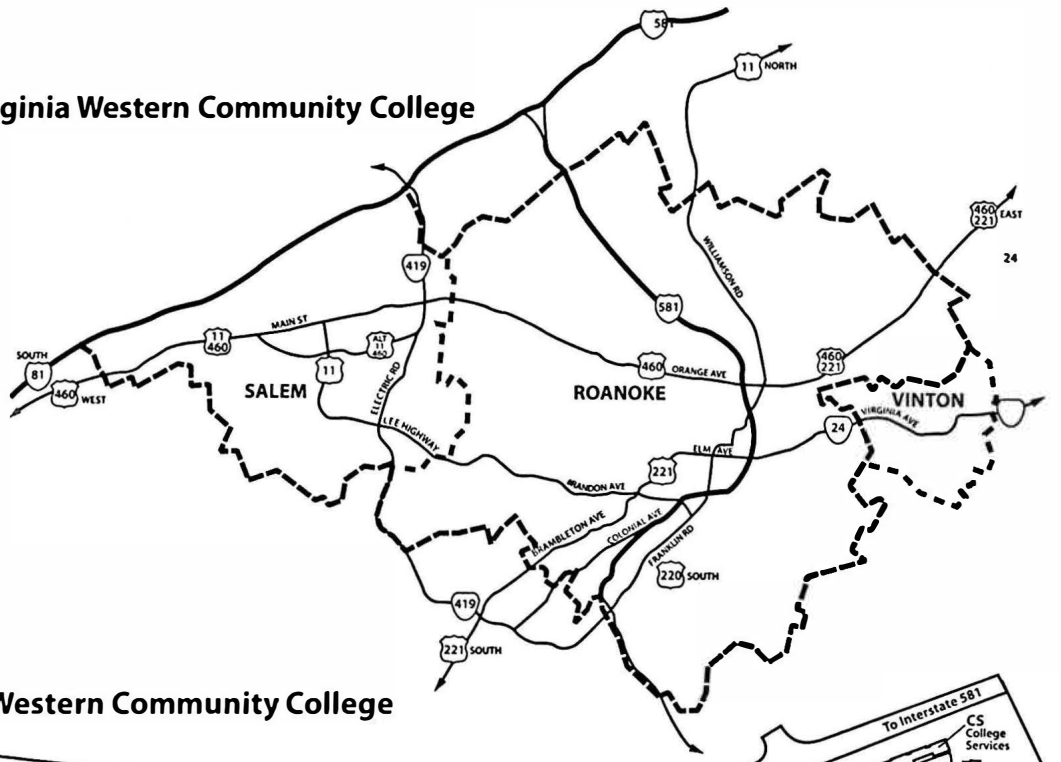
Sixteen-Week Session

First Day to Enroll ..... November 12
First Day of Classes ..... January 7
Last Day to Register/Add a Class ..... January 11
Last Day to Drop and Receive Refund ..... January 20
Last Day to Apply for Spring Graduation ..... February 4
Makeup/Spring Break* ..... March 3–8
Last Day to Withdraw Without Grade Penalty ..... March 20
Last Day of Classes ..... April 26
Final Examinations ..... April 28–May 3
Commencement Ceremony ..... May 9

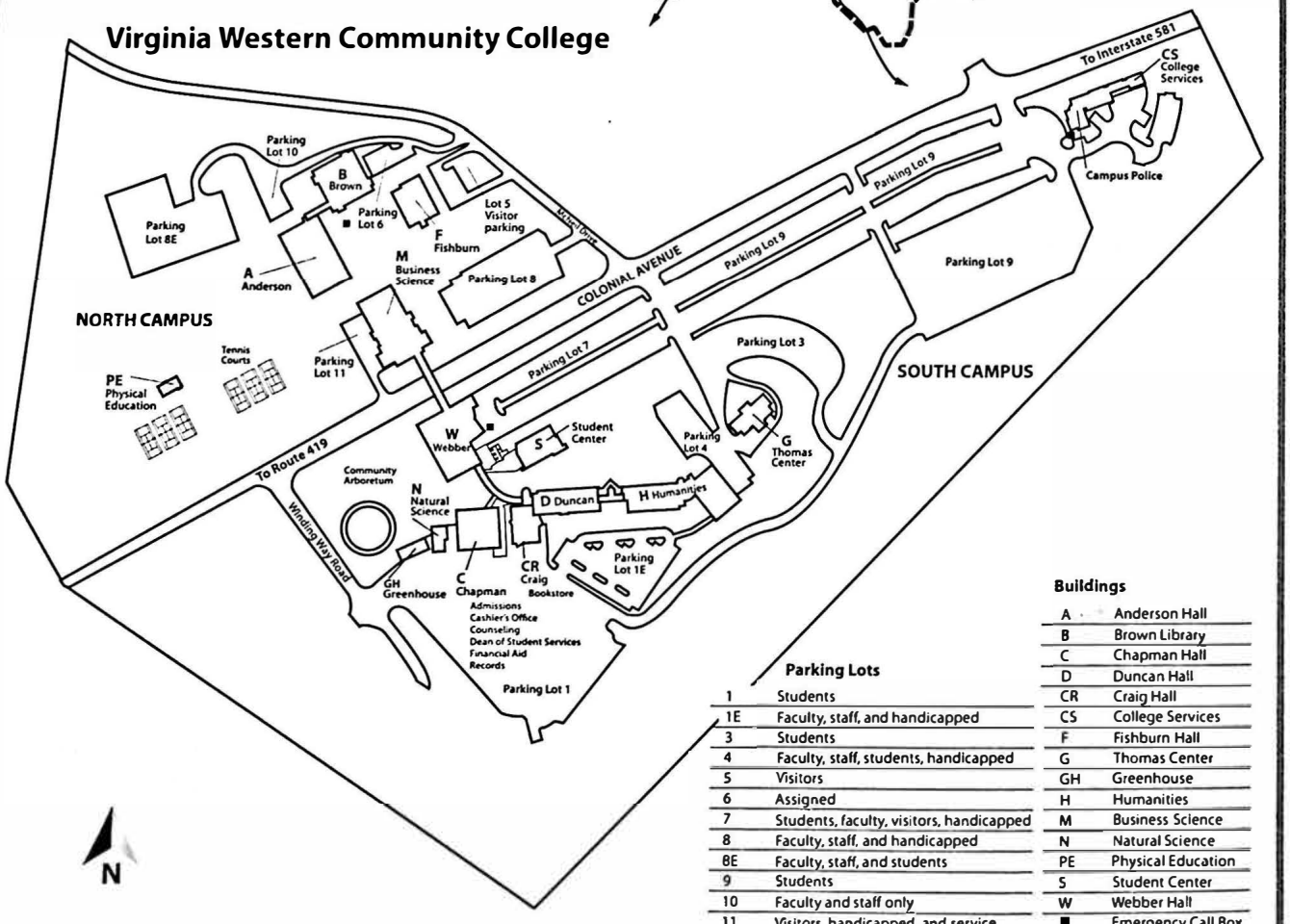
* Spring Break may be used for makeup days if too many instructional days are missed due to inclement weather.

Campus Maps

Location of Virginia Western Community College



Virginia Western Community College



Parking Lots

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

Buildings

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

Administrative Officers

President ..... Dr. Robert H. Sandel
Vice President of Financial and Administrative Services ..... Dwight E. Blalock
Vice President of Academic and Student Affairs ..... Dr. John S. Capps
Vice President of Institutional Advancement ..... Dr. Mark Q. Emick, Sr.
Vice President of Workforce Development and Lifelong Learning ..... Dr. Charles Terrell
Administrative Officer for Development ..... Kay Strickland
Administrative Officer for Workforce Development ..... Leah Coffman
Administrative Officer for Workforce Development ..... Mike Greer
Administrative Officer for Workforce Development ..... Dr. Ruth Z. Hendrick
Administrative Officer for Workforce Development ..... Dan Semones
Coordinator of Career Services ..... Gary Adkins
Coordinator of Counseling ..... Michael C. Henderson
Coordinator of Distance Learning and Instructional Technology ..... Ramona Coveny
Coordinator of Dual Enrollment ..... William A. Salyers, Jr.
Coordinator of Grants Development and Special Projects ..... Marilyn J. Herbert-Ashton
Coordinator of Library ..... David L. Hillman
Coordinator of Retention Services and Student Life ..... Dr. Gloria A. Lindsay
Coordinator of Student Support Services ..... Dr. Avis Quinn
Dean of Student Services ..... Lori C. Baker
Dean of Business, Engineering and Technology ..... James W. Poythress
Dean of Humanities ..... Elizabeth C. Wilmer
Dean of Science, Mathematics and Health Technology ..... Anne B. Kornegay
Dean of Social Sciences ..... Dr. James E. Sargent
Director of Facilities Planning and Development ..... Kevin G. Witter
Financial Aid and Veterans Affairs Officer ..... Carol Sliver

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 Division ..... (540) 857-7272
Business Office ..... (540) 857-7201
Campus Police ..... (540) 857-7979
Career and Placement Services ..... (540) 857-7298
Continuing Education Department ..... (540) 767-6123
Counseling ..... (540) 857-7237
Dental Clinic ..... (540) 857-7221
Distance Learning ..... (540) 857-6202
Engineering and Technology ..... (540) 857-7275
Facilities Management ..... (540) 857-7341
Financial Aid ..... (540) 857-7331
Greenfield Center ..... (540) 966-3984
Gymnasium Office ..... (540) 857-6068
Health Technology Division ..... (540) 857-7306
Honors Institute ..... (540) 857-6240
Human Resources ..... (540) 857-7282
Humanities Division ..... (540) 857-7271
International Education ..... (540) 857-6021
Learning Technology Center ..... (540) 857-7250
Library ..... (540) 857-7303
Math Center ..... (540) 857-7250
President's Office ..... (540) 857-7311
Records Office ..... (540) 857-7236
Retention Services ..... (540) 857-7583
Science and Mathematics Division ..... (540) 857-7273
Social Sciences Division ..... (540) 857-7276
Student Activities ..... (540) 857-6328
Student Services (Dean's Office) ..... (540) 857-6348
Student Support Services ..... (540) 857-7286
Veterans' Affairs ..... (540) 857-7395
Workforce Development (Higher Ed Center) ..... (540) 767-6120
Writing Center ..... (540) 857-7250

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

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 9,000.

Vision Statement

Virginia Western Community College will deliver comprehensive educational and workforce development programs that will meet citizens' needs, both private and corporate, to strengthen the local economy, and improve the quality of life in our community.

Mission Statement

The mission of Virginia Western Community College is to provide comprehensive higher education and workforce training programs and services of superior quality that are affordable and accessible and that meet individual, business, and community needs in the Roanoke Valley and surrounding areas.

Virginia Western endeavors to fulfill this mission by fostering the belief that all people should have an equal opportunity to develop their skills, knowledge, and values. The College promotes this concept by making quality higher education available through its open door admission policy, affordable tuition, financial assistance, and student support services.

Virginia Western provides an extensive schedule of course offerings and programs to serve the diverse needs of students, including:

- Associate degree programs to prepare individuals for transfer as upper-division students to baccalaureate degree programs in four-year colleges and universities, including partnerships with other two-year and four-year institutions of higher education and provide new or expanded educational opportunities for our students on the Virginia Western campus and throughout the Commonwealth;
- Associate degree programs to prepare individuals for careers as technical and paraprofessional workers;
- Certificate and Career Studies programs, which prepare individuals for careers as technicians, skilled, and semi-skilled workers;
- Workforce development courses designed to meet the training and retraining needs of the region's businesses, industries, and professions;
- Developmental courses for students who lack the academic background or prerequisite competencies necessary for success in curricula of study;
- Distance learning courses to accommodate students who cannot attend regular classes due to location or schedule conflicts;
- Dual Enrollment opportunities for qualified high school students who obtain college credit through arrangements between public schools and the College.

As part of its overall commitment to open access and excellence, the College provides a broad range of support services and instructional technology, including multimedia classrooms, a modern and extensive library, computer labs, and a learning center. Counselors and faculty advisors are available to assist students with establishing and attaining their educational and occupational goals. Special programs and services are provided for minority students, special-needs students, students with disabilities, senior citizens, and other nontraditional students. Co-curricular programs and cultural enrichment opportunities are offered to promote a sense of civic responsibility, global awareness, and personal enrichment.

Virginia Western acquires and maintains the buildings, grounds, and equipment necessary to provide an environment conducive to learning. Since the College is a resource to the community, its services, activities and facilities may be available to area citizens whenever feasible.

Approved by the Virginia Western Community College Local Board on February 6, 2002

Strategic Planning Goals

In striving to fulfill its mission in the most effective way possible, the College has established the following goals for the *2002–2004 and 2004–2006 biennia. Virginia Western Community College will...

- Partner with business, industry, and local governments to create more opportunities for workforce training to support economic development in the Roanoke Valley and surrounding areas;
- Continue to provide associate degrees, certificate programs, and courses for transfer, employment, and lifelong learning;
- Strengthen internal communications, teamwork, leadership and professional development to provide the highest level of customer service;
- Increase accessibility and convenience through expanding off-campus and distance learning offerings;
- Employ more full-time faculty and staff, where needed, who reflect the diversity of the area population, and increase professional development opportunities, in order to meet the evolving needs of the local and global community;
- Expand and update educational programs to address the career opportunities and technological changes in service sectors such as information technology, health care, and related fields;
- Expand efforts to provide adequate funding through grants, private fundraising, and public support;
- Improve student retention and achievement of educational goals through enhanced facilities, student services, co-curricular programs, and quality instruction;
- Promote productive and mutually beneficial relationships with local governments, local school divisions, and transfer institutions.

06/06

* The 2006–2008 strategic planning goals are in progress.

Accreditation

Virginia Western Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097, telephone number (404) 679-4501) to award associate degrees.

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 technology programs 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, Counseling, Cashier, Financial Aid and Veterans Affairs and the Student Services Division Office.
- **Craig Hall** contains the College Bookstore.
- **Duncan Hall** contains classrooms and faculty offices.
- **Webber Hall**, alongside Colonial Avenue, houses the laboratories for automated manufacturing, Cisco, construction engineering, drafting, electrical, electromechanical microcomputer systems, CAD, and engineering microcomputers; classrooms for accounting, management, paralegal studies, and the engineering and technology programs; faculty offices for accounting, management, and engineering and technology faculty; and the Business, Engineering and Technology Division 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 a studio, gallery, lecture, and computer graphics lab space for the Art Department, as well as a photography darkroom and laboratory space, a large multipurpose room, two general classrooms, and a gymnasium.
- The **Thomas Center for Advanced Studies** consolidates the four-year baccalaureate offerings on campus and houses the Radford University and Old Dominion University programs for upper-level studies.
- A 2,100 square foot greenhouse, along with a two-acre **Community Arboretum**, is also located on South Campus.
- The **Student Center** houses the Hall Associates Career and Employment Assistance Center, Student Support Services, Retention and Student Life, Student Activities, Student Government Association, and Alliance for Excellence.

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, the Business Office, 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 Technology programs: Nursing, Dental Hygiene, Radiography, plus Science and Mathematics. Anderson Hall also houses laboratories for the natural sciences, classrooms, faculty offices, and the Reading Center. The Dental Hygiene Clinic, which is open to the public and offers services at no charge, is also located in Anderson Hall.
- Located beside Fishburn Hall is **Brown Library**. The Library houses the Learning Technology Center (which has an open computer lab), Math Center, and the Child Care Media Center.
- The **Business Science Building**, alongside Colonial Avenue, contains Technical Support Services and Printing Services, plus classrooms, laboratories, and faculty offices for the Administrative Support Technology and Information Systems Technology programs. The open computer laboratory is located in room M302, and the hours of operation are Monday through Friday, 8:00 a.m. until 9:00 p.m. and Sundays from 10:00 a.m. until 6:00 p.m. A cafeteria, drama and speech classroom, theater workshop, and the Whitman Auditorium are also located in this building on the ground level.
- The campus also has a bridge spanning Colonial Avenue that connects Webber Hall and the Business Science Building. This connection makes it possible to access both North and South Campuses without physically crossing Colonial Avenue.
- A covered walkway connects Webber Hall to Chapman Hall, Craig Hall, and Duncan Hall. An enclosed walkway connects Duncan Hall to the Humanities Building. These walkways allow convenient access to the buildings on South Campus.
- The College's six lighted tennis courts are located on North Campus.

Workforce Development Services/Lifelong Learning

LearnConnect

It's your move.

The College's Workforce Development Services/Lifelong Learning Division is a community leader in providing up-to-date training, resources, skills information, and educational support services to the existing business community, as well as to new and/or expanding enterprises.

In order to meet the specific needs of our business community, we have offices strategically located throughout the institution's service area:

- Franklin County Workforce Development Consortium, Rocky Mount, Virginia
- Greenfield Education and Training Center, Daleville, Virginia
- Roanoke Higher Education Center, Workforce Development Division, Central Administrative Offices, Roanoke, Virginia
- Main campus – Colonial Avenue

Vision

Through consolidation of effort between the College's business and industry training arm and its Division of Continuing Education, the Workforce Development Services/Lifelong Learning program was established.

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

Mission

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

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

This can be accomplished through adherence to the following priorities:

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

For additional information, contact:

Workforce Development Services/Lifelong Learning
Virginia Western Community College
Roanoke Higher Education Center
108 N. Jefferson Street, Suite 201
Roanoke, VA 24016
Telephone: (540) 767-6120

Off-Campus Workforce Development Sites

Virginia Western, through its Workforce Development Services/ Lifelong Learning programs, operates three off-campus workforce development sites.

Greenfield Education and Training Center

The 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.

Roanoke Higher Education Center

Roanoke Higher Education Center is located in downtown Roanoke, Virginia. The space is dedicated to serving workforce development needs through its advanced computer labs.

Franklin County Workforce Development Consortium

Franklin County Workforce Development Consortium is located in Rocky Mount, Virginia. The Consortium provides concentrated, hands-on training programs geared to improving and upgrading the skills of the local workforce. Moreover, this facility serves as a one-stop center, coordinating worker development activities under the Workforce Investment Act.

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 will be admitted according to the provisions in the current Virginia Plan for Dual Enrollment.

Individuals age 15–17 who are not attending secondary school or a home school program may attend with the approval of the school superintendent of the city or county of their residence.

High school students and home school students should refer to the subsequent sections addressing these populations.

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

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.

Admission of High School Students

Virginia Western will consider the admission of students who are at least 15 years of age and enrolled in a public or private secondary educational program. Although the enrollment of high school students has the potential to enrich their academic program, it is not meant to substitute for the traditional high school experience.

Virginia Western has developed the following admission and registration procedures to assist high 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. 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.

The College has dual enrollment agreements with local school systems to offer college-level courses at the high school location. Enrollment in these courses is initiated through the students' high school and is approved by the College's Dual Enrollment Coordinator.

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 students who are at least 15 years of age, not enrolled in a public or private secondary educational program, and are currently home school students. Although the enrollment of home school students has the potential to enrich their home school program, it is not meant to substitute for their home school experience.

Virginia Western has developed the following admission and registration procedures 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. Parent must submit written authorization to enroll their child/applicant at the College;
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.

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 College 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 College's 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 Counseling offices. Generally, no credit will be given for courses with grades lower than a "C" when students transfer from other colleges. Transfer students may be advised to repeat courses if it is clearly to their advantage to do so in order to make satisfactory progress in their curriculum.

In determining transfer credit, course work applicable to the curriculum at Virginia Western will be accepted if the work completed at an institution is applicable to the student's program at the College, if the course/content/level of instruction is at least equal to the content/level at Virginia Western, and a comparable course is/has been taught within the Virginia Community College System. Courses so credited are not calculated into the student's Virginia Western GPA computation.

Admission of International Students

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

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

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

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

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

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

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

Admission of Students on Probation, Suspension, or Dismissal

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

Academic Probation

Applicants on academic probation may be admitted with academic restrictions.

Academic Suspension

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

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

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

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

1. Students wishing to enter a different curriculum and have at least a 2.0 on the courses applicable to the new curriculum;
2. Students who were suspended for low cumulative GPA and have an acceptable curricular GPA;
3. Noncurricular students wishing to take courses that are primarily job training in nature;
4. Students who feel they have mitigating circumstances should complete the Petition for Admission/Reinstatement and direct a letter to the Admissions Committee asking for acceptance. The letter must address the following:
   a. The course(s) desired;
   b. The goal or curriculum that will be pursued;

c. A statement explaining the academic difficulty that led to suspension;

d. An explanation of what has been done to enhance the student's chances for success.

Academic Dismissal

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

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

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

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

Classification of Students

All students are classified according to the following categories:

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

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

Full-time A student is considered full-time if carrying 12 or more course credits. **Note:** A student wishing to complete a degree on schedule should take 16–18 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, Commonwealth Nursing, 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 in order to receive 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

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 or 4 (depending on the course) 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.

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 Counseling Offices at Virginia Western.

Military Credit

A student's military training, courses, and occupational specialty can 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 credit for HLT. 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, email address, telephone number, date and place of birth, 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.

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.

Parents Rights Under FERPA

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

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

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

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

Frequently Asked Questions

What do I need to do to enroll for classes at Virginia Western?	New students should bring a completed application form to the Admissions Office located in Chapman Hall or apply online at www.virginiawestern.edu. Students who have not been enrolled for more than three years must reapply to the College. Most types of students can register themselves online or by telephone if they prefer. Instructions are printed in the Schedule of Classes.
When does registration begin...and end?	The registration period for regular session classes normally begins about four weeks before the start of each semester and continues throughout the first week of classes. Specific dates are published in the Schedule of Classes and can be obtained by calling Admissions at (540) 857-7231.
Can I register and pay my tuition without coming to campus?	Eligible students can register and pay tuition by telephone at (540) 857-7827 or online at https://vw.my.vccs.edu. Students may also mail a check to the College; checks must have the correct amount and should include the student's social security number. Cash should not be mailed.
How and when can I receive a tuition refund?	Students may drop a class by telephone at (540) 857-7827 or online at https://vw.my.vccs.edu. Students may also drop in person during the refund/drop period by submitting an add/drop form to the Admissions Office. The refund/drop deadline for regular session classes is published in the Schedule of Classes. The refund/drop deadline for all other session classes is available by calling (540) 857-7231. 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 $2.00.

Frequently Asked Questions (Continued)

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 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.
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.
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).

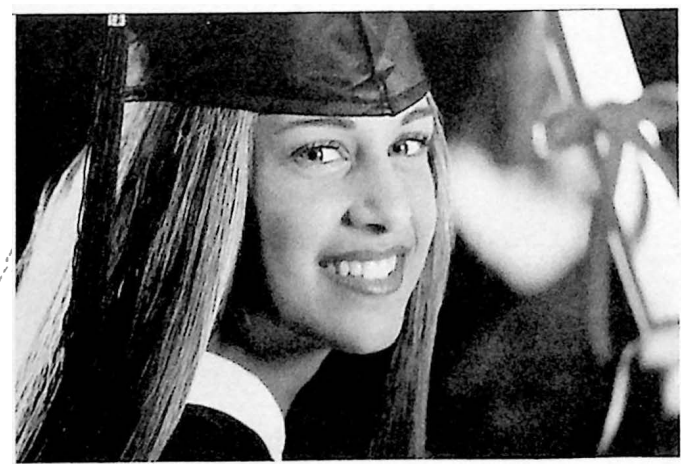
Education pays

Students who earn an Associate's Degree...

Earn an annual average of 22% more than those with a high school diploma

Enjoy lifetime earnings 25% higher than high school graduates

Source: The College Board, *Education Pays 2004*



Expenses

Tuition

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

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

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

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

Student Responsibility to Avoid Tuition Obligation Related to Dropped Course

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

Tuition Refunds

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

Students may drop a class by telephone at (540) 857-7827) or online at https://vw.my.vccs.edu. Students may also drop in person during the refund/drop period by submitting an add/drop form to the Admissions Office. The refund/drop deadline for regular session classes is published in the Schedule of Classes. The refund/drop deadline for all other session classes is available by calling (540) 857-8922. If the refund/drop deadline for a class falls on a nonbusiness 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 term 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.

If a student is classified initially as out-of-state, it is the responsibility of the student thereafter to petition the responsible official for reclassification to in-state status if the student believes that subsequent changes in facts justify such a reclassification. The institution will not assume responsibility for initiating such an inquiry independently. A change in classification, if deemed to be warranted, shall be effective for the next academic semester or term following the date of the application for reclassification. No change to in-state status may be obtained by a student for an academic term that has begun before the date of the application for reclassification.

Additional information is available from the Admissions Office.

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 Refund

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.

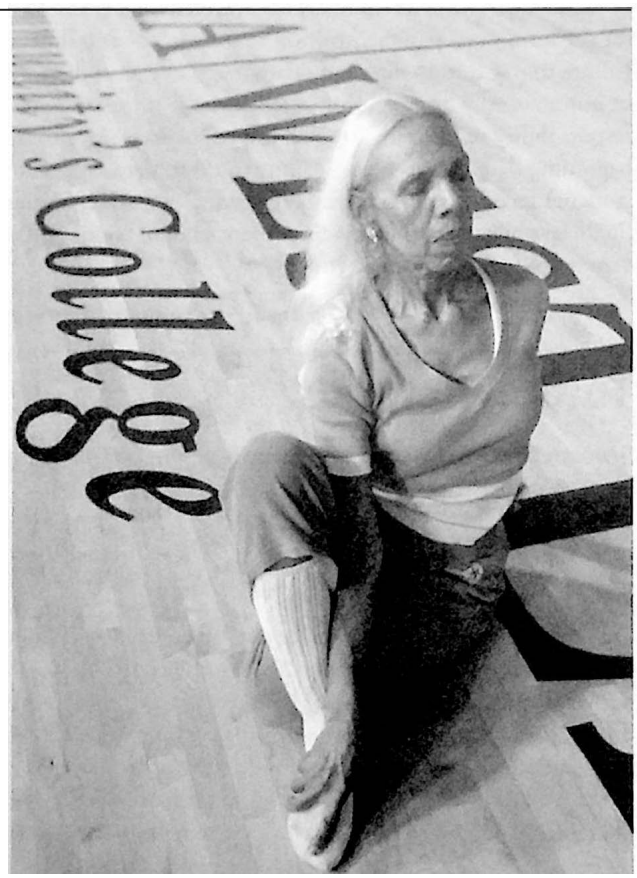
Education pays

In personal fitness...

Within every age group, the percentage of individuals perceiving themselves as very healthy increases with higher levels of educational attainment.[1]

As the level of educational attainment increases, smoking rates decrease.[1]

[1] Source: The College Board, *Education Pays 2004*



Financial Aid

How and When to Apply

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

Since most financial aid programs and grants have limited funding, except the Pell Grant, the date of application is a critical factor. An application may be submitted as early as January 1 (e.g., January 1, 2008, for the 2008–2009 academic year). Primary consideration is given to students whose applications are received and processed by May 31. *Please submit your financial aid application materials as early as possible!*

Pell Grant support can be provided to eligible students throughout the academic year. However, tuition/book coverage at the beginning of a semester requires submission of a valid Student Aid Report, with supporting documentation, at least seven days prior to the first day of classes. To allow for processing time, a student should complete and submit the FAFSA itself at least five weeks in advance. A student who qualifies for Pell Grant support, but does not meet the above timetable for tuition/book coverage, receives the support as reimbursement.

The FAFSA can be submitted directly over the Internet (www.fafsa.ed.gov). Most students currently utilize this option. Otherwise, a paper application can be obtained at the Office of Financial Aid or from a high school counselor.

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

Eligibility for Financial Aid

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

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

Students must continue to satisfy the above criteria and maintain satisfactory academic progress to retain financial aid eligibility. A copy of the satisfactory academic progress standards can be received from the Financial Aid Office.

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

Types of Financial Aid

There are three basic types of financial aid: grants/scholarships, work-study, and loans. A grant/scholarship consists of financial support for which neither work nor repayment is required. Work-study involves actual employment, either on-campus or at an off-campus public or private nonprofit agency. Loans must be repaid, normally commencing six months after graduation. For some loans, interest begins to accumulate at the start of the repayment period. For others, interest begins to accumulate upon actual receipt of funds.

Financial Aid Programs

Federal Pell Grant

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

Who qualifies for a Pell Grant? Since numerous variables (income, household size, household members in college, type of tax form filed, assets, etc.) are taken into consideration, it is difficult to provide a brief answer to this question. However, to give some guidance, the following are examples of students who, during the 2006–2007 academic year, received at least small Pell Grant awards (approximately $200–$250 per semester as full-time students):

1. A single independent student with no dependents of her own, filer of a Form 1040A, prior-year taxable income of $15,204, no prior-year untaxed income.
2. A married independent student with no children, filer of a Form 1040A, prior-year taxable income of $19,863 (student) and $6,307 (wife), no prior-year untaxed income, reportable student assets of $23,206.
3. A dependent student from a household containing two parents and one other child, prior-year parental income of $42,206 (all taxable), reportable parental assets of $24,508, prior-year student income of $4,075.
4. A married independent student with three children, filer of a Form 1040, prior-year taxable income of $47,498 (husband) and $5,389 (student); reportable student assets of $4,884.
5. A dependent student from a household containing just student and father, prior-year taxable incomes of $22,120 (father) and $8,129 (student), no prior-year untaxed income

Who qualifies for a maximum Pell Grant? Again, it is difficult to provide a brief answer. However, to give some guidance, the following are examples of students who, during the 2006–2007 academic year received maximum Pell Grant awards of $2,025 per semester as full-time students:

1. A dependent student from a household containing two parents and three other children, prior-year parental income of $30,691 (all taxable), reportable parental assets of $11,305, prior-year student income of $3,831, no reportable student assets.
2. A married independent student with two children, filer of a Form 1040, prior-year taxable income of $7,402 (student) and $26,808 (husband), reportable student assets of $4,397.
3. A dependent student whose parents filed a Form 1040A and had an adjusted gross income of less than or equal to $20,000. In this case, the student's income was inconsequential.
4. A single independent student with no dependents of her own, filer of a Form 1040A, prior-year taxable income of $6,218, no prior-year untaxed income.
5. A single independent student with no children, prior-year Social Security benefits of $5,906, no other prior-year income.

Federal Supplemental Educational Opportunity Grant (FSEOG)

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

Academic Competitiveness Grant (ACG)

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

College Scholarship Assistance Program Grant (CSAP)

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

Commonwealth Award Program

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

Part-Time Tuition Assistance Program (PTAP)

A state aid program similar to the Commonwealth Award Program, but directed to students enrolled for 1–6 credits per semester.

Virginia Guaranteed Assistance Program (VGAP)

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

Virginia War Orphans Education Program

Provides educational assistance for children of certain veterans and service personnel. Applicants must be at least 16 years of age and no older than 25 years of age, and must have a parent who died or became permanently and totally disabled due to a war-related injury or who is listed as a prisoner of war or missing in action. Further information and application forms are available from the Director, Division of War Veterans' Claims, Commonwealth of Virginia, 210 Franklin Road, SW, Roanoke, VA 24011. Applications should be submitted at least four months before the expected date of enrollment.

Virginia Public Service Orphans Education Program

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

Virginia National Guard Tuition Assistance Program

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

Foster Care Tuition Grant Program

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

Virginia Western Community College Academic Scholarship Program

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

Virginia Western Educational Foundation, Inc.

Community citizens, companies, and organizations generously provide the money to fund these scholarships. Annual awards are disbursed from over 40 separate scholarship programs. A complete listing of the scholarships, with their criteria, is available on line at www.virginiawestern.edu/foundation/scholarship, or in the Foundation Office located in Fishburn Hall. The applicant's academic major and past academic performance is strongly considered, with financial need sometimes also being an essential criterion.

Visit www.virginiawestern.edu/foundation/scholarship for instructions on completing an application on line or via paper. The following were the 2006–2007 scholarships:

Access, Inc., Scholarship
Alice Becker Hinchcliffe Williams Scholarship
Alumni Association Annual Book Scholarship
American Sign Language Scholarship in memory of Laura Knight Schowe
Bank of Botetourt Art by the James Series Scholarship
Barry L. Pendrey Memorial Scholarship
Belmont Presbyterian Church Scholarship
Bob Pittman Scholarship
Bridging the Gap Scholarship
Brown & Sons Farm Scholarship
James W. Thweatt, Jr. Commonwealth Legacy Scholarship
Continental Societies Scholarship
David L. Nickerson Honorary Scholarship
Down Syndrome Association of Roanoke Scholarship
Dr. and Mrs. Abe Jacobson Scholarship
Edward G. Magruder Honorary Scholarship
Ellie Knisely Teacher Education Scholarship
Employee Annual Giving Scholarship
Fred Whitaker Company Scholarship
Friendship Scholarship
Gerry Montgomery Meador Scholarship
Hall Associates Scholarship
Hugh E. Davis Nursing Scholarship
James Mark Mitchell Memorial Art Scholarship
Katherine Futrell Honorary Scholarship
Lakeland Masonic Lodge Scholarship in memory of David Keith Mays
Lewis-Gale Medical Center Scholarship
Lucian Y. and June B. Grove Honorary Scholarship
Maurice Strausbaugh Memorial Scholarship
McFarland Scholarship
Medical Facilities of America, Inc. Scholarship
Mike Bassett Memorial Scholarship
Mr. & Mrs. Emanuel Payne Scholarship
New City Media Scholarship for Information Systems Technology
New City Media Scholarship for Communication Design
Odasz Scholarship
Parts Depot Scholarship
Rita Halsey David Radiography Scholarship
Roanoke Electric Steel Corporation Scholarship
Roanoke Tribune Scholarship
Sister Eveline Murray Scholarship
VWCC Nursing Scholarship
Walter Darnall Vinyard Scholarship
William Frank Burton, Jr. Scholarship
William Milton Meador Scholarship

External Scholarship Programs

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

American Association of University Women
American Business Women's Association
Coca-Cola Scholarship
Dorothy J. Hall Scholarship (Virginia Credit Union)
Foundation of the National Student Nurses' Association, Inc.
Frank E. Page Scholarship
Health Focus of Southwest Virginia
Mary Marshall Nursing Scholarship Program
Mildred A. Mason Memorial Scholarship Foundation
National Association of Women in Construction
P.E.O., Chapter AI

Roanoke Academy of Medicine Auxiliary
Talbots Women's Scholarship Fund
Tylenol Scholarship
Virginia Business and Professional Women's Foundation
Virginia Child Care Provider Scholarship
Virginia League for Nursing, Inc.

Federal Stafford Loan Program

Permits eligible students to receive long-term, low-interest educational loans with no repayment or interest obligations while they are enrolled in college. Banks, savings and loan associations, and credit unions provide loans. Borrowers must be enrolled at least half time and demonstrate financial need.

Unsubsidized Stafford Loan Program

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

Federal Plus Loans

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

Federal Work-Study Program

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

Veterans Affairs

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

Financial Aid Frequently Asked Questions

How can I obtain financial aid?	An application may be obtained from the Financial Aid Office located in Chapman Hall. Students can obtain assistance in completing the form. The form must be submitted to the processing center for approval. Additional documentation, such as tax forms, may be required to complete the application process. It is advisable to apply as early as possible. (Students who apply late for financial aid may have to pay their own expenses and, if approved, obtain reimbursement.) An application also can be obtained directly on the Internet (www.fafsa.ed.gov).
What types of financial aid are available?	There are three kinds of financial aid at Virginia Western: grants/scholarships, loan, and work-study. Our largest program is Pell (1,892 students received over $3.2 million in Pell Grant funds last year). The average cost of tuition and books for a full-time student at Virginia Western is around $1,600 per semester, and the maximum Pell award is $2,025 per semester. Other types of aid often supplement Pell Grants.
When are Pell checks ready?	First, federal funds must be ordered once Student Aid Reports have been processed and the U.S. Department of Education provides authorization. Usually the initial disbursement is 6–8 weeks after the drop/add period. Subsequent disbursements are made periodically throughout the term.
When can students obtain books?	Textbooks and supplies can be charged to the student's financial aid award beginning on the second day of classes and continuing through the drop/add period.
Must I repay my financial aid if I withdraw from school during the semester?	A student who withdraws from all classes during the first 60% of the semester very frequently has to repay a portion of the financial aid that he or she has received. The amount of repayment is influenced by the date on which the last course withdrawal took place. A similar calculation is performed in those cases where the student ceases attendance in all courses, whether or not he or she has actually submitted a formal notice of withdrawal.
What is the application deadline for financial aid?	Students should apply as early as possible to allow sufficient time for processing, generally 4–5 weeks. Additional time may be required if corrections and/or verification are necessary. Applications that have been processed by May 31 receive priority for state grants; these funds are limited). For some types of aid, such as Pell grants and Stafford loans, students can apply anytime during the year. However, they should be prepared to pay for tuition and books, and receive reimbursement, if their application cannot be processed within seven days prior to the start of classes.
What financial aid is available for part-time students?	With the exception of some scholarships, which are restricted to full-time students, students enrolled for at least six credits may qualify for most types of financial aid provided at Virginia Western. PTAP, a state grant program, is available for students taking less than six credits.
What is a Hope Scholarship?	This is a tax credit, up to a maximum of $1,500, which can be taken by eligible students for tuition paid during the freshman and sophomore years.

Student Services

Career Services

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

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

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

Counseling Services

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

The Counseling 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 Counseling 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 counseling 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 has launched a campus-wide retention initiative focused on retaining students and increasing student satisfaction and success. Retention activities are coordinated through the Alliance for Excellence Office and include the following components:

1. A referral system where faculty identify and use resources to assist students in accomplishing their educational goals;
2. A series of special topic workshops; and
3. A program of intrusive advising for developmental and academic probation students to help them achieve success.

The one-on-one tutorials started under this program are now coordinated through the Learning Technology Center. For more information, contact Dr. Gloria Lindsay in the Alliance for Excellence Office at (540) 857-7583.

Services for Persons with Disabilities

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

Student Activities Program

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

Student Government Association (SGA)

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

Campus Clubs and Organizations

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

1. Procedures for forming an organization may be obtained from the Student Activities Office. Rules for the governance of all student clubs and organizations may also be obtained from the Student Activities Office.
2. A group shall become a recognized organization when approved by the Student Activities Coordinator and the Dean of Student Services.

Student Publications

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

Off-Campus Housing

The Student Activities Office, working with a number of local realtors, provides a listing of available housing, roommates, and other pertinent information within the community. The office is located in room 204 in the Student Center. Call (540) 857-6326.

Student Health Services

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

Identification Cards

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

ID cards are issued each semester and are valid for one academic year. Students who register and pay for three or more credits are eligible to receive a Virginia Western Student ID card. Other staff and faculty members are eligible upon proof of status with the college. The first card is issued free of charge to all students, staff, and faculty. ID cards identify the individual by name and bear a photo and a semester validation sticker, in the case of students and part-time employees. Each semester, students and part-time employees must visit the ID Card Office to receive a current semester validation sticker. The sticker is placed on the current ID card and verifies current enrollment or employment. Without this sticker, the card is invalid. There is a replacement fee for any lost or stolen cards and a replacement fee for any lost stickers. The detailed ID card policy can be obtained from the Student Activities Office, room 204 of the Student Center.

Library

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

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

The Library's computers offer a rich array of online databases that provide fundamental research support in broad-based academic disciplines. Many of these databases include the full-

text of newspaper and journal articles. One of these databases, Britannica Online, is the full text of this major encyclopedia. In addition, all of the library's computers have been set up to allow general Internet searching.

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

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

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

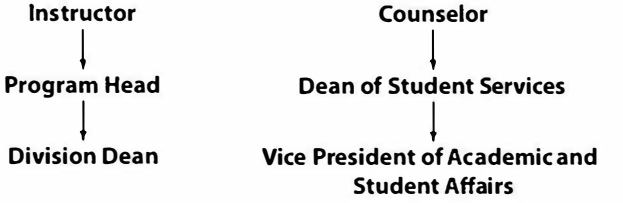
Learning Technology Center

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

Channels of Communication for Academic Complaints, Suggestions, Appeals, and Grievances

A grievance is a formal written allegation by a student charging unlawful or unfair treatment according to the application of laws, rules, policies, procedures, or regulations under which the College operates.

Each student has the right to express an opinion, make suggestions, submit grievances, and appeal administrative decisions. Channels of communication are always open to students with personal problems and to those who wish to suggest improvements. While students may elect to resolve a noninstructional conflict by contacting the Office of Counseling Services, instructional concerns should be addressed through appropriate academic channels. To facilitate the communication process, one of the following administrative channels should be followed:



In the event that the grievance cannot be resolved satisfactorily following either of the above channels, the Student Disciplinary Committee will be convened by the Dean of Student Services. A complete statement of student rights, responsibilities, and conduct is included in the Student Handbook. The Student Handbook is available in the Counseling Office, Student Activities Office, and the Web.

Policies and Procedures Relating to Sexual Misconduct

Sexual misconduct is a violation of the values and behavioral expectations of the College and is not be 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 Counseling Office and the Office of Student Activities. In addition, various seminars, speakers, and other events are periodically sponsored by the College to promote awareness of substance abuse. Credit courses that develop students' understanding of this issue are offered through the Divisions of Social Science, Health Technology, and Continuing Education.

Enforcement

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

Referral for Counseling

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

Weapons Policy

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

Parking on Campus

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

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

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

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

Children on Campus

The College 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 (defined as persons under age 13) 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, offices, and classrooms or grounds.
- 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, will notify the Roanoke Youth Bureau.

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.

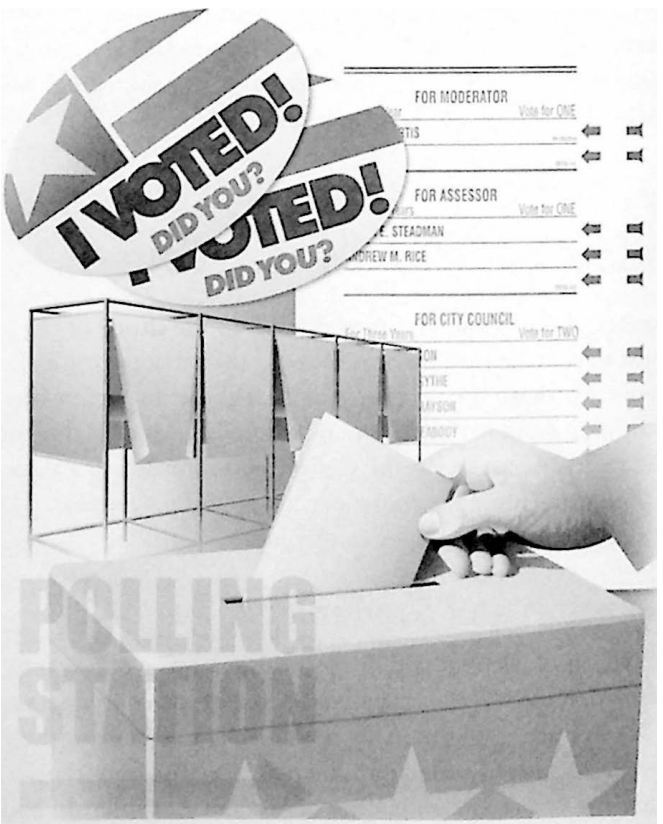
If you have a disability and need assistance completing the form, please go to the REACH/Student Support Services Office in the Student Center and they will gladly assist you.

Education pays

In civic involvement...

On average, 65% of those with an Associate's Degree vote, versus 51% of high school graduates.

Source: The College Board, *Education Pays 2004*



Computer Guidelines: Virginia Community College System

InformationTechnology 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.

Information Technology Acceptable Use Standard

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

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

Definition

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

Standard

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

1. You must use only those computer resources that you have the authority to use. You must not provide false or misleading information to gain access to computing resources. The VCCS may regard these actions as criminal acts and may treat them accordingly. You must not use the VCCS IT resources to gain unauthorized access to computing resources of other institutions, organizations or individuals.
2. You must not authorize anyone to use your computer accounts for any reason. You are responsible for all use of your accounts. You must take all reasonable precautions, including password maintenance and file protection measures, to prevent use of your account by unauthorized persons. You must not, for example, share your password with anyone.
3. You must use your computer resources only for authorized purposes. Students or staff, for example, may not use their accounts for private consulting or to support a personal business venture. You must not use your computer resources for unlawful purposes, such as the installation of fraudulently or illegally obtained software. Use of external networks connected to the VCCS facility must comply with the policies of acceptable use promulgated by the organizations responsible for those networks.

4. Other than material known to be in the public domain, you must not access, alter, copy, move or remove information, proprietary software or other files (including programs, members or subroutine libraries, data and electronic mail) without prior authorization. The college or data trustee, security officer, appropriate college official or other responsible party may grant authorization to use electronically stored materials in accordance with policies, copyright laws and procedures. You must not copy, distribute, or disclose third party proprietary software without prior authorization from the licenser. You must not install proprietary software on systems not properly licensed for its use.
5. You must not use any computing facility irresponsibly or needlessly affect the work of others. This includes transmitting or making accessible offensive, annoying or harassing material. This includes intentionally, recklessly, or negligently damaging systems, intentionally damaging or violating the privacy of information not belonging to you. This includes the intentional misuse of resources or allowing misuse of resources by others. This includes loading software or data from untrustworthy sources, such as freeware, onto official systems without prior approval.
6. You should report any violation of these regulations by another individual and any information relating to a flaw or bypass of computing facility security to the Information Security Office or the Internal Audit department.
7. You must not use the Commonwealth's Internet access or electronic communication systems for personal use. It is strictly prohibited if it:
   a. interferes with the user's productivity or work performance, or with any other employee's productivity or work performance;
   b. adversely affects the efficient operation of the computer system;
   c. results in any personal gain or profit to the user;
   d. violates any provision of this policy, any supplemental policy adopted by the agency supplying the Internet or electronic communication systems, or any other policy, regulation, law or guideline as set forth by local, state or federal law. (See Code of Virginia §2.1-804-805; §2.2-2827 as of October 1, 2001.)

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

Enforcement Procedure

1. Faculty, staff, students and patrons at the college or System Office should immediately report violations of information security policies to the local Chief Information Officer (CIO) at (540) 857-6126.
2. If the accused is an employee, the CIO will collect the facts of the case and identify the offender. If, in the opinion of the CIO, the alleged violation is of a serious nature, the CIO will notify the offender's supervisor. The supervisor, in conjunction with the College or System Human Resources Office and the CIO, will determine the appropriate disciplinary action. Disciplinary actions may include but are not limited to:
   a. Temporary restriction of the violator's computing resource access for a fixed period of time, generally not more than six months.
   b. Restitution for damages, materials consumed, machine time, etc. on an actual cost basis. Such restitution may include the costs associated with determining the case facts.
3. In the event that a student is the offender, the accuser should notify the Vice President of Instruction. The VP, in cooperation with the CIO, will determine the appropriate disciplinary actions that may include but are not limited to:
   a. Temporary restriction of the violator's computing resource access for a fixed period of time, generally, not more than six months.
   b. Restitution for damages, materials consumed, machine time, etc. on an actual cost basis. Such restitution may include the cost associated with determining the case facts.
   c. Disciplinary action for student offenders shall be in accordance with the college student standards of conduct.
4. The College President will report any violations of state and federal law to the appropriate authorities.
5. All formal disciplinary actions taken under the policy are grievable and the accused may pursue findings through the appropriate grievance procedure.

Academic Regulations

Credits and Academic Load

The normal academic course load for students taking courses in the fall and spring semester is 15–17 credits. The minimum full-time load for the fall and spring semester is 12 credit hours and the normal 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 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 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 post-secondary courses in English and math at another college or university may be exempt from placement testing.

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

Prerequisites

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

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

Incomplete: No credit. Used for verifiable and unavoidable circumstances at the discretion of the instructor. Since the "incomplete" extends enrollment in the course, requirements and deadlines for satisfactory completion must be established through student/faculty consultation. A course for which the grade of "I" has been assigned should be completed as soon as possible, and in the majority of cases, must be completed by the end of classes of the next semester (excluding summer), or the "I" grade will be changed to an "F." In exceptional cases, extensions of time needed to complete work for incomplete grades may be granted beyond the subsequent semester, with written approval of the Division Dean. A "W" grade may be awarded for the "I" grade only under extreme, mitigating circumstances and must be approved and documented by the Division Dean and the Registrar. A copy of this documentation must be placed in the student's academic file.

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

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

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

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

W Withdrawal: No credit. A grade of "W" is awarded to students who withdraw or are withdrawn from a course after the drop period but prior to the completion of 60 percent of the session. (Withdrawal deadlines are published in the General Catalog and each term in the Schedule of Classes.) Students who cease attendance prior to the withdrawal deadline for a class will be reported to the Admissions Office and withdrawn from the class. Students who are dropped or withdrawn by the instructor for non-attendance/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 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: No credit. With the exception of a senior citizen audit, permission to audit a course will be allowed only under mitigating circumstances. To audit a course, the student must obtain permission from the appropriate Division Dean. Audited courses carry no credit and do not count as part of the student's course load. Students wishing to change status in a course from credit to audit must do so after the last day to drop and receive a refund for the session and before the withdrawal date.

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. For a contested grade, the student must follow the timeline and steps outlined in the "Final Grade Appeal Procedure" in the College's Student Handbook.

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 Division 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 Division Dean. The Division Dean will attempt to mediate the grade dispute with the faculty member and will notify the student of the decision. If the Division Dean denies the student's grade change request, the student may then contact the Registrar for a third appeal. 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 Division 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 nondevelopmental 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 Division 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 Division Dean and Dean of Student Services or the Admissions and Records Coordinator/ Registrar. Quarter credit courses are exempt from the repeat course policy.

Students should consult with a counselor or faculty advisor before repeating a course for credit. All grades earned for all courses taken one or more times are indicated on the student's permanent record card, but only the last grade earned is used in calculating the student's cumulative grade point average and for satisfying curricular requirements. This policy applies only to courses taken since summer 1994, and also to courses taken since the conversion to the semester system (summer 1988) and repeated since fall 1996. For further information regarding this policy change and how it may affect students, contact the Records Office.

Student Responsibility to Avoid Tuition Obligation Related to Dropping a Course

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

Grade Forgiveness — Academic Renewal Policy

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

Attendance

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

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

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

No-Show Policy

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

Withdrawal Policy

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

Final Examinations

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

Grade Reports

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

Academic Honors

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

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

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

Honor Society

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

Academic Standing

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

Academic Warning

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

Academic Probation

Students who fail to maintain a cumulative grade point average of 1.5 will be on academic probation until such time as their cumulative average is 1.5 or better. The statement "Academic Probation" will be placed on their permanent records. Generally,

a student on probation is ineligible for appointive or elective office in student organizations unless the Dean of Student Services grants special permission. Students usually will be required to carry fewer credits than normal the following semester. Students on academic probation are required to consult with their probation counselors. Students shall be placed on probation only after they have attempted 12 semester credit hours.

Academic Suspension

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

Academic Dismissal

Students who do not maintain at least a 2.0 grade point average for the semester of reinstatement to the College when on academic suspension will be academically dismissed. Students who have been placed on academic suspension and achieve a 2.0 grade point average for the semester of their reinstatement must maintain at least a 1.5 grade point average in each subsequent semester of attendance. Students remain on probation/subject to dismissal until their cumulative grade point average is raised to a minimum of 1.5. Failure to attain a cumulative 1.5 grade point average in each subsequent semester until the cumulative GPA reaches 1.5 will result in academic dismissal. Academic dismissal normally is permanent unless, with good cause, students reapply and are accepted under special consideration for readmission by the Admissions Committee of the College. Students who have been dismissed may appeal to the Admissions Committee for readmission if they feel mitigating circumstances warrant consideration. A Petition for Admission/Reinstatement and a formal written appeal should be directed to the Admissions Committee. The Petition for Admission/Reinstatement and written appeal must be submitted two weeks prior to the begin date of the desired term of reentry. The statement "Academic Dismissal" will be placed on the student's permanent record.

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

Suspension for Lack of Progress

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

Academic Advising

A counselor ordinarily does initial freshman advising; however, each student in a curriculum of study is assigned to a faculty advisor consistent with the student's program of study. The faculty advisor will assist the student in selecting proper courses, interpreting curriculum requirements, and assessing academic progress. Advising days are scheduled during early registration periods or other announced times; however, students are encouraged to confer with their advisors on a regular basis during office hours. Students may locate the name of their faculty advisor at MyVWCC on the Virginia Western Web site (www.virginiawestern.edu).

COMPASS Testing Guidelines

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

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., nonenrolled 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.

Why community college students should complete their associate degree before transferring

Graduation...

Increases the probability of acceptance by a four-year college or university.

Many senior institutions give transfer admissions priority to students who have completed an AA or AS degree. Some institutions even guarantee admission to transfer graduates.

Reduces the possibility of having to take additional general education courses at the senior institution.

State senior institutions grant transfer graduates upper division (junior) class standing and accept the general education courses completed in the associate degree as a package, equivalent to the lower-division general education requirements at the senior institution. Students who transfer without graduating cannot be assured that they have satisfied all of the general education requirements of the senior institution.

Can improve the likelihood of success.

Assessment data provided by four-year institutions consistently show that most graduates have better success rates than non-graduates.

Increases opportunities for scholarships.

Graduation is an eligibility requirement for many scholarships.

Provides significant tuition savings.

The cost of tuition for a full-time student at Virginia Western is about $2,000. Tuition at a public four-year college in Virginia costs (on average) $5,000 per year. Tuition at private colleges is substantially higher.

Transfer Information

Transfer Degree Programs

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

Occupational/Technical Degree Programs

Although the Associate of Applied Science (AAS) occupational technical degree programs are designed for students who want to enter directly into the job market, some of these programs can also be used to prepare a student for transfer to a four-year college or university. Radford University, for example, offers Virginia Western students who have completed relevant AAS degree programs, bachelor degree programs in social work, nursing, accounting, organizational business management, 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, human services, and nursing.

Transfer Courses

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

Transfer Module

Most students will find it in their best interest to graduate from Virginia Western before transferring to a senior institution. If a student does not plan to transfer before graduation and has not decided on a transfer institution, the student is encouraged to complete a Transfer Module before transferring. A transfer module is a package of courses that all senior public institutions in Virginia have agreed to accept as complete or partial fulfillment of their general education requirements. A list of the courses included in the Transfer Module is available in the Transfer Center.

Transfer Agreements Guaranteeing Admission

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

- Students may apply and be guaranteed junior level admission at Ferrum College, Virginia Commonwealth University, and Virginia State University provided they complete an Associate of Arts or Associate of Science degree program at Virginia Western with a GPA of 2.0 or higher.
- Hollins University offers Virginia Western students guaranteed admission at the junior level provided they complete an Associate of Arts or Associate of Science degree program at Virginia Western with a GPA of 2.5 or higher.
- Mary Baldwin College offers Virginia Western students guaranteed admission at the junior level provided they complete an Associate of Arts, Associate of Science, or a transfer-oriented degree program with a curricular grade point average of 2.5 or higher.
- Old Dominion University offers Virginia Western students guaranteed admission at the junior level provided they complete an Associate of Arts or Associate of Science degree program at Virginia Western with a GPA of 2.2 or higher.

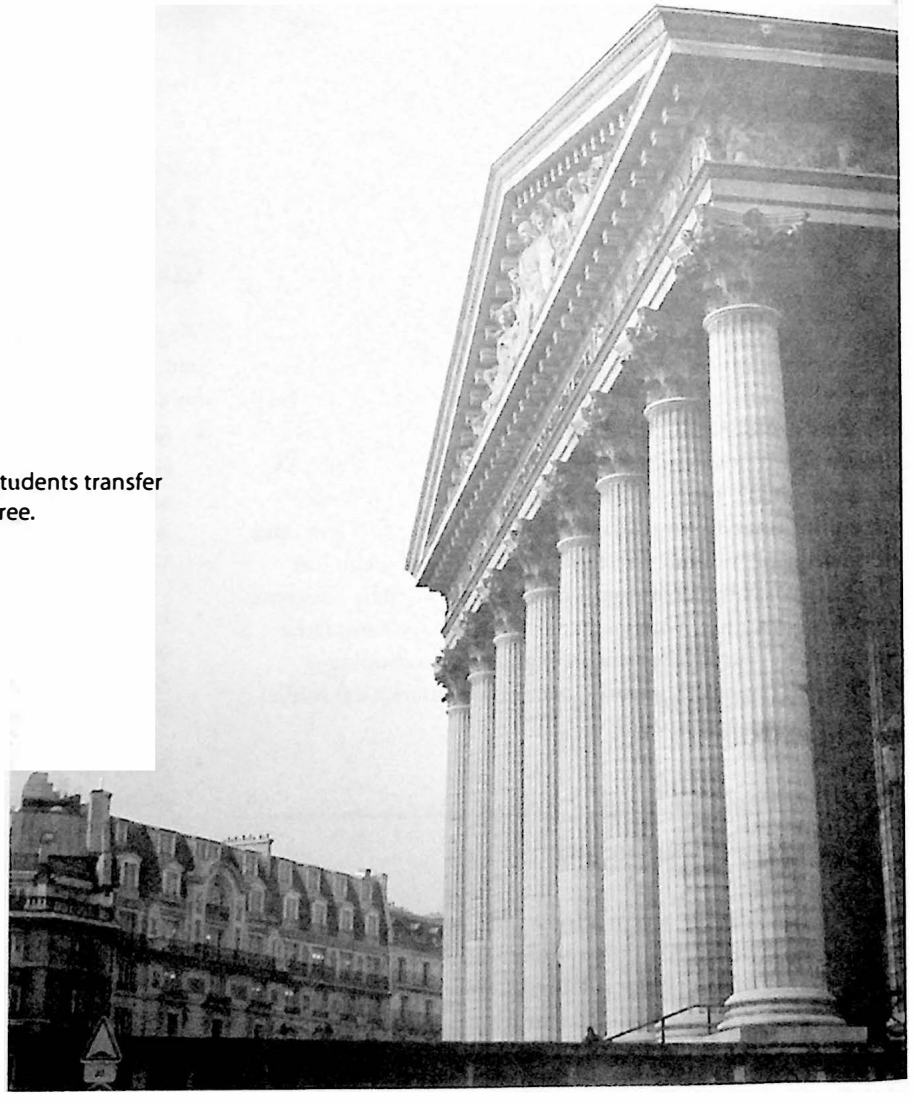
- Radford University guarantees admission into the following programs with certain stipulations (see Counseling): Criminal Justice degree program, General Studies degree program, Interdisciplinary Studies degree program, Medical Technology degree program, Nursing degree program, Organizational Management, Social Work degree program, and College of Information Systems and Technology.
- Roanoke College offers Virginia Western students guaranteed admission at the junior level provided they complete an Associate of Arts or Associate of Science degree program at Virginia Western with a GPA of 2.2 or higher.
- Virginia Tech gives special consideration for admission to the College of Agriculture and Life Sciences to any student who graduates from Virginia Western with an AS degree (or completes at least 45 credit hours), who has a grade-point average of 3.0 or higher, and who has completed certain prescribed courses. Ideally, students seeking admission to Virginia Tech under this Guaranteed Transfer Program should complete and sign a letter of agreement with the university during their first semester at Virginia Western.
- Based on an articulation agreement with Virginia Tech, students who complete the Engineering AS degree with a cumulative GPA of 3.0 are guaranteed admission to the general engineering program at Virginia Tech.

Education pays

61% of Virginia Western graduates transfer to four-year colleges and universities, including...

Radford University	78
Virginia Tech	26
Old Dominion University	17
Roanoke College	14
James Madison University	10
Hollins University	7
Ferrum College	6
Liberty University	6
Virginia Commonwealth University	6
Mary Baldwin College	5
Bluefield College	4
University of Virginia	3
Emory and Henry	1
Mary Washington	1
UVA at Wise	1

Note: This table only lists graduates; many students transfer without completing an associate degree.



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

Social Sciences major
- Education specialization
- Fire Science specialization

Associate of Applied Science (AAS)

Accounting major
Administration of Justice major
Administrative Support Technology major
- Administrative Assistant specialization
- Legal Administrative Assistant specialization
- Medical Administrative Assistant specialization

Architectural/Civil Engineering Technology major
- Geographic Information Systems specialization

Communication Design major
Computer and Electronics Technology major
Culinary Arts major
Dental Hygiene major
Early Childhood Development major
Horticulture Technology major
- Interior Landscaping/Floriculture specialization
- Landscape specialization

Human Services major

Information Systems Technology major
Management major
- Banking and Finance specialization
- Marketing Specialization
- Real Estate specialization

Mechanical Engineering Technology major
Nursing major
- Commonwealth Nursing

Paralegal Studies major
Radiography major
Technical Studies major
- Electromechanical Technology specialization

Veterinary Technology major

Certificate Programs

Air Conditioning and Refrigeration
Child Care
Clerical Studies
General Education
Geographical Information Systems
Interior Design
Medical Office Records Management
Medical Transcriptionist
Practical Nursing
Radiation Oncology
Surgical Technology
Welding

Career Studies Programs

Air Conditioning and Refrigeration
Architectural/Civil Engineering Aide
Art Foundations
Automotive Analysis and Repair
Building Construction Trades
- Building Construction option
- Electrical option
- HVAC option
- Plumbing option

Business Industrial Supervision
Cisco™ CCNA Networking
College Preparation in English
College Preparation in Mathematics
Computer Aided Drafting Career Exploration
Culinary Arts
Electrical Wiring
Electromechanical Technology
Emergency Medical Services Basic Technician
Firefighting and Prevention
Geographical Information Systems Career Exploration
Health Records Coding
Health Technology
- Pre-Commonwealth Nursing option
- Pre-Dental Hygiene option
- Pre-Nursing option
- Pre-Radiography option
- Pre-Practical Nursing option
- Pre-Radiation Oncology option
- Pre-Surgical Technology option
- Pre-Veterinary Technology option

Horticulture
- Floral Design and Indoor Plant Care
- Landscaping and Outdoor Plant Care
- Plant Propagation and Production
- Urban Tree Management

Information Technology
- Computer Graphics and Internet Programming
- E-Commerce Computer Application Development
- Help Desk Technician
- Microsoft® Certified Professional Developer
- Mobile Programming
- Network and Database Administration
- Network Technician
- Web Scripting and Design

Maintenance Technology
Medical Office Specialist
Microcomputer Systems Technology
Office Assistant
Office Technology
Pharmacy Technician
Welding: Intensive Welding Training
Welding: Welding and Metal Processing

Graduation Requirements

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

Associate Degree

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

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

Certificate and Career Studies

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

1. Fulfilled all of the course and credit hour requirements of the curriculum as specified in the College catalog with 25% of the credits acquired at Virginia Western;
2. Been certified by an appropriate College official for graduation;
3. Earned a grade point average of 2.0 in all studies attempted that are applicable toward graduation in their curricula;
4. Filed an application for graduation in the Records Office;
5. Resolved all financial obligations to the College and returned all library and other College materials.

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%. Questions regarding the awarding of multiple degrees should be directed to the appropriate Division 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).

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

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

Communication Proficiency in the areas of listening, speaking, reading, and writing.

Learning skills Skills to locate and use information resources; ability to apply methods of inquiry; attitudes that support lifelong learning.

Critical thinking The ability to evaluate and analyze information, events, and problems; skills in developing interpretations, inductive and deductive generalizations, causal explanations, and conclusions.

Interpersonal skills and human relations Knowledge of self; understanding of ethics, social responsibilities, and personal values; skills to recognize different perspectives and cultural values; skills to interact effectively with others; skills and attitudes that promote success in life.

Computational and computer skills Skills to understand and interpret numerical data; skills to manipulate data in a logical way; knowledge of basic computer elements, functions, and applications.

Understanding culture and society Attitudes and values that promote citizenship; knowledge of social, economic, and political institutions; historical consciousness and a global perspective; awareness and appreciation for artistic forms of expression.

Understanding science and technology Knowledge of fundamental principles of science and technology; ability to make reasoned judgments based on these principles; awareness of impact of science and technology on society.

Wellness Attitudes, values, and skills that promote lifelong physical and emotional well being.

Computer Competency

Virginia Western Community College believes that all students should experience a teaching-learning environment that espouses computer and information literacy in accessing electronic resources and applying knowledge through technology.

Each Virginia Western curriculum that has 45 or more semester credits has been designed to ensure that graduates are computer competent. Prior to graduation students will be able to:

1. Demonstrate a working knowledge of computing concepts, components, and operations to accomplish educational and career tasks.
2. Use appropriate components of an integrated productivity software package involving word processing, spreadsheet, database, presentation, and/or communication applications;
3. Access, retrieve, assess, and apply networked information resources—e.g. online catalog, virtual libraries, the Internet, and World Wide Web;
4. Use telecommunication software—e.g. electronic mail, listservs, bulletin boards, and/or newsgroups—to communicate with faculty, students, and information providers.

Curricular students may not use AST 195/ITE 195 to satisfy computer literacy requirements.

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 regular classes on campus 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 high school 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. 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 regular courses. The tuition is also the same. Learning resources and support services are available to students in distance learning courses; moreover, special accommodations are available, such as access to library materials by phone or mail. While synchronous courses are often restricted to students in a special program at another institution, asynchronous courses are open to all qualified students. Registration information is provided in the Schedule of Classes each semester and is available from the Admissions Office.

Weekend College

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

Each Weekend College class meets on alternating Saturdays from 8:15 a.m. to 11:00 a.m., 11:30 a.m. to 2:15 p.m., or 2:45 p.m. to 5:30 p.m. — 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 Humanities Division 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. Emphasis is placed on student exploration of new ideas, in-depth discussion, and critical thinking. Cultural events, field trips, and participation in the Honors Student Organization provide opportunities for learning outside of the classroom, while building long-lasting relationships with fellow honors students and dedicated faculty.

The benefits of belonging to 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; assistance with university transfers; strong academic and social relationships with other highly motivated students; use of the Honors Institute computer/study room.

Admission to the Honors Institute is by application. Admission decisions are based on a combination of factors including, but not limited to, a 3.5 GPA, SAT 1650 (New SAT), top 10% of high school graduating class, and letters of reference. Direct interest to:

The Honors Institute
Duncan Hall Room 215
Virginia Western Community College
P.O. Box 14007
Roanoke, Virginia 24038
540-857-6240
honorsinstitute@vw.vccs.edu

General studies degree... distance learning

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

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

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

** BIO 101-102 students must attend a few on-campus labs on Saturdays.

ART 101	History and Appreciation of Art I	
MUS 121–122	Music Appreciation I-II	6 CR
Social Science electives (any two)—		6 CR
ECO 202-201	Principles of Economics I–II	
PSY 200	Principles of Psychology	
PSY 215	Abnormal Psychology	
SOC 200	Principles of Sociology	
SPD 100	Principles of Public Speaking	3 CR
General transfer electives		9 CR
Total credits for AS in General Studies		**62 CR**

Education pays

In community involvement...

Higher levels of education are associated with higher levels of volunteer activities.[1]

34% of individuals who attend college volunteer in their community versus 22% of high school graduates.[1]

[1] Source: The College Board, *Education Pays 2004*

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

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 Less expensive

The average cost of attending a public liberal arts college or university in Virginia is $5,000 per year for tuition and fees, plus an additional $5,000 for room and board. (Tuition at private colleges averages about $15,000 per year.) By comparison, tuition and fees for a full-time student at Virginia Western averages just $2,000 per year. Thus, attending Virginia Western for the first two years of college can result in substantial savings.

4 Convenient location

Area residents do not have to leave their family and job to go to college. If they choose to, they can live at home and continue working while attending Virginia Western. The campus is easily accessible to residents throughout the Roanoke area.

5 Flexible class scheduling

Students in most programs of study at Virginia Western can attend evening or day classes, based on their personal preference, family responsibilities, and work schedule. Students can enroll on a full-time basis and earn an associate degree in two years, or attend part-time and advance at their own pace.

6 Excellent facilities

Classrooms and laboratories are well maintained and equipped with state-of-the-art technology. Satellite receivers and fiber optic cable link Virginia Western classrooms and computer labs to a network of resources both within and beyond the campus. The college's library has extensive holdings and is fully automated. Elevators, ramps, and other accommodations provide access to persons with physical disabilities. Abundant, well-lighted parking is provided, and campus security personnel are available around-the-clock for assistance.

7 Student support services

In order to help students establish and achieve their goals, a staff of full-time counselors provides personal assistance. Individual and group counseling is offered to students seeking help with educational, career, or personal needs. To provide a well-rounded college experience, the Student Activities Office sponsors a variety of student organizations, co-curricular programs and special events. In addition, the Knisely Learning Technology Center serves as a place for students to obtain individual attention for their academic needs. As a supplement to regular classroom instruction, the Learning Technology Center provides tutoring, computer-aided instruction, audio/visual programs, and other helpful resources. Special assistance for students with disabilities is also available.

8 Smooth transfer of credits

Because Virginia Western is fully accredited by the Southern Association of Colleges and Schools (SACS), credits earned in courses designed for transfer are readily accepted by other institutions. Statewide transfer agreements between the Virginia Community College System and four-year colleges and universities, plus individual arrangements with specific institutions, enable Virginia Western students to complete at least the first two years of study toward a bachelor's degree. Feedback from four-year institutions consistently indicates that Virginia Western graduates are well-prepared for transfer: typically over 90% are reported to be in good standing, having experienced little if any drop in their grade point average.

9 Employment potential

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 access

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
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 rowspan="4">Minimum 15 credits
(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></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.</td><td>IV. Foundations in Personal Development:
Courses designed to enable students to strive for physical well-being and emotional maturity.</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></tr>
<tr><td>Program Requirements
Major Field Core
Related/Specialization Courses
Electives</td><td>Minimum 15 credits*
Maximum 15 credits
0–15 credits</td></tr>
<tr><td rowspan="2">Totals</td><td>AA/AS/AA&S:**
60–63 credits</td></tr>
<tr><td>AAA/AAS:
65–69 credits***</td></tr>
</table>

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

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

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

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

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

Notes:

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

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

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

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

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

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

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

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

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

Approved List of Transfer Courses—AA and AS Degrees

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

TRANSFER COURSES

Business Courses

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

Computer Science Course

CSC 201-202	Computer Science I-II

General Elective Courses

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

Health and Physical Education Courses

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

Humanities/Fine Arts courses

*	ART 101-102	History and Appreciation of Art I-II
	ART 121-122	Drawing I-II
	ART 131-132	Fundamentals of Design I-II
	ART 241-242	Painting I-II
	ART 243-244	Watercolor I-II
*	ENG 241-242	Survey of American Literature I-II
*	ENG 243-244	Survey of English Literature I-II
	FRE 101-102	Beginning French I-II
	FRE 201-202	Intermediate French I-II
	GER 101-102	Beginning German I-II
	GER 201-202	Intermediate German I-II
*	HUM 201-202	Survey of Western Culture I-II
*	MUS 121-122	Music Appreciation I-II
*	PHI 101-102	Introduction to Philosophy I-II
	PHT 101	Photography I
	REL 200	Survey of the Old Testament
	REL 210	Survey of the New Testament
	REL 230	Religions of the World
*	REL 231-232	Religions of the World I-II
	REL 247	History of Christianity
	SPA 101-102	Beginning Spanish I-II
	SPA 201-202	Intermediate Spanish I-II
	SPA 233	Intro to Spanish Civilization & Literature I

Mathematics Courses

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

Science Courses

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

Social Science Courses

	ECO 201	Principles of Macroeconomics
	ECO 202	Principles of Microeconomics
	GEO 200	Introduction to Physical Geography
	GEO 210	People & the Land: Intro to Cult Geo
	GEO 220	World Regional Geography
*	HIS 101-102	History of Western Civilization I-II
*	HIS 121-122	United States History I-II
	HIS 205	Local History
	HIS 267	The Second World War
*	PLS 211-212	United States Government I-II
*	PLS 241-242	International Relations I-II
**	PSY 200	Principles of Psychology
	PSY 215	Abnormal Psychology
***	PSY 230	Developmental Psychology
	PSY 235	Child Psychology
	PSY 236	Adolescent Psychology
****	SOC 200	Principles of Sociology
	SOC 211-212	Principles of Anthropology I-II
	SOC 215	Sociology of the Family
	SOC 266	Minority Group Relations
	SOC 268	Social Problems

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

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

*** PSY 230 was called PSY 238 prior to Summer 2002

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

Alphabetical Listing of Programs

Accounting – Associate of Applied Science Degree (203)

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

Occupational objectives Technician, or trainee in accounting, auditing, or management.

Radford University Bachelor degree program As a result of an articulation agreement with Radford University, any student who completes the Associate of Applied Science (AAS) degree in Accounting will be granted admission to the Radford University Bachelor of Business Administration (BBA) degree in Accounting offered on the Virginia Western Community College campus in Roanoke. MTH 163 and MTH 271 are required instead of MTH 120 or BUS 125 for students in this transfer program.

Curriculum admission guidelines Minimum of two units of high school mathematics, one of which must be Algebra or the equivalent and proficiency in high school English. Developmental courses will be recommended for students with deficiencies in English and mathematics.

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

Curriculum and Other Requirements

		Credits
ACC 124	Payroll Accounting I	2
ACC 211-212	Principles of Accounting I-II	6
ACC 213-214	Principles of Accounting Lab I-II	2
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 125	Applied Business Mathematics (or MTH 271	3
BUS 225	Applied Business Statistics	3
BUS 241	Business Law I	3
ECO 202-201	Principles of Microeconomics and Macroeconomics	6
ENG 111	College Composition I	3
FIN 215	Financial Management	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Introduction to Computer Applications and Concepts	3
ITE 140	Spreadsheet Software	3
MKT 100	Principles of Marketing (or BUS 100 or BUS 200)	3
MTH 120	Introduction to Mathematics (or MTH 163	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 105	Oral Communication (or SPD 100)	3
E[2]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**68**

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

[2] Humanities/Fine Arts Elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

Fall
ACC 211
ACC 213
ECO 202
ENG 111
ITE 115
MTH 120 or MTH 163
SDV 100 (SDV 108)

Spring
ACC 212
ACC 214
BUS 125 or MTH 271
ECO 201
MKT 100 or BUS 100 or BUS 200
SPD 105 or SPD 100

Fall
ACC 124
ACC 221
ACC 231
ACC 261
BUS 225
ITE 140

Spring
ACC 215
AST 205
BUS 241
FIN 215
Humanities/Fine Arts Elective
HLT/PED

Administration of Justice

Associate of Applied Science degree (400)

Purpose This curriculum program has two primary purposes: (1) to prepare students for careers in criminal justice, and (2) to provide the first two years' academic foundation for transfer into a four-year professional degree program in the discipline.

Occupational objectives The program is designed to aid those seeking careers (or seeking advancement) in:

- Law enforcement (local, state, federal)
- Private and public security
- Law (paralegal, magistrate, prosecution/ defense attorney, judge, court services and administration)
- Corrections (jail, prison, community-based agencies, probation, parole, rehabilitation program staff)
- Juvenile justice (casework, detention, counseling services)

Educational objectives The degree program is designed to aid those seeking a baccalaureate degree from four-year institutions having programs in Administration of Justice, Criminal Justice, Criminology, Law Enforcement, Police Science, and Public Service. A number of the careers listed under occupational objectives require four-year or advanced degrees; thus, it is important that each student consult early in college enrollment with the program head concerning career and academic goals. Of special note—though the program is geared for maximum transferability from Virginia Western to any four-year institution, it is specifically focused to meet the requirements of the Radford University program.

Radford University Bachelor Degree Program Any student who completes the coursework requirements having a "C" grade or above in all courses will be granted admission to the Radford University "Two-Plus-Two" Bachelor of Science degree program in Criminal Justice. This program is particularly attractive since a maximum of 87 semester-hour credits will transfer to Radford from Virginia Western and the remaining 33 semester-hour credits of Radford courses are offered on the Virginia Western campus;

Curriculum and Other Requirements

		Credits
Administration of Justice Degree		
ADJ 100	Survey of Criminal Justice	3
ADJ 120	Introduction to Courts	3
ADJ 140	Corrections	3
ADJ 229[1]	Law Enforcement and the Community	3
ENG 111-112	College Composition I-II	6
HLT/PED[2]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 157	Elementary Statistics	3
PHI 102	Introduction to Philosophy II	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
SPD 100	Principles of Public Speaking	3
E[3]	Laboratory science electives	8
E[4]	Humanities/Fine Arts Elective	3
E[5]	Administration of Justice electives	12
Total Minimum Credits for Transfer Degree		**65**

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

[1] Prerequisite: ADJ 100.

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

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

[4] Humanities/Fine Arts Elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

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

ADJ 105 Juvenile Justice System (fall only)
ADJ 107 Survey of Criminology (spring only)
ADJ 130 Introduction to Criminal Law (fall only)
ADJ 227 Constitutional Law for Justice Personnel (spring only)
ADJ 236 Principles of Criminal Investigation (fall only)

Note: Substitution of courses for requirements must first be approved by ADJ program head before enrolling in courses. Other than English and Science classes, courses may be taken in any order. ADJ 100 should be taken as soon as possible. Also, students should be aware that classes such as ADJ 236 and ADJ 130 are usually offered in the fall semester and classes such as ADJ 227 and ADJ 229 are usually offered in the spring semester.

Administration of Justice, continued

Associate of Applied Science degree (400)

thus both the AAS and BS degrees are earned in Roanoke at substantial financial savings.

Credit for experience Coursework credits may be awarded for criminal justice training and experience. Articulation agreements with some agencies (such as the Virginia State Police Academy) and individual evaluation will determine the extent of the crediting. If you have such experience (police training, military, security or corrections) consult with the program head about possible credits. However, students should realize that credit for experience may not be accepted as transfer credit by a four-year institution. Students should check with the institution to which they plan to transfer.

Curriculum admission guidelines Proficiency in high school English; Algebra I, Algebra II, and Geometry. Developmental courses may be required or recommended for those with deficiencies in English or mathematics.

Humanities elective Radford accepts **only** ENG 242, ENG 243, PHI 101, PHI 102; REL 200, REL 215, REL 230.

Curriculum and Other Requirements

Credits

Suggested Course Sequence

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

Administrative Support Technology

Associate of Applied Science degree (400)

Purpose The curriculum is designed to prepare persons for full-time employment upon completion of the community college program. Individuals who are seeking initial employment in an office position and those who are seeking promotion may benefit from this curriculum.

Occupational objectives Administrative assistant, legal administrative assistant, medical administrative assistant, word processor, or related office occupations.

Curriculum admissions guidelines Minimum of two units of high school mathematics, one of which must be Algebra or the equivalent, and proficiency in high school English. Developmental courses may be recommended for students with deficiencies in English or mathematics.

Essential functions To successfully complete each keyboarding class, the student must be able to type without watching his or her hands while meeting the minimum speed and accuracy requirements.

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

Curriculum and Other Requirements

		Credits
Administrative Assistant Specialization (05)		
ACC 211	Principles of Accounting I	3
ACC 213	Principles of Accounting Lab I	1
AST 102[1]	Keyboarding II	3
AST 107	Editing/Proofreading Skills	3
AST 113	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Microsoft® Windows	1
AST 141	Word Processing I (Microsoft® Word)	3
AST 201	Keyboarding III – Office Simulation	3
AST 205[5]	Business Communications	3
AST 232	Microcomputer Office Applications	3
AST 236	Specialized Software Applications	3
AST 238	Advanced Word Processing	3
AST 240[4]	Machine Transcription	3
AST 243-244	Office Administration I-II	6
BUS 200	Principles of Management	3
BUS 241	Business Law	3
ECO 202	Microeconomics	3
ENG 111	College Composition I	3
HLT/PED[2]	Health or Physical Education	2
MTH 120	Introduction to Mathematics (or MTH 163)	3
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Support Technology	1
SPD 105	Oral Communication	3
E[3]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**66**

[1] Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test Co-requisite AST 113.

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

[3] Humanities/Fine Arts Elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

[4] Prerequisites: AST 102 and AST 107.o

[5] Prerequisites: AST 114 or AST 101 or equivalent and ENG 111 or AST 107.

Suggested Course Sequence

Fall	Spring
AST 102	AST 141
AST 107	BUS 200
AST 113	BUS 241
AST 140	HLT/PED
ENG 111	PSY 120
MTH 120 or MTH 163	SPD 105
SDV 101	

Fall	Spring
AST 205	ACC 211
AST 232	ACC 213
AST 238	AST 201
AST 240	AST 236
AST 243	AST 244
Humanities/Fine Arts Elective	ECO 202

Administrative Support Technology, continued

Associate of Applied Science degree (400)

Curriculum and Other Requirements — Credits

Legal Administrative Assistant Specialization (02)

AST 102[1]	Keyboarding II	3
AST 107	Editing/Proofreading Skills	3
AST 113	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Microsoft® Windows	1
AST 141	Word Processing I (Microsoft® Word)	3
AST 205[5]	Business Communications	3
AST 213	Legal Keyboarding – Simulation	3
AST 232	Microcomputer Office Applications	3
AST 238	Advanced Word Processing	3
AST 243-244	Office Administration I-II	6
AST 247[4]	Legal Machine Transcription	3
BUS 200	Principles of Management	3
BUS 241	Business Law	3
ECO 202	Principles of Microeconomics	3
ENG 111	College Composition I	3
HLT/PED[2]	Health or Physical Education	2
LGL 110	Introduction to Law and the Legal Assistant	3
LGL 125	Legal Research	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Support Technology	1
SPD 105	Oral Communication	3
E[3]	Humanities/Fine Arts Elective	3

Total Minimum Credits for Degree **65**

[1] Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test. Co-requisite AST 113.

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

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

[4] Prerequisites: AST 102 and AST 107

[5] Prerequisites: AST 114 or AST 101 or equivalent **and** ENG 111 or AST 107

Suggested Course Sequence

Fall	Spring
AST 102	AST 141
AST 107	BUS 200
AST 113	HLT/PED
AST 140	LGL 110
ENG 111	PSY 120
MTH 120 (or MTH 163)	SPD 105
SDV 101	

Fall	Spring
AST 205	AST 213
AST 232	AST 244
AST 238	BUS 241
AST 243	ECO 202
AST 247	LGL 125
Humanities/Fine Arts Elective	

Curriculum and Other Requirements — Credits

Medical Administrative Assistant Specialization (03)

AST 102[1]	Keyboarding II	3
AST 107	Editing/Proofreading Skills	3
AST 113	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Microsoft® Windows	1
AST 141	Word Processing I (Microsoft® Word)	3
AST 205[5]	Business Communications	3
AST 215	Medical Keyboarding-Simulation	3
AST 232	Microcomputer Office Applications	3
AST 238	Advanced Word Processing	3
AST 243-244	Office Administration I-II	6
AST 245[4]	Medical Machine Transcription	3
BUS 200	Principles of Management	3
BUS 241	Business Law	3
ECO 202	Microeconomics	3
ENG 111	College Composition I	3
HLT/PED[2]	Health or Physical Education	2
HLT 143-144	Medical Terminology I-II	6
MTH 120	Introduction to Mathematics (or MTH 163)	3
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Support Technology	1
SPD 105	Oral Communication	3
E[3]	Humanities/Fine Arts Elective	3

Total Minimum Credits for Degree **65**

[1] Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test. Co-requisite AST 113.

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

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

[4] Prerequisites: AST 102, AST 107 and HLT 143

[5] Prerequisites: AST 114 or AST 101 or equivalent **and** ENG 111 or AST 107

Suggested Course Sequence

Fall	Spring
AST 102	AST 141
AST 107	BUS 200
AST 113	HLT/PED
AST 140	HLT 144
ENG 111	MTH 120 (or MTH 163)
HLT 143	SPD 105
SDV 101	

Fall	Spring
AST 205	AST 215
AST 232	AST 244
AST 238	BUS 241
AST 243	ECO 202
AST 245	PSY 120
Humanities/Fine Arts Elective	

Air Conditioning and Refrigeration

Career Studies Certificate (015)

Purpose The career studies program in Air Conditioning and Refrigeration is designed to meet the short-term training needs of the adult part-time student by presenting the essential technical concepts and practices of the air conditioning and refrigeration field. The broad goals of the Air Conditioning and Refrigeration Certificate Program apply to this program as well. All of the courses offered through this program may be applied toward the Certificate in Air Conditioning and Refrigeration.

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

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

Curriculum admission guidelines
Proficiency in high school English and general mathematics. Developmental courses will be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements

		Credits
AIR 121[1]	Air Conditioning and Refrigeration I	3
AIR 122[2]	Air Conditioning and Refrigeration II	3
AIR 123[3]	Air Conditioning and Refrigeration III	3
AIR 165	Air Conditioning Systems I	3
AIR 166[4]	Air Conditioning Systems II	3
BLD 159	Mechanical Code and Certification Preparation	3
ELE 133	Practical Electricity I	3
ELE 134[5]	Practical Electricity II	3
WEL 120	Fundamentals of Welding	3
Total Minimum Credits for Certificate		**27**

[1] Prerequisite or co-requisite for AIR 121 is ELE 133.
[2] Prerequisite or co-requisite for AIR 122 is AIR 121 and ELE 134.
[3] Prerequisite for AIR 123 is AIR 122.
[4] Prerequisite for AIR 166 is AIR 165.
[5] Prerequisite for ELE 134 is ELE 133.

Note: AIR students are required to provide their own electrical multimeter and refrigerant gauges as detailed in the course syllabus.

Suggested Course Sequence

Fall	Spring
AIR 121	AIR 122
ELE 133	ELE 134
Fall	**Spring**
AIR 123	AIR 165
BLD 159	AIR 166
	WEL 120

Air Conditioning and Refrigeration – Certificate (903)

Purpose Throughout our region (and the nation) there is a continuous need for skilled people to install and service a growing number of commercial, industrial, and home air conditioning systems. The Air Conditioning and Refrigeration program is designed to prepare graduates for full-time employment in the installation, maintenance, and repair of air conditioning and refrigeration equipment.

The certificate program is offered on a part-time evening schedule and is intended for beginners as well as those currently working in the field. Necessary courses in related technical areas as well as business and economics are included in the program.

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. Applicants for the Journeyman HVAC exam must provide evidence of two years of practical experience to become certified. This certification test is given on campus during the student's first year of studies.

Occupational objectives Air conditioning/refrigeration system installer; air conditioning system service technician; air conditioning sales; heating, ventilation, and air conditioning estimator.

Curriculum admission guidelines
Proficiency in high school English and general mathematics. Developmental courses will be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements

		Credits
AIR 121[1]	Air Conditioning and Refrigeration I	3
AIR 122[2]	Air Conditioning and Refrigeration II	3
AIR 123[3]	Air Conditioning and Refrigeration III	3
AIR 165	Air Conditioning Systems I	3
AIR 166[4]	Air Conditioning Systems II	3
BLD 159	Mechanical Code and Certification Preparation	3
ELE 133	Practical Electricity I	3
ELE 134[5]	Practical Electricity II	3
SDV 100	College Success Skills (SDV 108)	1
WEL 120	Fundamentals of Welding	3
Required Courses that May be Taken Any Semester		
BUS 165	Small Business Management	3
ENG 111	College Composition I	3
E[6]	Social Science Elective	3
Total Minimum Credits for Certificate		**37**

[1] Prerequisite or co-requisite for AIR 121 is ELE 133.
[2] Prerequisite or co-requisite for AIR 122 is AIR 121 and ELE 134.
[3] Prerequisite for AIR 123 is AIR 122.
[4] Prerequisite for AIR 166 is AIR 165.
[5] Prerequisite for ELE 134 is ELE 133.
[6] Social Science elective.

Note: AIR students are required to provide their own electrical multimeter and refrigerant gauges as detailed in the course syllabus.

Suggested Course Sequence

Fall	Spring
AIR 121	AIR 122
ELE 133	ELE 134
SDV 100 (SDV 108)	
Fall	**Spring**
AIR 123	AIR 165
BLD 159	AIR 166
WEL 120	

Architectural/Civil Engineering Aide

Career Studies Certificate (082)

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

Occupational objectives Architectural or civil engineering technology aide.

Curriculum admission guidelines
Proficiency in high school English and three units of mathematics (one unit of Algebra). Developmental courses may be recommended for students with deficiencies in English and mathematics. Computer literacy is a requirement for admission.

Curriculum and Other Requirements

		Credits
ARC 133	Construction Methodology and Procedures I	3
ARC 221	Architectural CAD Applications Software I	3
CIV 135	Construction Management and Estimating	3
CIV 171	Surveying I	3
DRF 201-202[1]	Computer Aided Drafting and Design I-II	6
DRF 238	Computer Aided Modeling and Rendering	3
MTH 115	Technical Mathematics I	3
Total Minimum Credits for Certificate		**24**

[1] Students may be awarded credit for DRF 201 based on articulation agreements with several local high schools.

Suggested Course Sequence

Fall	Spring
DRF 201	ARC 133
MTH 115	DRF 202
	DRF 238
Fall	**Spring**
ARC 221	CIV 135
	CIV 171

Education pays

Architectural/Civil Engineering Aide...

Virginia average starting salary: $27,100[1]

Virginia median salary: $39,100[1]

Best opportunities are for those with post-secondary educational training and skill in computer-aided design and drafting systems[2]

[1] Source: America's Career InfoNet>Occupation Profile>Drafters>Virginia (2005)

[2] Source: U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook*

Architectural/Civil Engineering Technology

Associate of Applied Science Degree (895)

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

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

Curriculum admission guidelines
Proficiency in high school English and three units of mathematics (two units of Algebra and one unit of Geometry or Trigonometry). Developmental courses may be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements

		Credits
ARC 100	Introduction to Architecture	3
ARC 133	Construction Methodology and Procedures I	3
ARC 221	Architectural CAD Applications Software I	3
CIV 135	Construction Management and Estimating	3
CIV 171	Surveying I	3
DRF 201-202[3]	Computer Aided Drafting and Design I-II	6
DRF 238	Computer-Aided Modeling and Rendering	3
EGR 216	Computer Methods in Engineering and Technology	3
ENG 111	College Composition I	3
GEO 200[2]	Introduction to Physical Geography	3
GIS 200-201	Geographical Information Systems I-II	8
HLT/PED[1]	Health or Physical Education	2
MEC 131	Mechanics I – Statics for Engineering Technology	3
MEC 132	Mechanics II – Strength of Materials for Engineering Technology	3
MTH 115-116	Technical Mathematics I-II	6
PHY 201[4]	General College Physics I	4
SDV 101	Orientation to Engineering and Engineering Technology	1
SPD 100	Principles of Public Speaking (or SPD 105)	3
E[5]	Humanities/Fine Arts Elective	3
E[2]	Social Science Elective	3
Total Minimum Credits for Degree		**69**

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

[2] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at Virginia Western that will satisfy the Social Science requirements at the four-year institution.

[3] Students may be awarded credit for DRF 201 based on articulation agreements with several local high schools.

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

[5] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

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

Architectural/Civil Engineering Technology, continued

Associate of Applied Science Degree (895)

Old Dominion University Bachelor Degree Program As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Architectural/Civil Engineering Technology may earn a baccalaureate degree (BS) in Engineering Technology on the Virginia Western Community College campus in Roanoke

Curriculum and Other Requirements

Geographic Information Systems Specialization (01)

		Credits
ARC 221	Architectural CAD Applications Software I	3
CIV 171	Surveying I	3
DRF 201-202[3]	Computer-Aided Drafting and Design I-II	6
EGR 126	Computer Programming for Engineers (or ITP 112)	3
EGR 216	Computer Methods in Engineering and Technology	3
ENG 111	College Composition I	3
GEO 200	Introduction to Physical Geography	3
GIS 200-201	Introduction to Geographical Information Systems I-II	8
GIS 205	Three Dimensional Analysis	4
GIS 210	Understanding Geographic Data	4
HLT/PED[1]	Health or Physical Education	2
MEC 131	Mechanics I-Statics for Engineering Technology	3
MEC 132	Mechanics II – Strength of Materials for Engineering Technology	3
MTH 115-116	Technical Mathematics I-II	6
PHY 201[4]	General College Physics I	4
SDV 101	Orientation to Engineering & Engineering Technology	1
SPD 100	Principles of Public Speaking (or SPD 105)	3
	Humanities/Fine Arts Elective	3
	Social Science Elective	3

Total Minimum Credits for Degree **68**

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

[2] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[3] Students may be awarded credit for DRF 201 based on articulation agreements with several local high schools.

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

[5] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 50.

Suggested Course Sequence

Fall	Spring
DRF 201	DRF 202
EGR 216	EGR 126
ENG 111	HLT/PED
GEO 200	MEC 131
MTH 115	MTH 116
SDV 101	Humanities/Fine Arts Elective
Fall	**Spring**
ARC 221	CIV 171
GIS 200	GIS 201
GIS 210	GIS 205
MEC 132	SPD 100
PHY 201	Social Science Elective

Art Foundations – Career Studies Certificate (088)

Purpose The curriculum is designed to provide students with a course of study that will prepare them for admission into the Communication Design curriculum at Virginia Western, for transfer into an art program at a four-year college, or to provide a background specifically in studio art for interested students.

Graduates from this career studies program will have completed the prerequisites required for the Communication Design curriculum at Virginia Western and are ready to participate in the portfolio review process required for admission into that program. Completion of the career studies certificate does not guarantee admission into the Communication Design program.

Students interested in the Communication Design curriculum should see that program description for other supplemental courses required by that program. These courses may be taken prior to admission into the program.

Students who plan to transfer into a four-year art program are advised to also consider the general studies or liberal arts: fine arts curricula. In those programs students can take art courses in place of their humanities electives. This certificate program is designed for those who have already completed their general education courses and may have a major in another area and need more art background before transferring into a four-year art program.

This career studies certificate is also designed for the student who wants to explore the arts, but does not desire an associate's degree at this time.

Curriculum and Other Requirements

		Credits
ENG 111	College Composition I	3
ART 121-122	Drawing I-II	6
ART 131-132	Fundamentals of Design I-II	6
ART 141[1]	Typography	3
ART 180	Introduction to Computer Graphics	3
ART 250[2]	History of Design	3
PHT 101	Photography I	3
SDV 101	Orientation to Visual Arts	1
Total Minimum Credits for Certificate		**28**

[1] Students interested in a transfer art program other than Communication Design should substitute ART 241 or ART 243 in place of ART 141.

[2] Students interested in a transfer art program other than Communication Design should substitute ART 101 in place of ART 250.

Suggested Course Sequence

Fall	Spring
ART 121	ART 122
ART 131	ART 132
ART 180	ART 141
ART 250	ENG 111
SDV 101	PHT 101

Automotive Analysis and Repair

Career Studies Certificate (076)

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

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

Curriculum admission guidelines Proficiency in high school English and general mathematics. Developmental courses may be recommended for students with deficiencies in English and mathematics. A baseline score must be achieved on a differential aptitude test for mechanical reasoning is required for this program. Application required.

Curriculum and Other Requirements

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

Suggested Course Sequence

Fall	Spring
AUT 126	AUT 241
Fall	**Spring**
AUT 265	AUT 266

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

Building Construction Trades

Career Studies Certificate (066)

Purpose The career studies program in Building Construction Trades is designed to help entry-level employees in construction-related trades obtain job-specific knowledge and skills to improve their work performance and career status within the industry. The curriculum will provide an understanding of the common principles and practices of the modern construction industry as well as specific knowledge and skills in a trade area selected by the student. Four specializations are available: Electrical, HVAC, Plumbing, and Building. The courses contained in these programs are applicable to fulfilling the related education requirements that are prerequisite to taking the Journeyman or Master certification tests. Information on specific trade certification requirements may be obtained from the National Assessment Institute (NAI), Toll-Free in Virginia 1-800-356-3381. Classes are scheduled during the evening hours.

Occupational objectives Journeyman or Master's level tradesman certification in electrical, mechanical, and plumbing fields.

Curriculum admission guidelines Proficiency in high school English and mathematics (MTH 02 or equivalent).

Curriculum and Other Requirements

		Credits
Building Construction Option (05)		
BLD 131-132-133-134	Carpentry Framing I-II-III-IV	20
Total Minimum Credits for Certificate		**20**
Electrical Option (01)		
BLD 111	Blueprint Reading and the Building Code	3
BLD 180	Virginia Contractor License Review	2
ELE 110	Home Electric Power	3
ELE 133-134	Practical Electricity I-II	6
ELE 138	National Electrical Code	2
Total Minimum Credits for Certificate		**16**
HVAC Option (02)		
AIR 121-122-123	Air Conditioning and Refrigeration I-II-III	9
BLD 111	Blueprint Reading and the Building Code	3
BLD 159	Mechanical Code and Certification Preparation	3
BLD 180	Virginia Contractor License Review	2
Total Minimum Credits for Certificate		**17**

Note: AIR students are required to provide their own electrical multimeter and refrigerant gauges as detailed in the course syllabus.

Plumbing Option (03)		
BLD 20	Introduction to Plumbing	2
BLD 25	Analysis and Troubleshooting in Plumbing	3
BLD 111	Blueprint Reading and the Building Code	3
BLD 143	Plumbing Blueprint Reading	3
BLD 144	Plumbing Code and Certification Preparation	3
WEL 120	Fundamentals of Welding	3
Total Minimum Credits for Certificate		**17**

Business Administration– Associate of Science Degree (213)

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

Curriculum admission guidelines Four units of high school English; three units of mathematics (Algebra and Geometry); one unit of Laboratory Science; and one unit of Social Studies. Developmental courses may be recommended for students with deficiencies in English and Mathematics.

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

Curriculum and Other Requirements

		Credits
ACC 211-212	Principles of Accounting I-II	6
ACC 213-214	Principles of Accounting Lab I-II	2
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 Literature I (or ENG 243)	3
HIS 101	History of Western Civilization I (or HIS 121)	3
HLT/PED[3]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 163	Pre-Calculus I (or MTH 175-177)	3-5
MTH 241-242[2]	Statistics I-II (or Elective)	6
MTH 271	Applied Calculus I (or MTH 176-178)	3-5
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[1]	Science Sequence	8
E[2]	Elective	6
Total Minimum Credits for Degree		**61**

[1] A two-semester sequence of natural science must be chosen from the following: BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202.

[2] Electives may be substituted from the "Approved List of Transfer Courses" on page 50.

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

Suggested Course Sequence

Fall
ENG 111
HIS 101 or HIS 121
MTH 163 or MTH 175-177
SDV 100 (or SDV 108)
Science Sequence

Spring
ENG 112
MTH 271 or MTH 176-178
Science Sequence
Elective

Fall
ACC 211
ACC 213
ECO 202
ENG 241 or ENG 243
HLT/PED
ITE 115
MTH 241 or Elective

Spring
ACC 212
ACC 214
ECO 201
MTH 242 or Elective
SPD 100
Elective

Business Industrial Supervision

Career Studies Certificate (018)

Occupational objectives Program is designed to prepare the individual to operate in business and industry on the supervisory level. The individual is prepared for employment in the area of supervision, training, employee relations, and various foreman positions.

Curriculum and Other Requirements

		Credits
BUS 100	Introduction to Business	3
BUS 111	Principles of Supervision I	3
BUS 205	Human Resource Management	3
ENG 111	College Composition I	3
ITE 115	Intro Computer Applications and Concepts	3
PSY 200	Principles of Psychology	3
SAF 126	Principles of Industrial Safety	3
Total Minimum Credits for Certificate		**21**

Suggested Course Sequence

Fall
BUS 100
PSY 200

Spring
BUS 111
BUS 205

Fall
ENG 111
ITE 115
SAF 126

Child Care – Certificate (634)

Purpose The curriculum is designed to introduce interested persons, including parents, to the field of early childhood education and to provide opportunities for persons presently working in this field or allied professions to improve the knowledge and skills necessary to foster development in young children (intellectual, social, physical, emotional, and creative). Also, this curriculum has been established to provide competencies in the areas proposed for the Child Development Associate Credential of the National Association for the Education of Young Children.

Occupational objectives Positions in child care centers, nursery schools, recreation programs, foster homes, hospital playrooms, family day care facilities, in-home care, and other facilities offering services for pre-school children.

Curriculum admission guidelines Evidence that the applicant possesses the intellectual, emotional, and physical capacities and the interest and aptitude necessary for relating successfully to young children. Developmental courses may be recommended for students with deficiencies in English and mathematics. Each student is responsible for transportation to and from field sites used for laboratory experience. Students considering further work in early childhood education are advised to consult the catalog listing for Early Childhood Development, AAS degree, and/or Education.

Advanced placement Students who have completed a two or three year child care/early childhood development curriculum in an area high school may be awarded credit for CHD 122 with certain conditions, including that the student can submit proper documentation.

Curriculum and Other Requirements

		Credits
CHD 121	Childhood Educational Development I	3
CHD 122	Childhood Educational Development II	3
CHD 125	Creative Activities for Children	3
CHD 210	Introduction to Exceptional Children	3
CHD 216	Early Childhood Programs, School, and Social Change	3
CHD 270	Administration of Early Childhood Programs	3
ENG 111-112	College Composition I-II	6
HLT 106[1]	First Aid and Safety	2
HLT 135	Child Health and Nutrition	3
PSY 120	Human Relations	3
PSY 235	Child Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
Total Minimum Credits for Certificate		**36**

[1] The requirement for first aid training may be met by a Red Cross certificate in basic first aid. An additional two hours of coursework must be taken to fulfill the credit hours requirement.

Suggested Course Sequence

Fall
CHD 121 (fall only)
CHD 125 (fall only)
CHD 210
CHD 270 (fall only)
ENG 111
HLT 106
SDV 100 or SDV 108

Spring
CHD 122
CHD 216 (spring only)
ENG 112
HLT 135
PSY 120
PSY 235

Cisco™ CCNA™ Networking – Career Studies Certificate (078)

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

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

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

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

Curriculum admission guidelines Proficiency in high school English, Algebra I and familiarity with basic computer operating systems and applications. Developmental courses will be required for students with deficiencies in English and mathematics. Students lacking the necessary computer skills should take ITE 115 along with the regular first semester courses.

Curriculum and Other Requirements

		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**

Suggested Course Sequence

Fall	Spring
TEL 150	TEL 151
Fall	**Spring**
TEL 250	TEL 251

Clerical Studies – Certificate (218)

Purpose The curriculum is primarily designed to train persons for full-time employment following graduation.

Occupational objectives Typist/data entry, file clerk, receptionist, general office assistant, word processing specialist.

Curriculum admission guidelines Applicant must meet the general requirements for admission to the College. Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test. Developmental courses may be recommended for students with deficiencies in English.

Essential functions To successfully complete each keyboarding class, the student must be able to type without watching his or her hands while meeting the minimum speed and accuracy requirements.

Curriculum and Other Requirements

		Credits
AST 102[1]	Keyboarding II	3
AST 107	Editing/Proofreading Skills	3
AST 113	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Microsoft® Windows	1
AST 141	Word Processing I (Microsoft® Word)	3
AST 201	Keyboarding III – Office Simulation	3
AST 205[3]	Business Communications	3
AST 232	Microcomputer Office Applications	3
AST 238	Advanced Word Processing	3
AST 240[2]	Machine Transcription	3
AST 243-244	Office Administration I-II	6
ENG 111	College Composition I	3
SDV 101	Orientation to Administrative Support Technology	1
Total Minimum Credits for Degree		**36**

[1] Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test.

[2] Prerequisites: AST 102 and AST 107.

[3] Prerequisites: AST 114 or AST 101 or equivalent and ENG 111 or AST 107.

Suggested Course Sequence

Fall
AST 102
AST 107
AST 113
AST 140
AST 141
AST 243
SDV 101

Spring
AST 201
AST 232
AST 238
AST 244

Fall
AST 205
AST 240
ENG 111

College Preparation in English

Career Studies Certificate (048) – Effective Fall 2007

Purpose The curriculum is designed for students whose placement test scores recommended developmental reading and writing courses or for those who desire to further develop their reading and writing skills before beginning their Associate's degree coursework.

This program will prepare students with the reading and writing skills needed for success in college level coursework or entry level job readiness. In addition, students will complete additional courses that will contribute to their future degree programs and job skills. Students will graduate with a career studies certificate and placement into college level standing.

Curriculum and Other Requirements

		Credits
ENG 07[1]	Writing and Reading Improvement I (or ENG 01 & 04)	8
HLT/PED[2]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
SDV 100	College Success Skills (or SDV 101 or SDV 108)	1
E[3]	Math Elective	3
Total Minimum Credits for Degree		**17**

[1] If only ENG 01 is required ENG 111 may be substituted for ENG 04, but may only be taken after ENG 01 and SDV 100 are successfully completed.

[2] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service with honorable discharge.

[3] This should be a math course that is applicable to the students academic or career needs. A developmental math may be used to fulfill this requirement. Students should consult an advisor or the Math/Science division office when choosing this class.

Suggested Course Sequence

Students should meet with a counselor to develop an individual plan based on placement results. SDV 100 should be taken during the first semester of enrollment.

College Preparation in Mathematics

Career Studies Certificate (049) – Effective Fall 2007

Purpose The curriculum is designed for students whose placement test scores recommended developmental math courses or for those who desire to further develop their math skills before beginning their Associate's degree coursework.

This program will prepare students with the math skills needed for success in college level coursework or entry level job readiness. In addition, students will complete additional courses that will contribute to their future degree programs and job skills. Students will graduate with a career studies certificate and placement into college level standing.

Curriculum and Other Requirements		Credits
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 3[2]	Algebra I	4-7
MTH 4	Algebra II	4
SDV 100	College Success Skills (or SDV 101 or SDV 108)	1
E[3]	English Elective	3
Total Minimum Credits for Degree		**17–20**

[1] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service with honorable discharge.

[2] If MTH 9 is recommended by the placement test then both MTH 9 and MTH 3 should be taken.

[3] This can be ENG 1, 3, 4, 7, or 111 depending on placement scores. Students should consult a counselor when choosing this class.

Suggested Course Sequence

Students should meet with a counselor to develop an individual plan based on placement results. SDV 100 should be taken during the first semester of enrollment.

Communication Design

Associate of Applied Science Degree (511)

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

Occupational objectives Advertising design, printing, illustration, photography, digital illustration, digital pre-press, graphic design, Web page design, and related occupations.

Curriculum admission guidelines
A satisfactory aptitude for drawing is desirable. Proficiency in high school English and one unit of high school Algebra are necessary. Proficiency in keyboarding is strongly recommended. Developmental courses may be recommended for students with deficiencies in English, reading, and/or mathematics.

Communication Design is a limited admissions program. Application and acceptance to the program through the portfolio review process is required. Students entering the College who would like to enter the Communication Design program should first register for the Art Foundations Career Studies Certificate. Once they have completed the required coursework, they should apply for the Communication Design program through the Portfolio Review Process outlined below.

Curriculum and Other Requirements		Credits
ART 121-122[1]	Drawing I-II	6
ART 131-132[1]	Fundamentals of Design I-II	6
ART 141[1]	Typography I	3
ART 180[1,4]	Introduction to Computer Graphics	3
ART 221[3]	Drawing III (Figure Drawing)	3
ART 243[3]	Watercolor I (or ART 241)	3
ART 247	Painting Technique for Illustrators	3
ART 250[2]	History of Design	3
ART 251-252	Communication Design I-II	6
ART 282	Graphic Techniques	3
ART 283[3]	Computer Graphics I (Adobe PhotoShop®)	3
ART 284[3]	Computer Graphics II (Digital Illustration)	3
ART 287	Portfolio and Resume Preparation	3
ENG 111[2]	College Composition I	3
HLT/PED[5]	Health or Physical Education	2
MTH 120[6]	Introduction to Mathematics	3
PHT 101[2]	Photography I	3
SDV 101[1]	Orientation to Visual Arts	1
SPD 105[3]	Oral Communication (or SPD 100)	3
E[5,7]	Social Science Elective	6
Total Minimum Credits for Degree		**69**

[1] These classes or their equivalent must be completed prior to admission to the program.

[2] These classes or their equivalent are recommended prior to admission to the program.

[3] These classes may be taken prior to admission to the program.

[4] ART 180 is the prerequisite to all other computer-based classes. It is important to take this class as early in the curriculum as possible.

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

[6] For students who plan to transfer, MTH 151 or MTH 163 is recommended.

[7] Students must complete six credit hours in Social Science by taking either PSY 200 and SOC 200 or one of the following two-semester sequences: ECO 202-201, HIS 101-102, HIS 121-122, or PLS 211-212.

Communication Design, continued

Associate of Applied Science Degree (511)

Portfolio Review Process Due to space availability, enrollment in ART 251, ART 281, ART 247, ART 252, and ART 287 is limited. For any student entering the program after spring semester 2003, eligibility for enrollment in these courses will be determined through a portfolio review selection process. Student portfolios will be evaluated on the following criteria: quality of the work presented, ability to meet the deadline, ability to include all required materials, and grade point average. 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. To be eligible to apply, students must have completed ART 121, ART 122, ART 131, ART 132, ART 180, ART 141, and SDV 101 or the equivalent with a passing grade and must have at least a 2.0 grade point average. Information on the requirements for this process is available in the Humanities Division office. Students not accepted into the program will have the option to reapply the following year. They may continue to take any communication design courses other than ART 251, ART 281, ART 247, ART 252, and ART 287. If all places in a course that falls under this portfolio review process are not filled, those remaining spaces will be available for open enrollment on a first-come first-served basis to those who have completed the prerequisites for those classes.

Suggested Course Sequence

These courses are required prior to admission

ART 121-122
ART 131-132
ART 141
ART 180
SDV 101

These courses are recommended prior to admission

ART 250
ENG 111
PHT 101

Summer

HLT/PED
MTH 120
Social Sciences Elective

Fall

ART 122
ART 241 or ART 243
ART 251
ART 282
ART 283

Spring

ART 247
ART 252
ART 284
ART 287
SPD 105 or SPD 100

Summer

Social Sciences Elective

Computer Aided Drafting Career Exploration

Career Studies Certificate (095)

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

Curriculum admission guidelines

Proficiency in high school English, Algebra I and familiarity with basic computer operating systems and applications. Developmental courses will be required for students with deficiencies in English and mathematics. Students lacking the necessary computer skills should take ITE 115 along with the regular first semester courses.

Curriculum and Other Requirements

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

Suggested High School....

* Students must complete Algebra I–II and Geometry.

Junior
DRF 201

Senior
DRF 202
DRF 203 or ARC 221

Suggested Post High...

Fall
DRF 201

Spring
DRF 202

Fall
DRF 203 or ARC 221

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

Computer and Electronics Technology

Associate of Applied Science Degree (731)

Purpose This program has been designed to prepare the graduate for a career in a broad spectrum of computer and electronics engineering technology roles. The curriculum is composed of a sequence of lecture and laboratory courses that have been chosen to provide both the theoretical foundation and the application experiences essential to industrial practice in a wide range of electrical disciplines, including electronics (circuits and devices), computers (hardware and software), power, and telecommunications.

Students receive instruction in mathematics, oral and written communication skills, programming, and computer applications. Additional courses provide an in-depth study of digital and analog systems found in networks, communications, computers, and machines.

Occupational objectives Electronics technician, computer systems technician, power and control systems technician, and telecommunications technician.

Curriculum admission guidelines Proficiency in high school English and three units of mathematics (two units of Algebra and one unit of Geometry or Trigonometry). Developmental courses may be recommended for students with deficiencies in English and mathematics.

Old Dominion University Bachelor Degree Program As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Computer and Electronics Technology may earn a baccalaureate degree (BS) in Engineering Technology on the Virginia Western Community College campus in Roanoke.

Curriculum and Other Requirements

		Credits
EGR 216	Computer Methods in Engineering and Technology	3
ELE 147	Electrical Power and Control Systems	3
ELE 239	Programmable Controllers	3
ENG 111	College Composition I	3
ETR 113-114	DC and AC Fundamentals I-II	8
ETR 255	Active Devices and Circuits	3
ETR 261	Microprocessor Application I	3
ETR 281	Digital Systems	3
HLT/PED[4]	Health or Physical Education	2
MTH 115-116	Technical Mathematics I-II	6
PHY 201-202[5]	General College Physics I-II	8
SDV 101	Orientation to Engineering and Engineering Technology	1
SPD 100	Principles of Public Speaking (or SPD 105)	3
TEL 150-151[6]	Internetworking I-II	8
E[1]	Humanities/Fine Arts Elective	3
E[2]	Technical Elective	3
E[3]	Social Science Electives	6
Total Minimum Credits for Degree		**69**

[1] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanitiese Transfer Courses" on page 50.

[2] Students may choose from DRF 201, ETR 285, TEL 250 or TEL 251. Students may bee awarded credit for DRF 201, TEL 250, or TEL 251 based on articulation agreements with several local high schools.

[3] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

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

[5] Students not transferring to a four-year institution may substitute a technical elective for PHY 202. Students should see their academic advisor to select an appropriate substitution.

[6] Students may be awarded credit for TEL 150 and TEL 151 based on an articulation agreements with several local high schools

Suggested Course Sequence

Fall
EGR 216
ENG 111
ETR 113
MTH 115
SDV 101
TEL 150

Spring
ELE 147
ETR 114
MTH 116
TEL 151
Humanities/Fine Arts Elective

Fall
ETR 255
ETR 281
PHY 201
Technical Elective
Social Science Elective

Spring
ELE 239
ETR 261
HLT/PED
PHY 202
SPD 100 or SPD 105
Social Science Elective

Culinary Arts – Career Studies Certificate (091)

Business, Engineering, and Technology Division

Purpose This 27 credit hour career studies certificate program is designed to give the student a foundation in food production, the culinary arts field, and an introduction to the hospitality industry. Individuals already employed in the dining and/or hospitality field may complete the certificate to upgrade their skills, develop specializations, and/or expand their career options.

Admission requirements Anyone who is eligible to take college-level classes and is able to benefit from the program may be admitted. The general requirements for admission to the College apply to the program.

Program requirements The curriculum provides a concentration of technical courses in the culinary arts area and a general education requirement that includes courses in humanities and Social Sciences. Students must achieve an overall GPA of 2.0 in all applicable courses to receive a Culinary Arts Career Studies Certificate.

Curriculum and Other Requirements

		Credits
HLT 106	First Aid and Safety	2
HRI 128	Principles of Baking	3
HRI 154	Principles of Hospitality Management	3
HRI 158	Sanitation and Safety	3
ITE 115	Introduction to Computer Applications and Concepts	3
SDV 100	College Success Skills (or SDV 108)	1
E	HRI Elective	3
E	HRI Elective	3
E	Humanities Elective	3
E	Social Science Elective	3
Total Minimum Credits for Certificate		**27**

Suggested Course Sequence for Full-Time Program of Study

Fall	Spring
HLT 106	HRI 128
HRI 154	HRI Elective
HRI 158	HRI Elective
SDV 100 or SDV 108	ITE 115
Social Science Elective	Humanities Elective

Suggested Course Sequence for Part-Time Program of Study/ Apprenticeship

Fall	Spring	Summer
HRI 154	HRI 128	ITE 115
HRI 158	HRI Elective	
Fall	**Spring**	**Summer**
SDV 100 or SDV 108	HRI Elective	HLT 106
Social Science	Humanities Elective	

Culinary Arts – Associate of Applied Science (Pending Approval)

Business, Engineering, and Technology Division

Purpose This program is designed to produce the trained hospitality and tourism workforce necessary to realize the Region's goal in establishing the Roanoke Valley area as a travel, convention, and tourism destination. Such a workforce will not only serve our visitors, but will also enrich our community by providing quality dining and memorable hospitality experiences in our local restaurants, clubs, and hotels. Based on statewide projections, during the next decade there will be a great demand for qualified culinary workers at multiple levels to service the growing needs of the culinary and hospitality industry in our society. As a provider of a skilled culinary and hospitality workforce, we will support the various regional economic development initiatives through our partnership with area businesses and public sector organizations. The curriculum provides a technical education in culinary arts and is intended to lead to employment in the hospitality industry or to other postsecondary educational opportunities. The curriculum is competency-based and articulates with secondary school programs in the college's service area.

Occupational objectives The Associate of Applied Science in Culinary Arts degree prepares graduates to enter the workforce 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.

Curriculum admission guidelines Proficiency in high school English, general mathematics, and reading. Developmental courses may be recommended for students with deficiencies in English, mathematics, or reading.

Curriculum and Other Requirements

		Credits
ENG 111	College Composition I	3
HRI 106	Principles of Culinary Arts I	3
HRI 119	Application of Nutrition for Food Service	3
HRI 128	Principles of Baking	3
HRI 134	Food and Beverage Service Management	3
HRI 145	Garde Manger	3
HRI 154	Principles of Hospitality Management	3
HRI 158	Sanitation and Safety	3
HRI 159	Intro. to Hospitality Industry Computer Systems	4
HRI 206	International Cuisine	3
HRI 207	American Regional Cuisine	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 224	Recipe and Menu Management	3
HRI 251	Food and Beverage Cost Control	3
HRI 290	Coordinated Internship in Culinary Arts	3
ITE 115	Introduction to Computer Applications and Concepts	3
MTH 120	Introduction to Math	3
SDV 101	Orientation to Culinary Arts	1
E[1]	Humanities/Fine Arts	3
E[2]	Social Science	6
Total Minimum Credits for Degree		**68**

[1] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities/Fine Arts Courses" on page 50.

[2] Social Science electives must be selected from the "Approved List of Transfer courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

Program notes: Students who earn a final grade lower than "C" in any HRI course must obtain permission from their advisor to continue the major in Culinary Arts. Students will normally be required to repeat courses in their major when grades lower than "C" are earned. Exceptions must be approved in writing by the program head.

Suggested Course Sequence

Fall	Spring
HRI 106	HRI 128
HRI 154	HRI 134
HRI 158	HRI 145
MTH 120	HRI 220
SDV 101	HRI 251
Social Science Elective	Social Science Elective
Fall	**Spring**
ENG 111	HRI 159
HRI 119	HRI 206
HRI 207	HRI 224
HRI 218	HRI 290
HRI 219	Humanities/Fine Arts Elective
ITE 115	

Dental Hygiene – Associate of Applied Science Degree (118)

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

Note: Individuals who have a felony or misdemeanor conviction may not be allowed to take the licensing exam. This decision is made by the Virginia Board of Dentistry. For questions regarding this issue, call Virginia Board of Dentistry (804) 662-9906.

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

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

- Dental offices and dental clinics
- Federal, state, and local health departments
- Hospitals and nursing homes/home health organizations
- School districts or departments of education
- Educational programs for dental, dental hygiene, and dental assisting students
- Correctional facilities
- Private and public facilities for pediatric, geriatric, and other individuals/groups with special needs
- Health maintenance organizations/ managed care organizations

Curriculum admissions standards Applicants to the Dental Hygiene program must have completed the following:

1. One unit each of high school or college biology and chemistry;
2. Algebra II or college equivalent.

A grade of "C" or better is necessary in required high school/college units of math and science.

Prerequisites must be completed prior to fall 2008.

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

Applicants who are currently enrolled in high school must submit SAT or ACT scores. Priority consideration will be given to applicants with a combined (total) score of 900 on the SAT or a composite score of 18 or above on the ACT. All qualified applicants must take the HOBET Test.

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

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

- Application to the College;
- Dental Hygiene Program Application;
- Official transcripts of all high school and colleges (if you have attended a community college in Virginia, these transcripts are not required);
- Official record showing completion of GED, SAT/ACT scores (if applicable as noted above);
- Two letters of recommendation from employers/former teachers using the format provided by VWCC.

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

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

VWCC policy on infectious disease status Applicants who believe they are at risk of contracting an infectious disease should seek testing and counseling prior to making application to the dental hygiene program. Students engaged in patient care activities are encouraged to know their HIV and HBV status. Applicants who are HIV or HBV positive may wish to reconsider their career goals. They must consider:

1. The possibility they may become disabled during their dental education or early in their career;
2. The infectious hazards that certain aspects of dental practice may pose;

Dental Hygiene, continued – Associate of Applied Science Degree (118)

3. The possibility of barriers to training in certain invasive clinical activities that may be imposed while in dental hygiene school because of possible hazards to patients;
4. The cost of dental education given personal health and career uncertainties.

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

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

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

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

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

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

Student responsibilities after acceptance Into the program

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

Dental Hygiene, continued – Associate of Applied Science Degree (118)

Policy for academic retention Continuation in the program: Satisfactory progress is demonstrated by achieving a grade of "C" or better in required dental hygiene and natural science courses. Students must satisfactorily complete BIO 141, BIO 142, and NAS 185 with a grade of "C" or above before progressing to the second year of the program. Students must complete required dental hygiene courses in sequence. Should a student receive a grade of "D" in any dental hygiene didactic course, didactic component of a clinical or laboratory course, or the laboratory component of a preclinical or didactic course, the student will be dropped from the program and must reapply for admission. Should a student receive a grade of "D" in the clinical component of DNH 142, 190, 244, or 245 due to failure to meet minimum clinical requirements for the semester, the student may progress to the next semester of the program with faculty approval, and will have additional patient requirements for graduation added. Two consecutive "D" grades in these clinical courses may result in the student being dropped from the program.

Readmission Readmission to the program will be based upon academic performance and adherence to program policies regarding attendance and professionalism, and will be contingent upon available laboratory/clinical space. Readmission is not guaranteed. Students who have been dropped must submit a written application for readmission to the Program Head no later than January 1 for the following fall semester, no later than April 1 for the following spring semester, and no later than August 1 for the following summer session. The Program Head will present the readmission request to the faculty for consideration. Students applying for readmission will be notified of their admission status in writing.

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

Curriculum and Other Requirements

		Credits
BIO 141-142	Human Anatomy and Physiology I-II	8
DNH 111	Oral Anatomy	2
DNH 115	Histology/Head and Neck Anatomy	3
DNH 120	Management of Emergencies	2
DNH 130	Oral Radiography for the Dental Hygienist	2
DNH 141-142	Dental Hygiene I-II	10
DNH 145	General and Oral Pathology	2
DNH 146	Periodontics for the Dental Hygienist	2
DNH 150[1]	Nutrition	2
DNH 190	Coordinated Practice	3
DNH 214[2]	Practical Materials for Dental Hygiene	2
DNH 216	Pharmacology	2
DNH 226-227[2]	Public Health Dental Hygiene I-II	3
DNH 230	Office Practice and Ethics	1
DNH 244-245	Dental Hygiene IV-V	10
ENG 111	College Composition I	3
ITE 102	Computers and Information Systems	1
NAS 185	Microbiology	4
PSY 230	Developmental Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100[3]	Principles of Public Speaking	3
Elective[4]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**72**

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

[2] Includes instruction in fundamental mathematical skills.

[3] SPD 105 may be substituted.

[4] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

Fall–First Year	Spring–First Year	Summer
BIO 141	DNH 142	BIO 142
DNH 111	DNH 145	DNH 130
DNH 115	DNH 146	DNH 150
DNH 120	DNH 216	DNH 190
DNH 141	ENG 111	
SDV 100 or SDV 108	NAS 185	
Fall–Second Year	**Spring–Second Year**	
DNH 214	DNH 227	
DNH 226	DNH 230	
DNH 244	DNH 245	
PSY 230	ITE 102	
	Humanities/Fine Arts Elective	
	SPD 100	

*Support courses (non-DNH courses) may be taken prior to entry.

Note: BIO 141, BIO 142, and NAS 185 must be repeated of they were completed more than five years prior to the date of admission into the program.

Education pays

Dental Hygiene...

U.S. average starting salary: $36,890[1]

Virginia average starting salary: $40,900[2]

Virginia median salary: $71,300[2]

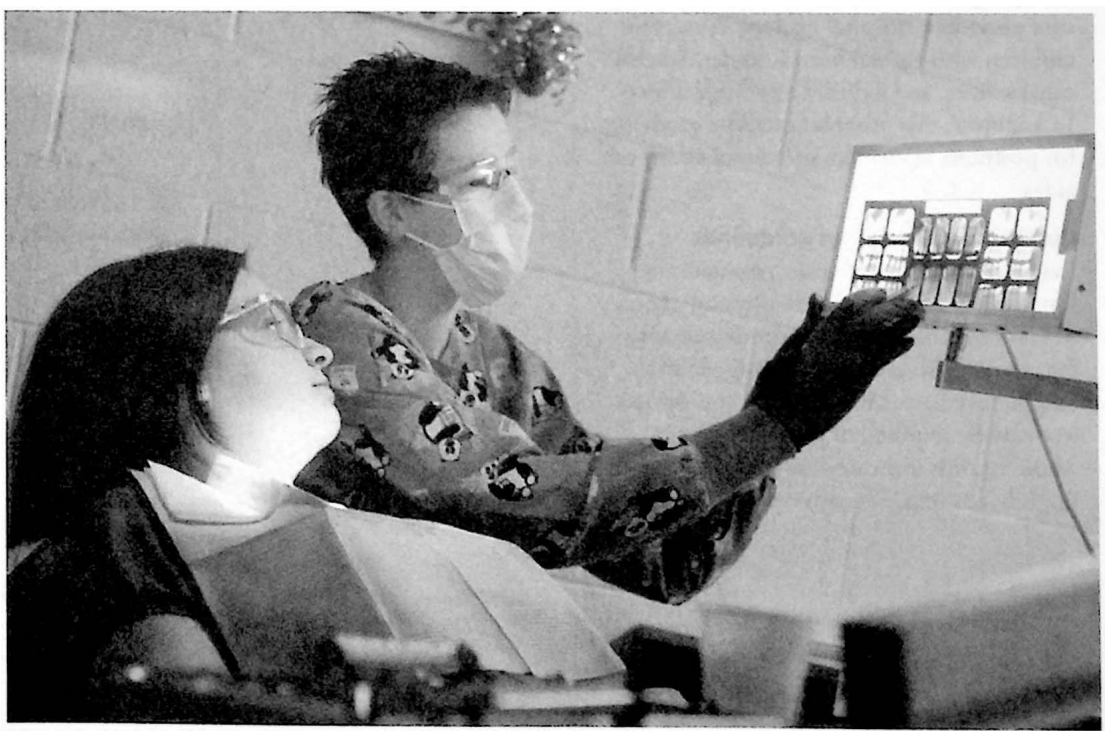
Work schedule flexibility is a distinctive feature of this profession[3]

Ranks among the fastest-growing occupations (anticipated increase in demand of 27% or greater from 2004 to 2014)[3]

[1] Source: American Association of Community Colleges, *Hot Programs at Community Colleges 2004*

[2] Source: America's Career InfoNet>Occupation Profile>Dental Hygiene>Virginia (2005)

[3] Source: U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook*



Early Childhood Development

Associate of Applied Science Degree (636)

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 proposed by the professional child development community: ability to set up a safe and healthy environment; skills to advance the physical and intellectual competence of young children and to build positive self concepts and individual strengths; ability to organize and sustain positive functioning of children and adults in a group learning environment; coordinate home/out-of-home child rearing practices and expectations; and carry out the supplementary responsibilities related to programs for children. In addition, the student is prepared to transfer to a four-year institution in Early Childhood Education and/or Child Development. Students who are interested in working with special needs children should consult with the Early Childhood Development faculty.

Occupational objectives Positions in independent child care centers and kindergartens, family day care homes, nursery schools, foster-care providers, hospital centers, centers for children with special needs, residential child care facilities, and industry associated centers. In addition, this program qualifies graduates for positions as elementary school classroom aides.

Curriculum admission guidelines
Evidence that the applicant possesses the intellectual, emotional, and physical capacities and the interest and aptitude necessary for relating successfully to young children. Satisfactory performance on an appropriate test may be required of those applicants whose records indicate academic weakness in English, reading, or mathematics.

Curriculum and Other Requirements

		Credits
CHD 121	Childhood Educational Development I	3
CHD 122	Childhood Educational Development II	3
CHD 125	Creative Activities for Children	3
CHD 126	Methods and Materials for Developing Science and Mathematical Concepts in Young Children	3
CHD 165[1]	Observation & Participation in Early Childhood Settings	3
CHD 166	Infant and Toddler Programs (or CHD 118)	3
CHD 205	Guiding the Behavior of Young Children	3
CHD 210	Introduction to Exceptional Children	3
CHD 216	Early Childhood Programs, School, and Social Change	3
CHD 265[2]	Observation and Participation in Early Childhood Settings	3
CHD 270	Administration of Early Childhood Educational Programs	3
ENG 111-112[3]	College Composition I-II	6
HLT 106	First Aid and Safety	2
HLT 135	Child Health and Nutrition	3
ITE 115	Intro Computer Applications and Concepts	3
MTH 120	Introduction to Mathematics (or MTH 151)	3
PSY 120	Human Relations	3
PSY 235	Child Psychology	3
SOC 215	Sociology of the Family	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[4]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**66**

[1] May be taken only after completing CHD 121, CHD 122 or with departmental approval.

[2] May be taken only after completing CHD 121, CHD 122, CHD 165 or with departmental approval.

[3] Students planning to transfer should take English 111-112.

[4] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Early Childhood Development, continued

Associate of Applied Science Degree (636)

Curriculum admission guidelines, cont. High school or equivalent developmental college course prerequisites include Algebra I, Algebra II and Geometry for students planning on working toward a baccalaureate degree at a four-year institution. (Students who plan to transfer to a four-year college are urged to consult the Early Childhood Development faculty members for electives and additional information.)

Admission to Internship Admission to CHD 165 is selective and must be approved by the program head. Eligibility is based on the following criteria: a 2.0 grade point average, faculty recommendations, completion of course prerequisites (CHD 121, CHD 122), documentation of a negative tuberculosis screening, and any relevant internship site requirements. Successful completion of CHD 165 is required to enroll in CHD 265. The deadline for applications will be May 1 of each year. If May 1 falls on a weekend, the deadline will be the next business day. Information on the requirements for this process is available in the Social Sciences division office and from the program head. Students not accepted into the program will have the option to reapply the following year.

New students (unless they are exempted by Advanced Placement) should take CHD 121 in the fall and CHD 122 in the spring.

Advanced placement Students who have completed a two- or three-year child care/ early childhood curriculum in an area high school may be awarded credit for CHD 122 and CHD 265 with certain conditions, including that the student can submit proper documentation.

Curriculum completion guidelines Students who receive a final grade lower than "C" in any of the courses in the Early Childhood Development sequence must be approved by the program faculty to continue the major in Early Childhood Development prior to repeating the course. Each student is responsible for transportation to and from field sites used for laboratory experience.

Suggested Course Sequence

Fall
CHD 121 (fall only)
CHD 125 (fall only)
CHD 210
ENG 111
PSY 235
SDV 100 or SDV 108

Spring
CHD 122
CHD 166 or CHD 118
CHD 216 (spring only)
HLT 135
ENG 112 or ENG 102
PSY 120

Fall
CHD 165 (fall only)
CHD 270 (fall only)
HLT 106
MTH 120 or MTH 151
SPD 100
Humanities/Fine Arts Electives

Spring
CHD 126
CHD 205 (spring only)
CHD 265 (spring only)
ITE 115
SOC 215 (spring only)

Electrical Wiring – Career Studies Certificate (056)

Purpose This Career Studies Certificate in Electrical Wiring is designed to meet the 240 clock hours of formal training necessary for certification as a Journeyman Electrician. In addition to the 240 clock hours of formal instruction, four years of practical experience are required before one can take the Journeyman Exam. This program will give the student the classroom knowledge needed to enter the electrical construction and maintenance field as a helper or apprentice.

Occupational objectives: Plant electrician, electrician, estimator

Curriculum and Other Requirements

		Credits
BLD 111	Blueprint Reading and the Building Code	3
ELE 110	Home Electric Power	3
ELE 133-134[1]	Practical Electricity I-II	6
ELE 138	National Electrical Code	2
Total Minimum Credits for Certificate		**14**

[1] Prerequisite for ELE 134 is ELE 133.

Suggested Course Sequence

Fall	Spring	Summer
BLD 111	ELE 110	ELE 138
ELE 133	ELE 134	

Electromechanic al Technology

Career Studies Certificate (096)

Purpose This Career Studies Certificate in Electromechanical Technology combines the concepts and practices of mechanical and electrical processes in order to manipulate motorized, hydraulic and pneumatic machines to perform complex automated functions in an industrial or manufacturing setting for an entry-level position.

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

Curriculum admission guidelines Proficiency in high school English and mathematics (one unit of Algebra).

Curriculum and Other Requirements

		Credits
ELE 133-134	Practical Electricity I-II	6
ETR 123	Electronic Applications I	1
ETR 141	Electronics I	3
ITE 115	Introduction to Computer Applications and Concepts	3
MEC 162	Applied Hydraulics and Pneumatics	3
Total Minimum Credits for Certificate		**16**

Suggested Course Sequence

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

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

Emergency Medical Services –Basic Technician

Career Studies Certificate (089)

Purpose The certificate program in Emergency Medical Services is designed to prepare students for a career as a Basic Technician.

Occupational Objective Employment opportunities include positions with ambulatory services, first responders or basic rescue providers.

Admissions Requirements Meet the general College curricular admission requirements as well as the requirements stipulated by the Virginia Office of EMS.

Applicants interested in admission to the program must meet the above admissions requirements and complete the following process by June 1:

1. Submit a College admission application.
2. Submit an application to the program (separate document) with required attachments.
3. Take the COMPASS or ASSET placement test (or submit SAT or ACT scores).
4. Have transcripts of previous college courses sent to the College. A score of 61 on the COMPASS or comparable score on the ASSET, SAT, or ACT is required for first round selection. Should openings still be available, persons who apply or meet requirements after May 10, or score lower than cut score on the reading exam will be considered.

Student Enrollment Requirements The enrolled student or certification candidate must comply with the following:

1. Be proficient in reading, writing and speaking the English language in order to clearly communicate with a patient, family or bystander to determine a chief complaint, nature of illness, mechanism of injury or to assess signs and symptoms.
2. Be a minimum of 16 years of age at the beginning date of the certification program. If less than 18 years of age, he or she shall provide the course coordinator with a completed parental permission form with the signature of a parent or guardian verifying approval for enrollment in the course.
3. Have no physical or mental impairment that would render him or her unable to perform all practical skills required for that level of certification including the ability to function and communicate independently and perform appropriate patient care, physical assessments and treatments without the need for an assistant.
4. Hold current certification in an approved course in cardiopulmonary resuscitation (CPR) at the beginning date of the certification program. This certification shall also be current at the time of state testing.
5. May not have been convicted of or found guilty of any crime, offense or regulatory violation, or participated in any other prohibited conduct identified in these regulations.
6. If in a bridge certification program, he or she shall hold current Virginia certification at the EMS first responder level.
7. Meet other requirements for course enrollment as set by the regional EMS council or local EMS resource, the PCD or the course coordinator, approved by the Office of EMS.

Essential Program Functions The Emergency Medical Technician must demonstrate competency in handling emergencies utilizing basic life support equipment and skills in accordance with the objectives in the U.S. Department of Transportation National Standard Curriculum for EMT to include having the ability to:

- Verbally communicate in person, via telephone and telecommunications using the English language;
- Hear spoken information from co-workers, patients, physicians and dispatchers and sounds common to the emergency scene;
- Lift, carry and balance a minimum of 125 pounds equally distributed (250 pounds with assistance) a height of 33 inches, a distance of 10 feet;
- Read and comprehend written materials under stressful conditions;
- Document, physically in writing, patient information in prescribed format;
- Demonstrate manual dexterity and fine motor skills, with ability to perform all tasks related to quality patient care in a safe manner;
- Bend, stoop, crawl and walk on uneven surfaces;
- Meet minimum vision requirements to operate a motor vehicle within the state.

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

Clinical and Behavioral Requirements Selected and supervised student experience is required by the program and will be accomplished at selected regional health care facilities. The student is responsible for transportation to these facilities, as well as to any scheduled field trips. Program preceptors will observe and evaluate the student's suitability for the profession. If the student does not exhibit those documented behaviors required of the EMS professional, the student may be asked to withdraw from the program.

Emergency Medical Services – Basic Technician, continued

Career Studies Certificate (089)

Student Responsibilities After Acceptance into the Program Applicants accepted to the program are required to submit a health certificate signed by a licensed physician, physician's assistant or RNP and other health related documentation as required by the program. This should include but is not limited to documentation of measles, mumps, Rubella (MMR) and chicken pox exposure or inoculations; documentation of Hepatitis B inoculation; Tuberculosis testing; and overall general health of the applicant. Drug and alcohol screening is required prior to rotating through certain clinical sites. Positive screenings will jeopardize continuation in the program. Costs of the tests are the responsibility of the student.

The purchase of items such as uniforms, liability insurance and other accessories is the financial responsibility of the individual student. Students who elect to take support courses recommended by the Program Director prior to formal acceptance into the program will find this activity to be advantageous in subsequent course scheduling.

Retention Policy: Students must make a "C" or better in all program core courses-EMS 112, 113, and 120. Any student receiving a grade less than "C" will be placed on programmatic academic probation.

That course shall be remediated once, with a written contract drafted containing the requirements of the remediation. Remediated courses must be completed with a final grade of "C" or better. Dismissal from the program shall result if the student does not meet the requirements of the contract.

Curriculum and Other Requirements		Credits
BIO 101	General Biology	4
EMS 112	Emergency Medical Technician – Basic I	3
EMS 113[1]	Emergency Medical Technician – Basic II	3
EMS 120[2]	Emergency Medical Technician – Basic Clinical	1
ENG 111	College Composition I	3
PSY 200	Principles of Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking (or SPD 105)	3
Total Minimum Credits for Certificate		**21**

[1] EMS 112 is a prerequisite for EMS 113.

[2] Students must sign an application to join one of the EMT organizations as a volunteer in order to enroll in EMS 120.

Suggested Course Sequence*

Fall	Spring
BIO 101	EMS 113
EMS 112	PSY 200
ENG 111	EMS 120
SDV 100 or SDV 108	

Engineering – Associate of Science Degree (831)

Purpose Engineers are the planners and designers of the technological systems that are the backbone of our modern society. They apply principles of science and mathematics to meet the needs or solve the problems of humankind. These problems typically are multifaceted and involve the interplay of technological, economic, environmental, sociological, and political components. For this reason, the engineer requires a background in the humanities and Social Sciences as well as in mathematics and natural sciences.

The Associate of Science degree program in Engineering is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree. The following engineering fields are supported by this program: aerospace and ocean, biological systems, chemical, civil and environmental, electrical and computer, engineering science and mechanics, industrial and systems engineering, material science, mechanical, mining and minerals.

In order to prepare for junior class standing at a four-year college or university, the student usually must complete a program at Virginia Western that is comparable in length and course content to the first two years of the program at the four-year institution. Students are urged to acquaint themselves with the requirements of the department in the college or university to which transfer is contemplated and also to consult with the counseling office of Virginia Western in planning their program and selecting electives.

Curriculum admission guidelines Four units English, four units mathematics (two units Algebra, one unit Geometry, and one unit advanced math or Trigonometry); one unit Laboratory Science; and one unit Social Studies. Developmental courses may be recommended for students with deficiencies in English and mathematics.

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

Curriculum and Other Requirements

		Credits
CHM 111[5]	College Chemistry I	4
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
ENGeld 1-112	College Composition I-II	6
HLT/PED[1]	Health or Physical Education	2
MTH 175-176	Calculus of One Variable I-II	6
MTH 177	Introductory Linear Algebra	2
MTH 178	Topics in Analytic Geometry	2
MTH 277	Vector Calculus	4
MTH 291	Differential Equations	3
PHY 241-242	University Physics I-II	8
SDV 101	Orientation to Engineering and Engineering Technology	1
SPD 100	Principles of Public Speaking	3
E[4]	Engineering/Science Elective	6-8
E[3]	Humanities/Fine Arts Elective	3
E[2]	Social Science Elective	6e
Total Minimum Credits for Degree		**67–69**

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

[2] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

[3] Students should work with their course advisors to select a Humanities/Fine Arts elective that will be applicable at the senior institution's baccalaureate program in which they wish to transfer. One three-credit humanities elective is required; however, the completion of a sequence would ensure transferability. Recommended electives: HUM 201-202, ENG 241-242, and ENG 243-244. Additional transfer electives may be chosen from the list on page 50. However, students should consult with an advisor before making any selections.

[4] The following are suggested Engineering/Science electives for Engineering majors: Mechanical Engineering: EGR 245-246, Civil Engineering: EGR 206/246, Electrical Engineering: EGR 206/251-255, MTH 285, or MTH 287.

[5] Chemical engineering majors should take CHM 112.

Suggested Course Sequence

Fall	Spring
CHM 111	EGR 120
EGR 124	EGR 126
ENG 111	EGR 140
MTH 175	ENG 112
MTH 177	MTH 176
SDV 101	MTH 178
HLT/PED	

Fall	Spring
MTH277	MTH 291
PHY 241	PHY 242
Engineering Science Elective	SPD 100
Humanities/Fine Arts Elective	Engineering Science Elective
Social Science Elective	Social Science Elective
HTL/PED	

Firefighting and Prevention – Career Studies Certificate (051)

Occupational objectives Training for positions in fire prevention and suppression, fire protection engineering, safety engineering, insurance inspection and investigation, industrial safety, and building inspection.

Curriculum and Other Requirements		Credits
EMS 112-113	Emergency Medical Technician I-II	6
ENG 111	College Composition I	3
FST 100	Principles of Emergency Services	3
FST 111	Fundamentals of Hazardous Materials	3
FST 115	Fire Prevention	3
FST 135	Fire Instructor I	3
ITE 115	Intro Computer Applications and Concepts	3
PSY 200	Principles of Psychology	3
Total Minimum Credits for Certificate		**27**

Suggested Course Sequence

Fall	Spring
EMS 112	EMS 113
FST 100	FST 115
FST 111	ITE 115
Fall	
ENG 111	
FST 135	
PSY 200	

General Education – Certificate (###)

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.

Curriculum admission guidelines

Four units of English; Algebra I, Geometry, and Algebra II; one unit of laboratory science; and one unit of social science. The courses in the General Education curriculum assume that students have college-level skills in reading, writing, and mathematics. Developmental courses are available and are recommended for students with deficiencies in these areas.

Curriculum and Other Requirements

		Credits
ENG 111-112[4]	College Composition I-II	6
HIS 121-122[4, 5]	U. S. History I (or HIS 101)	6
HLT/PED[1,4]	Health or Physical Education	2
MTH 151[4, 5]	Mathematics for the Liberal Arts I (or MTH 163)	3
SDV 100[4]	College Success Skills	1
SPD 100[4]	Principles of Public Speaking	3
E[2,4,5]	Humanities/Fine Arts Elective	3
E[4,5]	Laboratory Science Sequence	8
Total Minimum Credits for Certificate		**32**

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

[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

[3] A two-semester sequence selected from BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202 must be complete.

[4] Meets VCCS Core Competency Requirements in the following areas:
Communication (ENG 111, ENG 112, SPD 100)
Critical Thinking (ENG 111, ENG 112, Laboratory Science, MTH 151, SPD 100)
Cultural and Social Understanding (HIS 121, HIS 122)
Information Literacy (ENG 111, ENG 112, SPD 100)
Personal Development (SDV 108, HLT/PED)
Quantitative Reasoning (MTH 151)
Scientific Reasoning (Laboratory Science)

5 Meets SACS General Education Requirements of 15 credit hours, at least one course in each of the three following areas:
Humanities/Fine Arts elective
Social/Behavioral Sciences (HIS 121, HIS 122)
Math/Natural Sciences (MTH 151 & Laboratory Science electives

Suggested Course Sequence

Fall
ENG 111
HIS 121 or HIS 101
HLT/PED
MTH 151 or MTH 163
SDV 100
Laboratory Science Elective

Spring
ENG 112
HIS 122 or HIS 102
Humanities/Fine Arts Elective
Laboratory Science Elective

General Studies – Associate of Science Degree (699)

Purpose The curriculum is specifically designed for students who want to transfer to a four-year college or university. For students who are uncertain about their vocational or educational goals, this curriculum offers sufficient flexibility so that students may take courses that are accepted in most four-year colleges and universities in a wide number of baccalaureate degree programs. It also provides greater opportunity than that offered in other college-transfer programs for the student to take courses that emphasize areas of academic strength and interest. Students are urged to acquaint themselves with the requirements of the major department in the college or university to which transfer is contemplated and further to consult with their faculty advisors or counselors at Virginia Western in planning their programs and selecting their electives. In order to prepare for junior-class standing at a four-year college or university, the student usually must complete a program of study at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

Curriculum admission guidelines Four units of English; Algebra I, Algebra II, and Geometry; one unit of Laboratory Science; and one unit of Social Science. The courses in the General Studies curriculum assume that students have college-level skills in Reading, Writing, and Mathematics. Developmental courses are available and are recommended for students with deficiencies in these areas.

Curriculum and Other Requirements

		Credits
ENG 111-112	College Composition I-II	6
ENG 241-242[5]	Survey of American Literature I-II or (or ENG 243-244)	6
HIS 101-102[6]	History of Western Civilization I-II (or HIS 121-122)	6
HLT/PED[8]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 151[2]	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152[2]	Mathematics for the Liberal Arts II (or MTH 157 or MTH 271)	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking (or SPD 105)	3
E[1]	Social Science Electives	6
E[3]	Laboratory Science Sequence	8
E[4]	Transfer Electives	9
E[7]	Humanities/Fine Arts Electives	6
Total Minimum Credits for Degree		**62**

[1] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at Virginia Western that will satisfy the Social Science requirements at the four year institution.

[2] At least one semester of math must be completed for the degree. If only one semester of math is taken, an elective must be selected from the "Approved List of Transfer Courses" on page 50. The completion of a two-semester sequence of MTH 151-152 or MTH 163-271 is recommended for transfer to most four-year colleges. Radford University no longer accepts the MTH 151-152 sequence. They require either MTH 151 and MTH 157 or MTH 163 and MTH 157. Students are urged to check the mathematics requirement of the four-year college to which they plan to transfer to determine the proper mathematics courses to be taken at the community college.

[3] A two-semester sequence selected from BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202 must be completed.

[4] Electives must be selected from the "Approved List of Transfer Courses" on page 50. A two-semester sequence of the same course is recommended for transfer to most four-year institutions.

[5] A two-semester sequence of ENG 241-242 or ENG 243-244 is recommended for transfer to most four-year institutions.

[6] A two-semester sequence of HIS 101-102 or HIS 121-122 must be completed.

[7] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50. A two-semester sequence of the same course is recommended for transfer to most four-year institutions.

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

Suggested Course Sequence

Fall
ENG 111
ITE 115
MTH 151 or MTH 163
SDV 100
Social Science Elective
Laboratory Science Elective

Spring
ENG 112
MTH 152 or MTH 157 or MTH 271
Social Science Elective
Laboratory Science Elective
Transfer Elective

Fall
ENG 241 or ENG 243
HIS 101 or HIS 121
SPD 100 or SPD 105
Humanities/Fine Arts Elective
Transfer Elective

Spring
ENG 242 or ENG 244
HIS 102 or HIS 122
HLT/PED
Humanities/Fine Arts Elective
Transfer Elective

Geographical Information Systems – Certificate (719)

Purpose This program is designed to prepare students for entry-level positions in technologies using Geographic Information Systems (GIS) or to expand the knowledge and skills of individuals presently employed in these fields. The use of current ArcGIS® software is emphasized along with exposure to AutoCAD®. This program also provides an excellent foundation for continued study of GIS at the university and four year college level.

Occupational objectives GIS technician

Curriculum admissions guidelines Proficiency in high school English and three units of mathematics (one unit of Algebra). Developmental courses may be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements

		Credits
DRF 201-202[1]	Computer Aided Drafting and Design I-II	6
EGR 216	Computer Methods in Engineering and Technology	3
ENG 111	College Composition I	3
GEO 200	Introduction to Physical Geography	3
GIS 200-201	Geographical Information Systems I-II	8
GIS 205	GIS 3-Dimensional Analysis	4
GIS 210	Understanding Geographic Data	4
SDV 101	Orientation to Engineering and Engineering Technology	1
E[2]	Mathematics Electives	3
Total Minimum Credits for Certificate		**35**

[1] Students may be awarded credit for DRF 201 based on articulation agreements with several local high schools.

[2] Use MTH 115, MTH 120, MTH 163, or MTH 166. See advisor for limitations.

Suggested Course Sequence

Fall	Spring
EGR 216	DRF 202
DRF 201	GEO 200
SDV 101	ENG 111
Mathematics Elective	

Fall	Spring
GIS 200	GIS 201
GIS 210	GIS 205

Geographical Information Systems: Career Exploration

Career Studies Certificate (093)

Purpose This program is designed to prepare students for entry-level positions in technologies using Geographic Information Systems (GIS). The use of current ArcGIS® software is emphasized along with exposure to AutoCAD®. This program also provides an excellent foundation for continued study of GIS.

Occupational objectives GIS operator

Curriculum admission guidelines
Proficiency in high school English and three units of mathematics (one unit of Algebra). Basic computer literacy is a requirement for admission. Developmental courses may be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements		Credits
DRF 201	Computer Aided Drafting and Design I	3
EGR 216	Computer Methods in Engineering and Engineering Technology	3
GEO 200	Introduction to Physical Geography	3
GIS 200	Geographical Information Systems I	3-4
Total Minimum Credits for Certificate		**12–13**

High School Sequence

* Students should complete Algebra I-II and Geometry.

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

Junior
DRF 201
EGR 216

Senior
GEO 200
GIS 200

Graduate Sequence

Summer
DRF 201

Spring
GEO 200

Fall
EGR 216 or ITE 115
GIS 200

Health Records Coding – Career Studies Certificate (083)

Purpose and occupational objective This program 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.

Graduates of the program are eligible to take national certifying examinations administered by the American Health Information Management Association or American Academy of Professional Coders to become certified professional coders.

Curriculum admission guidelines Students must meet the general requirements for admission to the college. Students with no coding background should take HIT 195 (Introduction to Coding) before committing to this program of study. **(AST 113 Keyboarding for Speed and Accuracy is strongly recommended as a co-requisite to AST 102 Keyboarding II).**

Essential functions To successfully complete each keyboarding class, the student must be able to type without watching his or her hands while meeting the minimum speed.

Curriculum and Other Requirements

		Credits
AST 102[1]	Keyboarding II	3
AST 243	Office Administration I	3
HIT 253[2]	Health Records Coding	4
HIT 254[3]	Advanced Coding and Reimbursements	4
HIT 290[4]	Coordinated Internship	3
HLT 143	Medical Terminology I	3
HLT 144[2]	Medical Terminology II	3
PSY 120	Human Relations	3
Elective[5]	Facilities Coding Elective	3
Total Credits for Certificate		**29**

[1]Prerequisite: AST 101 or 35 wpm on Keyboarding Proficiency Test. Co-requisite: AST113.

[2]Prerequisite(s): HLT 143. Students with no coding background must take HIT 195.

[3]Prerequisites: HIT 143, HLT 144, HLT 253.

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

[5]Students should see the Department Head for courses that meet this requirement.

Suggested Course Sequence

Fall	Spring
AST 102**	HLT 144
AST 243	HIT 253
HLT 143	PSY 120
Fall	**Spring**
HIT 254*	HIT 290
	Elective*

* Strongly recommended to sit for CPC exam after completing HIT 254.

** AST 113 Keyboarding for Speed and Accuracy is strongly recommended as a co-requisite.

Education pays

Health Records Coding...

Virginia average starting salary: $18,800[1]

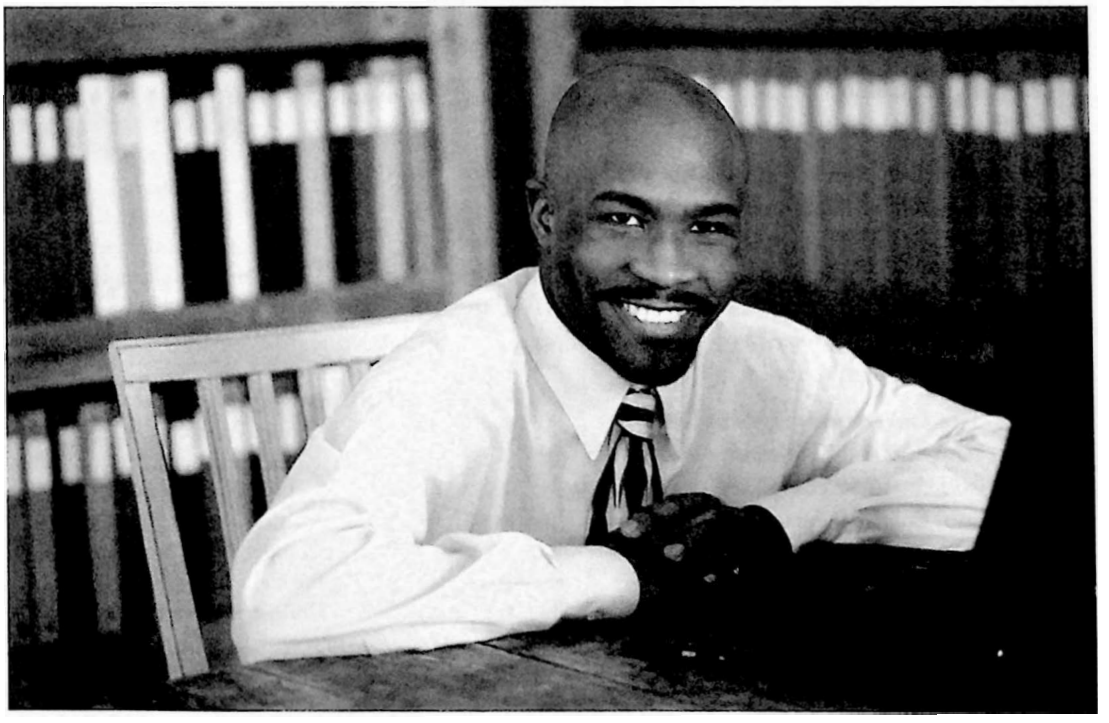
Virginia median salary: $28,300[1]

Fast-growing occupation (anticipated increase in demand of 27% or greater from 2004 to 2014)[2]

Job prospects very good; individuals with a strong background in medical coding will be in particularly high demand[2]

[1] Source: America's Career InfoNet>Occupation Profile>Medical Records and Health Information Technicians>Virginia (2005)

[2] Source: U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook*



Health Technology – Career Studies Certificate (059)

Purpose Each of the Health Technology Career Studies Certificates is designed to provide students with a course of study that will assist them to prepare for admission to and success in the Virginia Western Health Technology AAS or Certificate restricted admission program of their choice. Graduates will have completed prerequisites and support courses that are required in one of Virginia Western's Associate Degree programs in Dental Hygiene, Nursing, the VCCS Commonwealth Nursing Program, or Radiography; or the Certificate in Practical Nursing or Radiation Oncology. Students should be aware that completion of a career studies program **does not** guarantee admission to an Associate Degree or certificate program.

Students who wish to apply for admission to the distance education programs in either Veterinary Technology, offered by Blue Ridge Community College (BRCC); or Surgical Technology, offered by Piedmont Community (PVCC) **must** apply to either BRCC or PVCC for admission to these programs.

Students who wish to apply to the VCCS Commonwealth Nursing program must apply to:

Commonwealth Nursing Program Coordinator
VCCS Commonwealth Nursing Program
800 Charter Colony Parkway
Midlothian, VA 23114

Curriculum admission requirements All students, regardless of program interest, must hold either a high school diploma or GED. Science and mathematics prerequisites must be completed with a grade of "C" or better. Developmental courses may be taken to replace missing high school requirements.

For **Associate Degree programs** in Dental Hygiene, Nursing, and Commonwealth Nursing, students must complete four units of high school English, one unit each of high school or college Biology, and Chemistry. For the Radiography Associate Degree Program, students must complete four units of high school or college English, two units of high school or college Biology, Chemistry, or Physics.

Curriculum and Other Requirements

HEALTH TECHNOLOGY CORE FOR AAS DEGREE PROGRAM

(Dental Hygiene, Nursing, and Radiography)

		Credits
ENG 111	College Composition I	3
HLT 143[1]	Medical Terminology I	3
ITE 102[3,7]	Computer and Information Systems	1
PSY 230[4]	Developmental Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[5]	Humanities/Fine Arts Elective	3
Total		**17**

Pre-Dental Hygiene Option (01)

BIO 141	Human Anatomy and Physiology I	4
BIO 142	Human Anatomy and Physiology II	4
NAS 185	Microbiology	4
Total		**12**
Total Credits for Certificate		**29**

Pre-Nursing Option (02)

BIO 141	Human Anatomy and Physiology I	4
BIO 142	Human Anatomy and Physiology II	4
NAS 185	Microbiology	4
PSY 200	Introduction to Psychology	3
Total		**15**
Total Credits for Certificate		**32**

Pre-Radiography Option (03)

BIO 141[2]	Human Anatomy and Physiology I	4
BIO 142[2]	Human Anatomy and Physiology II	4
Total		**8**
Total Credits for Certificate		**25**

Pre-Practical Nursing Option (04)

BIO 101	General Biology I	4
ENG 111	College Composition I	3
HLT 106	First Aid and Safety	2
HLT 143	Medical Terminology I	3
ITE 102[3]	Computer and Information Systems	1
SPD 100	Principles of Public Speaking	3
SDV 100	College Success Skills (or SDV 108)	1
Total Credits for Certificate		**17**

Pre-Radiation Oncology Option (05)

BIO 141	Human Anatomy and Physiology I	4
BIO 142	Human Anatomy and Physiology II	4
ENG 111	College Composition I	3
HLT 143	Medical Terminology I	3
ITE 102[3]	Computer and Information Systems	1
MTH 163	Pre-Calculus	3
SDV 108	College Survival Skills (or SDV 100)	1
Total Credits for Certificate		**19**

Health Technology, continued – Career Studies Certificate (059)

In addition—

- for students interested in Dental Hygiene: Algebra I and Algebra II
- for students interested in Nursing: Algebra I
- for students interested in Commonwealth Nursing: Algebra I and students must be age 18 or older
- for students interested in Radiography: Algebra I, Algebra II, and Geometry.

For Certificate programs:

- for students interested in Practical Nursing: four units of high school English, one unit of high school or college Biology, Algebra I
- for Radiation Oncology: four units of high school English, two units of high school or college Biology, Chemistry, or Physics (preferred); Algebra I, Algebra II, and Geometry.

Curriculum and Other Requirements		Credits
DISTANCE LEARNING OPTIONS		
Pre-Surgical Technology Option (07)		
for the Certificate offered by Piedmont Virginia Community College (PVCC)		
ENG 111	College Composition I	3
HLT 143	Medical Terminology I	3
BIO 141-142	Anatomy and Physiology I-II	8
NAS 185	Microbiology	4
HLT 106	Safety and First Aid	2
SDV 100	College Success Skills (or SDV 108)	1
Total Credits for Certificate		**21**
Pre-Veterinary Technology Option (06)		
for the AAS degree offered by Blue Ridge Community College (BRCC)		
CHM 111	College Chemistry I	4
ENG 111	College Composition I	3
HLT/PED	Health or Physical Education	2
ITE 115	Intro to Computer Applications and Concepts	3
PSY 200	Introduction to Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
E[5]	Social Science Elective	3
	Humanities/Fine Arts Elective	3
Total Credits for Certificate		**22**
Pre-Commonwealth Nursing Option (08)		
BIO 141	Anatomy and Physiology I	4
ENG 111	College Composition I	3
ITE 115[6]	Introduction to Computer Applications	3
PSY 230	Developmental Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
Total		**14**
ENG 112	College Composition II	3
BIO 142	Anatomy and Physiology II	4
SOC 200	Principles of Sociology	3
E[5]	Humanities/Fine Arts Elective	3
Total		**13**
Total Credits for Certificate		**27**

Note: Students must successfully complete one Distance Learning or Hybrid course. One course must be successfully completed by either Distance Learning or Hybrid format.

[1] Highly recommended for all students, but Dental Hygiene and Nursing applicants may substitute a general elective.

[2] NAS 171 and an elective may be substituted for BIO 141 and BIO 142 for the Pre-Radiography curriculum only. NAS 171 is offered in fall semester only.

[3] If ITE 115 is taken, it may be substituted for ITE 102.

[4] Radiography students may select any Social Science elective from the "Approved List of Transfer Courses" on page 50; however, PSY 200 is the preferred choice for Radiography.

[5] Social science and humanities/Fine Arts Electives must be selected from the "Approved List of Transfer Courses" on page 50.

[6] A three-credit computer elective can be substituted for ITE 115.

[7] ITE 102 is not required for the Radiography program.

Horticulture Technology

Associate of Applied Science Degree (335)

Purpose The horticulture program is designed to prepare students for employment in the horticulture industry or a related field and to provide training for those who are currently working in the field and want to improve and upgrade their existing knowledge and skills. The major part of the curriculum is devoted to specialized horticulture courses and to the development of technical and communication skills necessary for a successful career. During the second year of the two-year program, the student has the option of specializing in either interior landscaping/floriculture or landscaping. Four short programs—floral design and indoor plant care, landscaping and outdoor plant care, plant propagation and production, and urban tree management—are available through Virginia Western's career studies certificate program for individuals who are not interested in completing the full two-year program.

Curriculum and Other Requirements

		Credits
Interior Landscaping/Floriculture Specialization (02)		
BUS 165	Small Business Management	3
ENG 111	College Composition I	3
HLT/PED[1]	Health or Physical Education	2
HRT 110	Principles of Horticulture	3
HRT 115	Plant Propagation	3
HRT 121	Greenhouse Crop Production I	3
HRT 127	Horticultural Botany	3
HRT 205	Soils	3
HRT 207	Plant Pest Management	3
HRT 236	Interior Landscaping	2
HRT 247	Indoor Plants	2
HRT 260	Introduction to Floral Design	3
HRT 265[2]	Professional Floral Design and Shop Management	3
HRT 267	Silk and Dried Flower Arranging	2
HRT 285	Management of a Horticulture Business	3
HRT 297	Cooperative Education (or HRT 296)	2
ITE 115	Intro Computer Applications and Concepts	3
MKT 100	Principles of Marketing (or MKT 110)	3
MTH 120	Introduction to Mathematics	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[3]	Social Science Elective	6
E	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**65**

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

[2] Prerequisite: HRT 260.

[3] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50.

Suggested Course Sequence

Fall	Spring
ENG 111	SPD 100
HLT/PED	HLT/PED
HRT 110 (fall only)	HRT 127 (spring only)
HRT 247 (fall only)	HRT 236 (spring only)
MTH 120	ITE 115
SDV 100 (or SDV 108)	Social Science Elective
Social Science Elective	

Fall	Spring
HRT 115 (fall only)	BUS 165
HRT 207 (fall only)	HRT 121 (spring only)
HRT 260 (fall only)	HRT 205 (spring only)
HRT 267 (fall only)	HRT 265 (spring only)
MKT 100 (or MKT 110)	HRT 285 (spring only)
Humanities/Fine Arts Elective	HRT 297 (or HRT 296)

Horticulture Technology, continued

Associate of Applied Science Degree (335)

Occupational objectives Manager or employee in a nursery or greenhouse; grounds maintenance operator or supervisor; floral designer or manager of a florist shop; and employee in a retail horticulture business or a related industry.

Cooperative education Students in this program will be provided an opportunity to obtain on-the-job training through cooperative arrangements between the College and prospective employers.

Curriculum admission guidelines Proficiency in high school English and one unit of high school Algebra. Deficiencies may be removed through developmental studies.

Transfer arrangements Specific details about transfer arrangements can be obtained from the horticulture department head.

Curriculum and Other Requirements

		Credits
Landscape Specialization (01)		
BUS 165	Small Business Management	3
ENG 111	College Composition I	3
HLT/PED[1]	Health or Physical Education	2
HRT 110	Principles of Horticulture	3
HRT 115	Plant Propagation	3
HRT 127	Horticultural Botany	3
HRT 201-202	Landscape Plant Materials I-II	6
HRT 205	Soils	3
HRT 207	Plant Pest Management	3
HRT 231	Planting Design I	3
HRT 232[2]	Planting Design II (or HRT 269)	3
HRT 275	Landscape Construction and Maintenance	3
HRT 285	Management of a Horticulture Business	3
HRT 297	Cooperative Education (or HRT 296)	2
ITE 115	Introduction to Computer Applications and Concepts	3
MKT 100	Principles of Marketing (or MKT 110)	3
MTH 120	Introduction to Mathematics	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[3]	Social Science Elective	6
E	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**65**

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

[2] Prerequisite: HRT 260.

[3] Social Science Electives must be selected from the "Approved List of Transfer Courses" on page 50.

Suggested Course Sequence

Fall	Spring
ENG 111	SPD 100
HLT/PED	HLT/PED
HRT 110 (fall only)	HRT 127 (spring only)
HRT 201 (fall only)	HRT 202 (spring only)
MTH 120	ITE 115
SDV 100 (or SDV 108)	Social Science Elective
Social Science Elective	

Fall	Spring
HRT 115 (fall only)	BUS 165
HRT 207 (fall only)	HRT 205 (spring only)
HRT 231 (fall only)	HRT 232 (or HRT 269) (spring only)
MKT 100 (or MKT 110)	HRT 275 (spring only)
Humanities/Fine Arts Elective	HRT 285 (spring only)
	HRT 297 (or HRT 296)

Horticulture: Floral Design and Indoor Plant Care – Career Studies Certificate (013)

Purpose This curriculum is designed to prepare students for entry-level positions in floral and indoor plant care businesses and to upgrade the skills of those currently employed in the industry. All of the courses offered in this program can be applied to the AAS degree in Horticulture Technology (Interior Landscaping/ Floriculture option).

Occupational objectives Floral designer, interior landscape technician.

Curriculum admission guidelines
Student must meet the general requirements for admission to the College.

Curriculum and Other Requirements

		Credits
HRT 207	Plant Pest Management	3
HRT 236	Interior Landscaping	2
HRT 247	Indoor Plants	2
HRT 260	Introduction to Floral Design	3
HRT 265[1]	Professional Floral Design and Shop Management	3
HRT 267	Silk and Dried Flower Arranging	2
E[2]	Horticultural Elective	3
Total Minimum Credits for Certificate		**18**

[1] Prerequisite: HRT 260

[2] To be selected with departmental approval

Suggested Course Sequence

Fall	Spring
HRT 207 (fall only)	HRT 236 (spring only)
HRT 247 (fall only)	HRT 265 (spring only)
HRT 260 (fall only)	Horticultural Elective
HRT 267 (fall only)	

Horticulture: Landscaping and Outdoor Plant Care –Career Studies Certificate (014)

Purpose This curriculum is designed to prepare students for entry-level positions in landscaping businesses and to upgrade the skills of those currently employed in the industry. All of the courses offered in this program can be applied to the AAS degree in Horticulture Technology (Landscaping option).

Occupational objectives Landscape designer, landscape technician.

Curriculum admission guidelines
Student must meet the general requirements for admission to the College.

Curriculum and Other Requirements

		Credits
HRT 201- 202	Landscape Plant Materials I-II	6
HRT 207	Plant Pest Management	3
HRT 231	Planting Design I	3
HRT 232[1]	Planting Design II (or HRT 269)	3
HRT 275	Landscape Construction and Maintenance	3
Total Minimum Credits for Certificate		**18**

[1] Prerequisite: HRT 231

Suggested Course Sequence

Fall	Spring
HRT 201 (fall only)	HRT 202 (spring only)
HRT 207 (fall only)	HRT 232 (or HRT 269) (spring only)
HRT 231 (fall only)	HRT 275 (spring only)

Horticulture: Plant Propagation and Production – Career Studies Certificate (010)

Purpose This curriculum is designed to prepare students for entry-level positions in greenhouse, nursery, and garden center businesses, and to upgrade the skills of those currently employed in the industry. All of the courses offered in this program can be applied to the AAS degree in Horticulture Technology (Interior Landscaping/Floriculture option).

Occupational objective Assistant grower, wholesale and retail salesperson, production technician.

Curriculum admission guidelines
Student must meet the general requirements for admission to the College.

Curriculum and Other Requirements

		Credits
HRT 115	Plant Propagation	3
HRT 121	Greenhouse Crop Production	3
HRT 205	Soils	3
HRT 207	Plant Pest Management	3
HRT 285	Management of a Horticulture Business	3
E[1]	Horticultural Elective	3
Total Minimum Credits for Certificate		**18**

[1] To be selected with departmental approval

Suggested Course Sequence

Fall	Spring
HRT 115 (fall only)	HRT 121 (spring only)
HRT 207 (fall only)	HRT 205 (spring only)
Horticultural Elective	HRT 285 (spring only)

Horticulture: Urban Tree Management

Career Studies Certificate (086)

Purpose This curriculum is designed to prepare students for employment in arborist-related businesses and to upgrade the skills of those currently employed in the industry. Emphasis will be placed on preparing students for the International Society of Arborists' Certification exams.

Occupational objective Certified arborist

Curriculum admission guidelines
Student must meet the general requirements for admission to the College.

Curriculum and Other Requirements

		Credits
HRT 127	Horticultural Botany	3
HRT 201	Landscape Plants	3
HRT 205	Soils	3
HRT 207	Plant Pest Management	3
HRT 259	Arboriculture	3
HRT 275	Landscape Construction and Maintenance	3
Total Minimum Credits for Certificate		**18**

Suggested Course Sequence

Fall	Spring
HRT 201 (fall only)	HRT 127 (spring only)
HRT 207 (fall only)	HRT 205 (spring only)
HRT 259 (fall only)	HRT 275 (spring only)

Human Services – Associate of Applied Science (480)

Purpose Human Services course work prepares students for entry-level positions in the helping fields or transfer to a bachelor degree program. Through courses and a field placement in agencies, students develop skills and knowledge in working with people with physical and psychiatric disabilities, adolescents, the aged, the substance abuser, and the child or adult in crisis. Faculty will arrange individual consultations with students to help them in career planning.

Radford University Bachelor Degree Program As a result of an articulation agreement with Radford University, any student who has completed the Associate of Applied Science (AAS) degree in Human Services will be granted admission to the Radford University Bachelor of Science (BS) degree in Social Work offered on the Virginia Western Community College campus. For more information, contact Mr. Richard Gaynor, Human Services Program Director, at (540) 857-7288.

Old Dominion University Bachelor Degree Program As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Human Services may earn a baccalaureate degree in Human Services on the Virginia Western Community College campus in Roanoke.

Occupational objectives Employment opportunities for graduates in Human Services include staff positions in hospitals, mental health clinics, group homes, training centers, and community service agencies. Graduates may transfer to a four-year college or university for bachelor degrees in fields such as social work, psychology, special education, gerontology, and human resources.

Curriculum and Other Requirements

		Credits
BIO 101-102[1]	General Biology I-II	8
ENG 111-112	College Composition I-II	6
HLT/PED[2]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MEN 100	Introduction to Mental Health	3
MEN 101-102	Mental Health Skill Training I-II	6
MEN 221-222[3]	Group Process I-II	6
MEN 225	Counseling Therapy	3
MEN 290[4]	Coordinated Internship	5
MTH 157[1]	Elementary Statistics	3
PSY 200	Principles of Psychology	3
PSY 215	Abnormal Psychology	3
PSY 220	Introduction to Behavior Modification	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[5]	Humanities/Fine Arts Elective	3
E[6]	Elective	3
E[7]	Elective	3
Total Minimum Credits for Degree		**67**

[1] Students planning to transfer to a four-year university other than Radford University should consult with their Human Services advisor for other appropriate transfer classes.

[2] Two credits of Health (HLT) or Physical Education (PED) are required of all students. It is recommended that students preparing for entry to Radford University complete HLT 110. Veterans will be awarded HLT/PED credit based on military service.

[3] Prerequisite: MEN 101-102 or departmental approval needed.

[4] Prerequisite: MEN 101 and departmental approval needed.

[5] Humanities/Fine Arts Elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

[6] Students enrolling at Radford University should select a sociology elective.

[7] Select one of the following: PSY 230, PSY 235, or PSY 236.

Human Services, continued – Associate of Applied Science (480)

Curriculum admission guidelines Algebra I, Algebra II and Geometry are prerequisites for the human services curriculum. Developmental courses may be recommended for students with deficiencies in English and mathematics.

Students entering the first fall semester of the human services curriculum should make every effort to take MEN 100, MEN 101, and PSY 220. All three are fall semester only classes; if they are missed, they cannot be taken again until the following fall.

Admission to internship Admission to MEN 290 (Coordinated Internship) is selective and must be approved by the internship coordinator. Eligibility is based on the following criteria: minimum GPA of 2.0, completion of course prerequisite (MEN 101), faculty recommendations, expected graduation date, and any relevant internship site requirements. Arrangements for the internship placement are made the semester prior to the one in which the student actually takes the class. Students wishing to take the classes in the fall semester must request an application from the internship coordinator during the first week of March. Those wishing to take it during the spring semester must request an application during the first week of October.

Suggested Course Sequence

Fall	Spring
ENG 111	ENG 112
MEN 100 (fall only)	MEN 102 (spring only)
MEN 101 (fall only)	MEN 225 (spring only)
PSY 200	MEN 290
PSY 220 (fall only)	PSY 215
SDV 100 or SDV 108	
Fall	**Spring**
BIO 101	BIO 102
HLT/PED	ITE 115
MEN 221 (fall only)	MEN 222 (spring only)
MTH 157	SPD 100
Humanities/Fine Arts Elective	Elective
Elective	

Information Systems Technology

Associate of Applied Science Degree (299)

Purpose This curriculum is designed to prepare individuals for entry-level positions or to upgrade the technical skills or expand the technical knowledge of existing employees.

Occupational objectives Entry level or advancement opportunities in a broad range of information technology positions. Typical job titles include network administrator, Web developer, application software developer, or database administrator.

Curriculum admission guidelines Minimum of two units of high school mathematics, one of which must be Algebra, or the equivalent, and proficiency in high school English. Proficiency in keyboarding skill required (high school or college keyboarding). If a student does not have basic skills in word processing, spreadsheets, and database, ITE 115 should be considered. Developmental courses may be recommended for students with deficiencies in English, mathematics, or keyboarding.

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

Curriculum and Other Requirements

		Credits
ACC 211	Principles of Accounting I	3
ACC 213	Principles of Accounting Lab I	1
ECO 201[1]	Principles of Macroeconomics	3
ECO 202	Principles of Microeconomics	3
ENG 111	College Composition I	3
ITD 110	Web Page Design I	3
ITD 136	Database Management Software	4
ITN 101[4]	Introduction to Network Concepts	4
ITN 170[5]	Linux Administration	3
ITN 261	Network Attacks, Computer Crime and Hacking	3
ITP 100[6]	Software Design	3
ITP 112[7]	Visual Basic .NET I or Java Programming I (or ITP 120)	4
ITP 212[7]	Visual Basic .Net II or Java Programming II (or ITP 220)	4
ITP 298	Capstone	3
MTH 141[9]	Business Mathematics (or MTH 175)	3
SDV 101	Orientation	1
SPD 105	Oral Communications	3
HLT/PED[2]	Health or Physical Education	2
E[8]	Information System Technology Electives	12
E[3]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**68**

[1] May substitute approved Social Science elective from approved list.

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

[3] Consult eligible electives from the "Approved List of Transfer Courses" in the catalog. See your academic advisor or counselor to choose the appropriate course(s).

[4] ITN 101 prepares students for the Network+ certification.

[5] ITN 171 Unix Administration may be substituted.

[6] Those with previous programming experience may substitute another IT class if approved by your academic advisor.

[7] Those in the Network and Database Administration career studies program should substitute ITN 114 Windows® XP Professional, ITN 115 Windows® Server 2003, and ITN 116 Windows® 2003 Infrastructure Management for these two classes. Those pursuing Microsoft® Certified Professional Developer must choose ITP 112 and ITP 244. See your academic advisor for details.

[8] Approved electives must be selected to complete one of the IST career studies programs. Choices include: Computer Graphics and Internet Programming, Microsoft® Certified Professional Developer, Network and Database Administration, and E-Commerce Computer Application Development. See catalog alphabetical listing for details of these programs. Any remaining credits can be chosen from any of the IT courses with the approval of your academic advisor.

[9] Students who elect to take MTH 175 must be advised that prerequisites must be completed prior to enrolling in MTH 175. The prerequisites for MTH 175 are four units of high school mathematics, including Algebra I, Algebra II, Geometry, and Trigonometry or equivalent and a placement recommendation for MTH 175.

Note: Students must have a strong foundation in microcomputer applications, including word processing, spreadsheet, database, Internet, e-mail, and Microsoft® Windows. This foundation can be obtained by completing ITE 115. If you feel that you do not need this class, see your academic advisor. In order to graduate with the associate's degree, you must meet the college's computer competency requirements. ITE 115 satisfies this requirement.

Information Systems Technology, continued

Associate of Applied Science Degree (299)

Curriculum and Other Requirements	Credits

Articulation Based on an articulation agreement with Radford University, completion of this degree will allow students to pursue a BS degree in a variety of specializations in the College of Information Systems and Technology at Radford, either on campus at Radford or distance learning in Roanoke. Students who desire to pursue a BS should take math classes through at least MTH 175 and choose the ITP 120/ITP 220 below. Students also need to choose either E-Commerce Computer Applications, Mobile Programming, or Computer Graphics and Internet Programming as their career studies choice.

Suggested Course Sequence

Fall	Spring
ECO 202	ECO 201
ENG 111	ITD 110
ITN 101	ITD 136 (or MTH 175)
ITP 100	ITP 112 (or ITP 120)
MTH 141	IT Elective
SDV 101	

Fall	Spring
ACC 211	ITP 298
ACC 213	SPD 105
ITN 170	Humanities/Fine Arts Elective
ITN 261	IT Electives
ITP 212 or ITP 220	HLT/PED
IT Elective	

IT: Computer Graphics and Internet Programming – Career Studies Certificate (072)

Purpose This program assists the student in developing skills in computer graphics, Web page design, and Internet/intranet programming for either the first-time student or returning professional. Graduates will be qualified for jobs requiring skills in graphics software, Web page design software, languages, and databases. Students must decide whether they want to specialize on the Microsoft® .NET or Sun Java platform when they begin the program.

This Career Studies Certificate Program will help prepare the individual for CIW (Certified Internet Web professional) associate and site designer.

For students desiring to transfer to a four-year program, Java should be chosen. This choice will also prepare the individual for the Sun Certified Programmer and Sun Certified Developer certifications. For students choosing Visual Basic, this program prepares you for the Microsoft Technical Specialist and Professional Developer certifications

Curriculum admission guidelines The student should possess a proficiency in high school English, high school Algebra and Geometry, and computer keyboarding skills.

Curriculum and Other Requirements

		Credits
ITD 110	Web Page Design I	3
ITD 212 or ITD 210	Interactive Web Design (or Web Page Design II)	3
ITD 136	Database Management Software	4
ITP 100[1]	Software Design	3
ITP 112[2,3]	Visual Basic .Net I or Java Programming I (or ITP 120)	4
ITP 212[2,3]	Visual Basic .Net II or Java Programming II (or ITP 220)	4
ITP 225	Web Scripting Languages	4
ITP 244 or ITP 246[2,3]	ASP .Net Server-Side Programming or Server-side Java	4
Total Minimum Credits for Certificate		**29**

[1] Those with previous programming experience may substitute another IT class if approved by their academic advisor.

[2] Those preparing to transfer to Radford University on the articulation agreement must choose ITP 120, ITP 220, and ITP 246.

[3] Students must choose three semesters of programming in the same language. For Java choose ITP 120, ITP 220, and ITP 246. For VB.NET choose ITP 112, ITP 212, and ITP 244.

Suggested Course Sequence

Fall
ITD 110
ITD 136
ITP 100

Spring
ITD 212 or 210
ITP 112 or ITP 120

Fall
ITP 212 or ITP 220

Spring
ITP 225
ITP 244 or ITP 246

IT: E-Commerce Computer Application Development – Career Studies Certificate (073)

Purpose This program is designed to assist the student in developing skills in computer application development and integration in e-commerce solutions. Students will utilize state-of-the-art computer techniques to create both server-side and client-side e-commerce solutions. Students will learn how to capture and manage data utilizing industry standard databases such as Oracle 10i®, SQL Server 2005, and MySQL. A student needs to decide whether they want to specialize on the Microsoft® .NET or Sun Java platform when they begin the program. For students desiring to transfer to a four-year program, Java should be chosen. This choice will also prepare the individual for the Sun® Certified Programmer and Sun® Certified Developer certifications. For students choosing Visual Basic, this program prepares you for the Microsoft Certified Technical Specialist and Professional Developer certifications.

Recommended preparation The student should possess a proficiency in high school English, high school Algebra and Geometry, and computer keyboarding skills.

Curriculum and Other Requirements

		Credits
ITD 136	Database Management Software	4
ITD 220	E-Commerce Administration	3
ITE 160[1]	Introduction to E-Commerce or Database Performance Tuning (or ITD 258)	3
ITP 100[2]	Software Design	3
ITP 112[1]	Visual Basic .Net I or Java Programming I (or ITP 120)	4
ITP 212[1,3]	Visual Basic .Net II or Java Programming II (or ITP 220)	4
ITP 244[1,3]	ASP .Net Server-Side Programming (or ITP 246) or Server-Side Java Programming	4
ITP 298	Capstone	3
Total Minimum Credits for Certificate		**28**

[1] Students preparing to transfer to Radford University on the articulation agreement must choose ITD 258, ITP 120, ITP 220, and ITP 246.

[2] Students with previous programming experience may substitute another IT class if approved by their academic advisor.

[3] Students must choose three semesters of programming in the same language. Java choose ITP 120, ITP 220, and ITP 246. VB.NET choose ITP 112, ITP 212, and ITP 244.

Suggested Course Sequence

Fall
ITD 136
ITP 100

Spring
ITE 160 or ITD 258
ITP 112 or ITP 120

Fall
ITP 212 or ITP 220

Spring
ITD 220
ITP 244 or ITP 246
ITP 298

IT: Help Desk Technician – Career Studies Certificate (092)

Purpose This Career Studies Certificate Program is designed for help desk employment and offers instruction in managing and design of help desk support centers. Students will learn the basics of networking, word processing, spreadsheets, database, telephone skills, and customer service. This career studies does not directly feed into the IST associates degree program. This career studies will help prepare the individual for a MCDST (Microsoft® Certified Desktop Technician) certification.

Admission requirements General college curricular admission.

Curriculum and Other Requirements

		Credits
AST 113	Keyboarding for Speed and Accuracy	1
ITE 115	Introduction to Computer Applications and Concepts	3
ITE 180	Help Desk Support Skills	3
ITE 182	User Support/Help Desk Principles	3
ITN 101	Introduction to Network Concepts	4
ITN 170	Linux System Administration	3
Total Minimum Credits for Certificate		**17**

Suggested Course Sequence

Fall	Spring
AST 113	ITE 180
ITE 115	ITE 182
ITN 101	ITN 170

IT: Microsoft® Certified Professional Developer

Career Studies Certificate (Pending Approval)

Purpose The Microsoft® Certified Professional Developer (MCPD): Enterprise Application Developer certification prepares the student with the comprehensive skills that are required to build n-tier .NET-based solutions that target both the Web and rich-client applications. This career study program provides extensive expertise in the Microsoft® .NET applications.

Recommended preparation The student should be proficient in high school English, high school Algebra and Geometry, and computer keyboarding skills.

Curriculum and Other Requirements

		Credits
ITN 101	Introduction to Network Concepts	4
ITP 100	Software Design	3
ITP 112	Visual Basic .NET I	4
ITP 212	Visual Basic .NET II	4
ITP 215	XML Web Services	4
ITP 216	Analyzing Requirements for Microsoft® .NET Solution Architectures	4
ITP 244	ASP .NET – Server-Side Programming	4
Total Minimum Credits for Certificate		**27**

Suggested Course Sequence

Fall	Spring
ITN 101	ITP 112
ITP 100	
Fall	**Spring**
ITP 212	ITP 244
ITP 215	ITP 216

IT: Mobile Programming – Career Studies Certificate (044)

Purpose This Career Studies Certificate is for the student who wishes to learn how to develop software for the wireless industry to include but not limited to PDAs, cell phones, and other wireless devices. Courses will cover the development of mobile Web applications and data storage, gaming theory, and other applications specific to handheld devices.

Recommended preparation The student should be proficient in high school English, high school Algebra and Geometry, and computer keyboarding skills.

Curriculum and Other Requirements

		Credits
ITD 120	Design Concepts for Mobile Applications	3
ITD 238	Local and Remote Data Storage for Wireless Devices	3
ITN 120	Wireless Network Administration	3
ITP 100	Software Design	3
ITP 112	Visual Basic.NET	4
ITP 120	Java Programming	4
ITP 214	Windows® Mobile Development	3
ITP 224	Mobile Java ME	3
ITP 298	Capstone	3
Total Minimum Credits for Certificate		**29**

Suggested Course Sequence

Fall	Spring
ITD 120	ITP 112
ITN 120	ITP 120
ITP 100	
Fall	**Spring**
ITD 238	ITP 298
ITP 214	
ITP 224	

IT: Network and Database Administration

Career Studies Certificate (081)

Purpose The Network and Database Administration Career Studies Program provides an individual with a broad background in two critical administration areas: namely network and database. This program will prepare the individual for the CompTIA Network+ certification, the MCSA (Microsoft® Certified Systems Administrator) for Windows® Server 2003 and the MCTS (Microsoft® Certified Technical Specialist): SQL Server 2005, and the MCITP (Microsoft® Certified IT Professional): Database Developer credentials as well as providing a broad background in network and database concepts.

Recommended preparation The student should be proficient in high school English, high school Algebra and Geometry, and computer keyboarding skills.

Curriculum and Other Requirements

		Credits
ITD 136	Database Management Software	4
ITD 250	Database Architecture and Administration	3
ITD 258	Database Performance and Tuning	3
ITN 101	Introduction to Network Concepts	4
ITN 114	Windows® XP Professional	3
ITN 115	Windows® 2003 Server	3
ITN 116	Windows® 2003 Infrastructure Management	3
ITN 170 or ITN 171	Linux System Administration or Unix I	3
Total Minimum Credits for Certificate		**26**

Suggested Course Sequence

Fall	Spring
ITD 136	ITN 115
ITN 101	ITN 170 or ITN 171
ITN 114	
Fall	**Spring**
ITD 250	ITD 258
ITN 116	

IT: NetworkTechnician – Career Studies Certificate (045)

Purpose The Network Technician Career Studies Certificate program provides an individual with a broad background in maintaining computer resources in small to medium size organizations. Students will learn the basics of PC repair, networks, and current operating systems. Graduates will be qualified for jobs requiring skills in maintaining computers, networks, and servers in small to medium networking environments. This career studies will help prepare the individual for CompTIA A+, CompTIA Net+, CompTIA Linux+, and Microsoft® Certified Professional certifications.

Admission requirements General college curricular admission.

Curriculum and Other Requirements

		Credits
ETR 285	Fundamentals of Microcomputer Repair	4
ITN 101	Introduction to Network Concepts	4
ITN 114	Windows® XP Professional	3
ITN 115	Windows® Server 2003	3
ITN 170	Introduction to Linux	3
Total Minimum Credits for Certificate		**17**

Suggested Course Sequence

Fall	Spring
ETR 285	ITN 114
ITN 101	ITN 115
	ITN 170

IT: Web Scripting and Design

Career Studies Certificate (046)

Purpose The Web Scripting and Design Career Studies Certificate program provides an individual with knowledge and skills for developing Web sites and server-side integrated Web applications for small- to medium-sized organizations. Students will learn the basics of XHTML coding, Web design techniques, client and server-side scripting languages, and Web graphic design.

Note: Students may choose to complete this program through Distance Learning. A student must have the permission of the IT Program Head to complete this program through the Distance Learning option.

Admission requirements General college curricular admission.

Curriculum and Other Requirements

		Credits
ITD 110	Web Page Design I	3
ITD 136	Database Management Software	4
ITD 210	Web Page Design II (or ITD 212)	3
ITE 160	Introduction to E-Commerce	3
ITP 100	Software Design	3
ITP 225	Web Scripting Languages	4
Total Minimum Credits for Certificate		**20**

Suggested Course Sequence

Fall	Spring
ITD 110	ITD 210 or ITD 212
ITD 136	ITE 160
ITP 100	ITP 225

Interior Design – Certificate (522)

Purpose The Interior Design Certificate program provides a foundation in visual presentation, special design, color coordination, the evolution of furniture and interior styles, and business procedures. The curriculum is designed to introduce students to the Interior Design field and to prepare students for entry-level positions or full-time employment. Curriculum students will develop the necessary skills to work with other interior design professionals.

Occupational objectives The certificate program prepares the student for employment in the interior design field in a variety of occupations such as a color consultant or retail sales associate in textiles, floor coverings, decorative accessories or home furnishings. Graduates of the program will be prepared to work as an interior design aide or establish their own client base.

Curriculum admission guidelines
Proficiency in high school English, and three units of mathematics (two units of Algebra, one unit of Geometry). Developmental courses may be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements

		Credits
DRF 238[2]	Computer Aided Modeling and Rendering I	3
ENG 111	College Composition I	3
IDS 100	Theory and Techniques of Interior Design	3
IDS 105	Architecture Drafting for Interior Design	3
IDS 109	Historical Styles of Furniture and Interiors	3
IDS 116	Period Residential Design	4
IDS 190	Coordinated Internship	1
IDS 205	Materials and Sources	3
IDS 206	Lighting and Furnishings	3
IDS 225	Business Procedures	3
IDS 245	Computer Aided Drafting for Interior Designers	3
MTH 120	Introduction to Mathematics	3
E[1]	IDS Elective	3
Total Minimum Credits for Certificate		**38**

[1] Electives may be selected from the following: ARC 221, ART 101, ART 121, ART 131, or IDS 235.

[2] Uses Autodesk® Vis

Suggested Course Sequence

Fall	Spring
IDS 100	IDS 105
IDS 205	IDS 109
ENG 111	MTH 120
Fall	**Spring**
IDS 116	DRF 238
IDS 190	IDS 206
IDS Elective	IDS 225
	IDS 245

Liberal Arts – Associate of Arts (648)

Purpose The curriculum is designed for persons who plan to transfer to a four-year program to complete a baccalaureate degree, usually the bachelor of arts degree in Liberal Arts or Social Sciences. Students in this program may wish to major in the following fields at four-year institutions: English, foreign language, humanities, journalism, philosophy, pre-law, social sciences, or speech/drama.

Students are urged to acquaint themselves with the requirements of the major department in the college or university to which transfer is contemplated and also to consult with their faculty advisor or counselor at Virginia Western in planning their program and selecting electives. In order to prepare for junior-class standing at a four-year college or university, the student usually must complete a program of study at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

Special curriculum admission guidelines Four units of English; Algebra I, Geometry, and Algebra II; one unit of Laboratory Science; and one unit of History. The remaining units are elective courses, but at least two units of a foreign language are recommended. Students are urged to check the mathematics requirement of the four-year college or university to which they plan to transfer to determine the proper mathematics courses to be taken in the community college. Developmental courses may be recommended for students with deficiencies in English, Reading, and/or Mathematics.

Curriculum and Other Requirements

		Credits
ENG 111-112	College Composition I-II	6
ENG 241-242[4]	Survey of American Literature I-II *or*	
ENG 243-244	Survey of English Literature I-II	6
HIS 101-102	History of Western Civilization I (or HIS 121-122)	6
HLT/PED[6]	Health or Physical Education	2
ITE 115	Introduction to Computer Applications and Concepts	3
MTH 151	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152[7]	Mathematics for the Liberal Arts II (or MTH 271)	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[1]	Social Science Elective	6
E[2]	Natural Science Sequence	8
E[3]	Intermediate Foreign Language Electives	6
E[5]	Humanities/Fine Arts Elective or Beginning Foreign Language Electives	6-8
Total Minimum Credits for Degree		**60**

[1] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirement at the four-year institution.

[2] Natural Science elective must include a two-semester sequence of BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202.

[3] Foreign language electives must be selected from French or Spanish. Completion of intermediate level is required for graduation. Students may take the intermediate level, composed of two three-credit courses, during their first year to meet the foreign language requirement if they have completed two years of a high school foreign language with at least a "B" average. If not, students must take the beginning level, composed of two four-credit courses, during the first year and the intermediate level during the second year.

[4] A two-semester sequence of ENG 241-242 or ENG 243-244 is recommended for transfer to most four-year institutions.

[5] Humanities/Fine Arts electives must be chosen from the "Approved List of Transfer Courses" on page 50. A two-semester sequence of the same course is recommended for transfer to most four-year institutions. However, if students took the beginning level of a foreign language during the first year, this should be used as their Humanities elective.

[6] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consult approved Health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service. Students who completed the intermediate-level foreign language during their first year of study must complete three credits of Health or Physical Education.

[7] The completion of a two-semester sequence of MTH 151-152 or MTH 163-271 is recommended for transfer to most four-year colleges. Radford University no longer accepts the MTH 151-152 sequence. They require either MTH 151 and MTH 157 or MTH 163 and MTH 157. Students are urged to check the Mathematics requirement of the four-year college to which they plan to transfer to determine the proper Mathematics courses to be taken at the community college.

Suggested Course Sequence

Fall
ENG 111
SDV 100 or SDV 108
Social Science Elective
Natural Science Sequence
Foreign Language Elective

Spring
ENG 112
ITE 115
Social Science Elective
Natural Science Sequence
Foreign Language Elective

Fall
ENG 241 or 243
HIS 101 or HIS 121
MTH 151 or MTH 163
SPD 100
Humanities/Fine Arts Elective or Foreign Language Elective

Spring
ENG 242 or 244
HIS 102 or HIS 122
HLT/PED
MTH 152 or MTH 271
Humanities/Fine Arts Elective or Foreign Language Elective

Liberal Arts, continued – Associate of Arts (648)

Purpose The curriculum is designed for persons who plan to transfer to a four-year program in a professional art school or to a four-year program in fine arts. Students who are interested in art but who do not elect immediately to transfer will also find this program suited to their needs. Students are urged to acquaint themselves with the requirements of the major department in the college or university to which transfer is contemplated and also to consult with their faculty advisor or counselor at Virginia Western in planning their program of study and selecting electives. In order to prepare for junior-class standing at a four-year college or university, the student usually must complete a program of study at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

Curriculum admission guidelines

A satisfactory aptitude in visual art is preferred for entry into the art program. High school record should include four units of English; Algebra I, Geometry and Algebra II; one unit of Laboratory Science; and one unit of Social Science. Developmental courses may be recommended for students with deficiencies in English, Reading, and/or Mathematics.

Curriculum and Other Requirements

		Credits
Fine Arts Specialization (01)		
ART 121-122	Drawing I-II	6
ART 131	Fundamentals of Design I	3
ART 132[5]	Fundamentals of Design II or Foreign Language Elective	3
ENG 111-112	College Composition I-II	6
ENG 241[5]	Survey of American Literature I or Foreign Language Elective	3
HIS 101-102	History of Western Civilization I (or HIS 121-122)	6
HLT/PED[6]	Health or Physical Education	2
ITE 101[1]	Introduction to Microcomputers	1
MTH 151	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152[7]	Mathematics for the Liberal Arts II (or MTH 157 or MTH 271)	3
SDV 101	Orientation to Visual Arts	1
SPD 100	Principles of Public Speaking (or SPD 105)	3
E[2]	Foreign Language Elective	6-8
	Social Science Elective	6
E[4]	Natural Science Sequence	8
Total Minimum Credits for Degree		**60–62**

[1] Students who complete the intermediate-level foreign language during their first year of study may complete ITE 115 or ART 180 instead of ITE 101.

[2] Foreign language electives must be chosen from French or Spanish. Completion of intermediate level is required for graduation. Students may take the intermediate level, composed of two three-credit courses, during their first year to meet the foreign language requirement if they have completed two years of a high school foreign language with at least a "B" average. If not, students must take the beginning level, composed of two four-credit courses, during the first year and the intermediate level during the second year.

[3] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at Virginia Western that will satisfy the Social Science requirements at the four-year institution.

[4] A two-semester sequence of Natural Science must be chosen from BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202.

[5] If students took the beginning level of foreign language during the first year, then they must take the intermediate level during the second year. On the other hand, if they took the intermediate level during the first year, they will take ENG 241 and ART 132 during the second year.

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

[7] The completion of a two-semester sequence of MTH 151-152 or MTH 163-271 is recommended for transfer to most four-year colleges. Radford University no longer accepts the MTH 151-152 sequence. They require either MTH 151 and MTH 157 or MTH 163 and MTH 157. Students are urged to check the Mathematics requirement of the four-year college to which they plan to transfer to determine the proper Mathematics courses to be taken at the community college.

Suggested Course Sequence

Fall
ART 121
ENG 111
ITE 101
SDV 101
Foreign Language Elective
Social Science Elective

Spring
ART 122
ENG 112
SPD 100 or SPD 105
Foreign Language Elective
Social Science Elective

Fall
ART 131
ENG 241 or Foreign Language Elective
HIS 101 or HIS 121
MTH 151 or MTH 163
Natural Science Sequence

Spring
ART 132 or Foreign Language Elective
HIS 102 or HIS 122
HLT/PED
MTH 152 or MTH 271
Natural Science Sequence

Maintenance Technology – Career Studies Certificate (098)

Purpose This program offers the skills to enhance a career in facilities maintenance. Students can learn the skills and concepts necessary to install, operate, maintain and repair control, piping, HVAC/R (heating, venting, air conditioning and refrigeration) and mechanical systems in large commercial, medical, institutional, and industrial buildings. Students will learn troubleshooting skills, problem-solving methods and electrical concepts. Continuous improvement techniques and effective written, verbal, and electronic communications skills are stressed.

Occupational objectives Students will be prepared to work in the maintenance department of small industry, health care facilities, and other heavy industry organizations.

Curriculum admission guidelines
Proficiency in high school English and Mathematics (one unit of Algebra)

Curriculum and Other Requirements

		Credits
AIR 121-122	Air Conditioning and Refrigeration I-II	6
BLD 111	Blueprint Reading and the Building Code	3
ELE 133-134	Practical Electricity I-II	6
MEC 162	Fluid Mechanics Hydraulics/Pneumatics	3
WEL 120	Fundamentals of Welding	3
Total Minimum Credits for Certificate		**21**

Note: AIR students are required to provide their own electrical multimeter and refrigerant gauges as detailed in the course syllabus.

Suggested Course Sequence

Fall	Spring
AIR 121	AIR 122
BLD 111	ELE 134
ELE 133	MEC 162
WEL 120	

Education pays

Maintenance Technology...

Virginia average starting salary: $19,400[1]

Virginia median salary: $30,900[1]

Job opportunities favorable; anticipated increase in demand of 15% from 2004 to 2014[1, 2]

Many openings expected over the next decade due to the retirement of experienced personnel[2]

[1] Source: America's Career InfoNet>Occupation Profile>Maintenance & Repair Workers, General>Virginia (2005)

[2] Source: U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook*

Management – Associate of Applied Science (212)

Purpose The curriculum is designed for persons who seek full-time employment in business and industry upon completion of this curriculum. Individuals who are seeking initial employment in a managerial position and those presently in business who are seeking promotion to management may benefit from this curriculum.

Occupational objectives Management trainee, supervisor, real estate sales, banking, finance, retail merchandising, production operations, purchasing agent, sales management, and other related business and industry occupations.

Radford University Bachelor Degree Program As a result of an articulation agreement with Radford University, any student who completes the Associate of Applied Science (AAS) degree in Management will be granted admission to the Radford University Bachelor of Business Administration (BBA) degree in Management (Organizational Management concentration) offered on Virginia Western's campus. MTH 163 and MTH 271 are required instead of MTH 120 or BUS 125 for students in this transfer program.

Curriculum and Other Requirements

Management Major

		Credits
ACC 211-212	Principles of Accounting I-II	6
ACC 213-214	Principles of Accounting Lab I-II	2
ACC 215	Computerized Accounting	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 200	Principles of Management (or BUS 111 or BUS 165)	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
ECO 201	Principles of Macroeconomics	3
ECO 202	Principles of Microeconomics	3
ENG 111	College Composition I	3
FIN 215	Financial Management	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Introduction to Computer Applications and Concepts	3
MKT 100	Principles of Marketing	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 105	Oral Communication	3
E[2]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**68**

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

[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

Fall	Spring
ACC 211	ACC 212
ACC 213	ACC 214
BUS 100	BUS 125 or MTH 271
ENG 111	BUS 200 or BUS 111 or BUS 165
ITE 115	HLT/PED
MTH 120 or MTH 163	MKT 100
SDV 100 or SDV 108	SPD 105

Fall	Spring
ACC 261	ACC 215
BUS 205	AST 205
BUS 225	BUS 202
BUS 241	ECO 201
ECO 202	FIN 215
	Humanities/Fine Arts Elective

Management, continued – Associate of Applied Science (212)

Curriculum admission guidelines
Minimum of two units of high school math, one must be Algebra or the equivalent, and proficiency in high school English. Developmental courses may be recommended for tudents with deficiencies in English and mathematics.

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

Curriculum and Other Requirements — Credits

Banking and Finance Specialization (04)

ACC 211-212	Principles of Accounting I-II	6
ACC 213-214	Principles of Accounting Lab I-II	2
ACC 215	Computerized Accounting (or FIN Elective)	3
ACC 261	Principles of Federal Taxation I (or FIN Elective)	3
AST 205	Business Communications	3
BUS 100	Introduction to Business	3
BUS 125	Applied Business Mathematics (or MTH 271)	3
BUS 200	Principles of Management (or BUS 111 or 165)	3
BUS 202	Applied Management Principles	3
BUS 225	Applied Business Statistics	3
ECO 201	Principles of Macroeconomics	3
ENG 111	College Composition I	3
FIN 110	Principles of Banking	3
FIN 125	Law and Banking (or BUS 241)	3
FIN 150	Economics for Bankers (or ECO 202)	3
FIN 215	Financial Management	3
FIN 256	Marketing for Bankers (or MKT 100)	3
HLT/PED[1]	Health or Physical Education	2
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
SPD 105	Oral Communication	3
E[2]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**68**

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

[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

Fall	Spring
ACC 211	ACC 212
ACC 213	ACC 214
BUS 100	BUS 125 or MTH 271
ENG 111	BUS 200 or BUS 111 or BUS 165
ITE 115	HLT/PED
MTH 120 or MTH 163	FIN 256 or MKT 100
SDV 100 or SDV 108	SPD 105

Fall	Spring
ACC 261 or FIN Elective	ACC 215 or FIN Elective
FIN 110	AST 205
BUS 225	BUS 202
FIN 125 or BUS 241	ECO 201
FIN 150 or ECO 202	FIN 215
	Humanities/Fine Arts Elective

Management, continued – Associate of Applied Science (212)

Curriculum and Other Requirements — Credits

Marketing Specialization (05)

ACC 211-212	Principles of Accounting I-II	6
ACC 213-214	Principles of Accounting Lab I-II	2
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 202	Applied Management Principles	3
BUS 225	Applied Business Statistics	3
BUS 241	Business Law I	3
ECO 201	Principles of Macroeconomics	3
ECO 202	Principles of Microeconomics	3
ENG 111	College Composition I	3
FIN 215	Financial Management	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Introduction to Computer Applications and Concepts	3
MKT 100	Principles of Marketing	3
MKT 110	Principles of Selling	3
MKT 216	Retail Organization and Management (or BUS 165 or BUS 200)	3
MKT 220	Principles of Advertising	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SDV 108	College Success Skills (or SDV 108)	1
SPD 105	Oral Communication	3
E[2]	Humanities/Fine Arts Elective	3

Total Minimum Credits for Degree **68**

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

[2] Humanities/Fine Arts Elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

Fall
ACC 211
ACC 213
BUS 100
ENG 111
HLT/PED
ITE 115
MTH 120 or MTH 163
SDV 108 or SDV 100

Spring
ACC 212
ACC 214
AST 205
BUS 125 (or MTH 271)
HLT/PED
MKT 100
MKT 216 (or BUS 165 or BUS 200)

Fall
ACC 261
BUS 225
BUS 241
ECO 202
MKT 110
SPD 105

Spring
BUS 202
ECO 201
FIN 215
MKT 220
Humanities/Fine Arts Elective

Curriculum and Other Requirements — Credits

Real Estate Specialization (03)

ACC 211-212	Principles of Accounting I-II	6
ACC 213-214	Principles of Accounting Lab I-II	2
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 200	Principles of Management (or BUS 111 or BUS 165)	3
BUS 225	Applied Business Statistics	3
BUS 241	Business Law I	3
ECO 201	Macroeconomics	3
ECO 202	Microeconomics	3
ENG 111	College Composition I	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Introduction to Computer Applications and Concepts	3
MKT 100	Principles of Marketing	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
REA 100	Principles of Real Estate	4
REA 216	Real Estate Appraisal	3
REA 217	Real Estate Finance (or FIN 215)	3
REA 245	Real Estate Law (or LGL 115)	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 105	Oral Communication	3
	Humanities/Fine Arts Elective	3

Total Minimum Credits for Degree **68**

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

[2] Humanities/Fine Arts Elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

Fall
ACC 211
ACC 213
BUS 100
ENG 111
HLT/PED
ITE 115
MTH 120 or MTH 163
SDV 108 or SDV 100

Spring
ACC 212
ACC 214
BUS 125 or MTH 271
BUS 200 or BUS 111 or BUS 165
HLT/PED
MKT 100
REA 100

Fall
ACC 261
BUS 225
BUS 241
ECO 202
REA 216
SPD 105

Spring
AST 205
ECO 201
REA 217 or FIN 215
REA 245 or LGL 115
Humanities/Fine Arts Elective

Mechanical Engineering Technology

(Automated Manufacturing Emphasis) – Associate of Applied Science (956)

Purpose The Mechanical Engineering Technology program is designed to give the student broad experience and training in the basic concepts of the mechanical engineering technology field. In addition to the general education and mechanical technology courses, this program offers courses in machine design and in computer numeric control applications.

Graduates may seek immediate employment or consider opportunities available to transfer to Bachelor of Technology programs offered by some four-year colleges and universities.

Occupational objectives The mechanical engineering technician usually serves as a liaison between the engineering and production departments working with the design and development of engineering plans. Responsibilities may include estimating, inspecting, and testing engineering equipment; operating, maintaining, and repairing engineering plants; research and development; sales and representation; and training and education.

Curriculum admission guidelines Proficiency in high school English and three units of mathematics (two units of Algebra and one unit of Geometry or Trigonometry). Developmental courses may be recommended for students with deficiencies in English and mathematics.

Old Dominion University Bachelor Degree Program As a result of an articulation agreement with Old Dominion University, students receiving an Associate of Applied Science (AAS) degree in Mechanical Engineering Technology may earn a baccalaureate degree (BS) in Engineering Technology on the Virginia Western Community College campus in Roanoke.

Curriculum and Other Requirements

		Credits
Marketing Specialization (05)		
DRF 201-202-203[3]	Computer Aided Drafting and Design I-II-III	9
DRF 226	Computer Aided Machining	3
DRF 238	Computer Aided Modeling and Rendering	3
EGR 216	Computer Methods in Engineering and Technology	3
ENG 111	College Composition I	3
ETR 113	DC and AC Fundamentals I	4
HLT/PED[2]	Health or Physical Education	2
MEC 113	Materials and Processes of Industry	3
MEC 119	Introduction to Basic CNC and CAM	3
MEC 131	Mechanics I-Statics for Engineering Technology	3
MEC 132	Mechanics II-Strength of Materials for Engineering Technology	3
MTH 115-116[6]	Technical Mathematics I-II	6
PHY 201	General College Physics I	4
SDV 101	Orientation to Engineering and Engineering Technology	1
SPD 100	Principles of Public Speaking or SPD 105	3
E[1]	Social Science Elective	6
	Technical Elective	3
	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**68**

[1] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at VWCC that will satisfy the Social Science requirements at the four-year institution.

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

[3] Students may be awarded credit for DRF 201 based on articulation agreements with several local high schools.

[4] Technical elective should be selected from EGR 126, EGR 206, MTH 157, PHY 202, or see advisor for additional options.

[5] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

[6] Students may substitute MTH 166 and MTH 175. See advisor for details.

Suggested Course Sequence

Fall	Spring
DRF 201	DRF 202
EGR 216	DRF 226
ENG 111	MEC 113
MEC 119	MEC 131
MTH 115	MTH 116
SDV 101	Humanities/Fine Arts Elective
Fall	**Spring**
DRF 203	DRF 238
ETR 113	HLT/PED
HTL/PED	SPD 100
MEC 132	Social Science Elective
PHY 201	Technical Elective
Social Science Elective	

Medical Office Records Management

Certificate (285)

Purpose This certificate is designed to prepare personnel to perform office management functions in physicians' offices and ambulatory clinics. Some examples of these functions include scheduling appointments, maintaining health records, responding to requests for release of medical information, coding clinical data, completing health insurance forms, managing billing/collections functions, and managing office personnel.

Curriculum admission guidelines

Students must be admitted to VWCC and have a high school diploma or GED. Students must take AST 101 or type 35 wpm on Keyboarding Proficiency Test and be proficient in using MS Windows or take AST 140. Students with no coding background should take HIT 195 (Introduction to Coding) before committing to this program of study.

Occupational objectives Employment opportunities are plentiful throughout the country in physicians' offices, HMOs, urgent care centers, managed care practices, and other types of health agencies as practice managers.

Curriculum and Other Requirements

		Credits
ACC 211	Principles of Accounting I	3
ACC 213	Principles of Accounting Lab I	1
AST 141	Word Processing I	3
AST 205[4]	Business Communications	3
AST 232	Microcomputer Office Applications	3
ENG 111	College Composition I	3
HIT 130	Healthcare Information Systems	3
HIT 149	Introduction to Medical Practice Management	2
HIT 226	Legal Aspects of Health Records Documentation	2
HIT 253[1]	Health Records Coding	4
HIT 254[2]	Advanced Coding and Reimbursements	4
HIT 290[3]	Coordinated Internship	3
HLT 143	Medical Terminology I	3
HLT 144	Medical Terminology II	3
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Support Technology	1
Total Minimum Credits for Degree		**44**

[1] Prerequisite: HLT 143.
[2] Prerequisites: HIT 253, HLT 143, and HLT 144.
[3] Must be taken in final term or with instructor's or departmental approval.
[4] Prerequisites: AST 114 or AST 101 or equivalent and ENG 111 or AST 107.

Suggested Course Sequence

Fall	Spring
AST 141	AST 205**
AST 232	ENG 111
HIT 149* (fall only)	HIT 130
HLT 143	HIT 253
PSY 120	HLT 144
SDV 101	

Fall
ACC 211
ACC 213
HIT 226* (fall only)
HIT 254
HIT 290

* Offered only in fall semester
** AST 107 (Editing and Proofreading Skills) is strongly recommended as a prerequisite.

Medical Office Specialist – Career Studies Certificate (087)

Purpose This Career Studies Certificate is designed to prepare personnel to perform office functions in physicians' offices and ambulatory clinics. Some examples of these functions include scheduling appointments, maintaining health records, responding to requests for release of medical information, coding clinical data, completing health insurance forms, and billing/collections functions.

Curriculum admissions guidelines Students must be admitted to VWCC and have a high school diploma or GED. Students must take AST 101 or type 35 wpm on Keyboarding Proficiency Test and be proficient in using Microsoft® Windows or take AST 140. **Students with no coding background should take HIT 195 (Introduction to Coding) before committing to this program of study. AST 107 (Editing and Proofreading Skills) is strongly recommended as a prerequisite to AST 205 (Business Communications).**

Occupational objectives Employment opportunities are plentiful throughout the country in physicians' offices, HMOs, urgent care centers, managed care practices, and other types of health agencies.

Curriculum and Other Requirements

		Credits
AST 141	Word Processing I	3
AST 205[3]	Business Communications	3
AST 232	Microcomputer Office Applications	3
HIT 149	Introduction to Medical Practice Management	2
HIT 196	On-Site Training	2
HIT 226	Legal Aspects of Health Record Documentation	2
HIT 253[1]	Health Records Coding	4
HIT 254[2]	Advanced Coding and Reimbursements	4
HLT 143	Medical Terminology I	3
HLT 144	Medical Terminology II	3
Total Minimum Credits for Certificate		**29**

[1] Prerequisite: HLT 143. Students with no coding background must take HIT 195.

[2] Prerequisites: HIT 253, HLT 143, and HLT 144.

[3] Prerequisites: AST 114 or AST 101 or equivalent **and** ENG 111 or AST 107.

Suggested Course Sequence

Fall	Spring
AST 141	AST 205*
HIT 149 (fall only)	AST 232
HIT 226	HIT 253
HLT 143	HLT 144

Fall

HIT 196
HIT 254

* AST 107 (Editing and Proofreading Skills) is strongly recommended as a prerequisite.

Medical Transcriptionist – Certificate (286)

Purpose The curriculum is designed to prepare selected students to qualify as contributing members of the health care team.

Occupational objectives Medical transcriptionists are employed in departments of medical records, radiology, and pathology in hospitals and other health care facilities. Employment in a physician's office may include medical transcription as well as general office work.

Curriculum admission guidelines The applicant should have completed four units of high school English, one unit of high school Laboratory Science (preferably Biology), two units of Social Studies, one unit of high school Mathematics, and two units of high school keyboarding or the equivalent. Developmental courses may be recommended for students with deficiencies in English. Priority will be given to applicants with high class standing. A personal interview with the Medical Transcriptionist faculty is part of the admission process. Applicants are requested to submit a medical report indicating good health. The student will be responsible for transportation to and from agencies for clinical experience.

Essential functions To successfully complete each keyboarding class, the student must be able to type without watching his or her hands while meeting the minimum speed and accuracy requirements.

Curriculum completion guidelines Students who receive a final grade lower than "C" in any of the courses in the medical transcriptionist sequence must be recommended by the instructor and approved by the Division Dean to continue in the major.

Curriculum and Other Requirements

		Credits
AST 102[1]	Keyboarding II	3
AST 107	Editing/Proofreading Skills	3
AST 113	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Microsoft® Windows	1
AST 141	Word Processing I (Microsoft® Word)	3
AST 245[2]	Medical Machine Transcription I	3
ENG 111	College Composition I	3
HIT 121[3]	Medical Transcription I	4
HIT 125[2]	Medical Report Transcription	3
HIT 196[3]	On-Site Training in Medical Transcription	3
HLT 143-144	Medical Terminology I-II	6
NAS 171	Human Anatomy and Physiology	4
PSY 120	Human Relations	3
SDV 101	Orientation to Administrative Support Technology	1
SPD 105	Oral Communications	3
Total Minimum Credits for Certificate		**44**

[1] Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test. Co-requisite: AST 113.

[2] Prerequisites: AST 102, AST 107, and HLT 143.

[3] Student must complete all other courses before enrolling in HIT 121 and HIT 196.

Suggested Course Sequence

Fall
AST 102
AST 107
AST 113
AST 140
HLT 143
NAS 171
SDV 101

Summer
HIT 125 (summer only)

Spring
AST 141
AST 245
ENG 111
SPD 105
HLT 144

Fall
HIT 121 (fall only)
HIT 196 (fall only)
PSY 120

Microcomputer Systems Technology

Career Studies (068)

Purpose This program is designed to prepare a student for employment in the microcomputer-based telecommunications industry ranging from video and display systems to computer systems and networks. The curriculum involves three semesters of study and practice in specific technical subjects required for competence in this field. Emphasis on the basics along with hands-on troubleshooting of electronic systems affords graduates flexibility in choosing an occupation. Courses on A+® Certification and Cisco® CCNA™ are included in the curriculum.

Occupational objectives Computer technician, LAN/WAN technician, and technical representative/ salesperson.

Curriculum admission guidelines Proficiency in high school English and completion of Algebra I. Developmental courses will be required for students with deficiencies in English and Mathematics.

Curriculum and Other Requirements

		Credits
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**

Suggested Course Sequence

Fall	Spring
ETR 113	ETR 123
TEL 150	ETR 141
	ETR 285
	TEL 151
Fall	
ETR 124	
ETR 142	

Nursing – Associate of Applied Science (156)

also see: Commonwealth Nursing and Practical Nursing

Purpose The curriculum is designed to prepare selected students to qualify as contributing members of the health team implementing direct patient care as beginning practitioners in a variety of health service facilities. At the successful completion of the program, students will be eligible to take the National Council Licensure Exam leading to the designation of registered nurse (RN).

Note: Individuals who have a felony or misdemeanor conviction 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. If you wish to discuss this issue, please call the Nursing Administrator at (540) 857-6283.

Approval/accreditation This program is approved by the Virginia Board of Nursing. Virginia Western is accredited by the Southern Association of Colleges and Schools (SACS).

Occupational objectives Employment opportunities for the registered nurse include staff positions in hospitals, nursing homes, health departments, physicians' offices, clinics, day care centers, and home health agencies.

Transfer to Baccalaureate Degree programs Students who are planning to transfer to a Baccalaureate Degree program following the AAS degree are advised to take appropriate college transfer courses.

As a result of an articulation agreement with Radford University, any student who completes the Associate of Applied Science (AAS) degree in Nursing and who meets the standards for official admission into the BSN program with a cumulative grade point average of 2.5 or higher, will be granted admission on a space available basis to the Radford University's School of Nursing RN to BSN tract.

As a result of an articulation agreement with the Jefferson College of Health Sciences, any student who completes the Associate of Applied Science (AAS) degree in Nursing and who meets the standards for official admission into the BSN program with a cumulative grade point average of 2.5 or higher, will be granted admission to the Jefferson College of Health Sciences School of Nursing RN to BSN tract. Students should refer to the Jefferson College of Health Science catalog for details regarding admission.

Curriculum admission guidelines and procedure for the Class of 2008

1. The applicant must hold a high school diploma or GED and have completed the following high school prerequisites with a grade of "C" or better: one unit of biology, one unit of chemistry, one unit of Algebra I. Proficiency in basic reading and math skills are necessary for success in the program. If the applicant is deficient in one or more of these high school prerequisites, a counselor at Virginia Western can recommend appropriate college courses that can be substituted for the high school courses.
2. Applicants to the Nursing program are strongly encouraged to meet with a counselor prior to enrollment in any course included in the Nursing program or in any course to correct an academic deficiency.
3. The applicant's cumulative high school grade point average (GPA) must be at least 2.5. If the applicant has been to college, the applicant's cumulative college GPA must also be at least 2.5 based on at least 12 credit hours of college credit in a 12-month timeframe. The GPA is determined at the end of fall semester prior to admission. High school graduates and GED holders who earned less than a 2.5 GPA during high school will be considered for admission if they have generated a college GPA of 2.5 or above based on at least 12-semester college credit hours within a 12-month period.
4. Applications for the 2008 class will be accepted beginning May 1, 2007 and must be completed no later than March 1, 2008. Should spaces be available, later applications will be considered. A complete application includes: an application to the College, official transcripts from all colleges attended (if you have attended a community college in Virginia, these transcripts 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 2008 Nursing Application form. Nursing Application forms are available in the Admissions Office and the Health Technology Information Office. Qualified applicants, during the spring semester, will be required to take the nursing entrance test and may be contacted for an interview with the Nursing Program Head. It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts (if you have attended a community college in Virginia these transcripts are not required) in one envelope to the Virginia Western Health Technology Information Office, with the Virginia Western application. After March 1, a Nursing Admissions Committee will review all completed applications. Applicants should be aware that meeting the curriculum admission standards does not guarantee program admission. In May, all applicants will receive a letter to notify them of their status in the program.

Nursing, continued – Associate of Applied Science (156)

Admission priorities When the applications are reviewed in late April, priority will be given to applicants with a cumulative GPA of 3.0 or higher who have the strongest academic record, strongest entrance test results, and who have either already completed all high school prerequisites or anticipate completion of the missing prerequisites before summer 2008.

Nursing support courses The Nursing program is an educationally challenging program. Some students prefer to spread out their workload by completing support courses such as anatomy and physiology and microbiology before beginning the nursing program. Applicants are encouraged to take support courses before starting the program; however, it should be understood that support courses are not treated as prerequisites for admission to the Nursing program.

NUR 135 (Drug Dosage) is strongly recommended in the summer session preceding admission to increase the potential for success in the program.

Please note BIO 141, BIO 142, and NAS 185 must be repeated if they were completed more than five years prior to the date of admission into the program.

Essential nursing program functions To successfully complete the clinical component of the program, the student must be able to perform all of the essential functions of a clinical nurse:

1. Communicate satisfactorily with clients, physicians, peers, family members and the health care team.
2. See and hear adequately to note slight changes in the client's condition.
3. Hear adequately to perceive and interpret various equipment signals.
4. See adequately to read monitors in order to correctly interpret data on monitor.
5. Stand and/or walk six to eight hours/day.
6. Walk rapidly for a prolonged period from one area to another.
7. Bend or squat frequently.
8. Assist in lifting or moving clients of all age groups and weights.
9. Demonstrate adequate eye/hand coordination for dexterity in manipulation of equipment.
10. Use hands for grasping, pushing, pulling. and fine manipulation.
11. Work with arms fully extended overhead for short periods.
12. Manage care of a client in an elevated hospital bed or stretcher, including one-man CPR when necessary.
13. Differentiate the color spectrum for color coding of charts and monitoring equipment.
14. Possess the visual acuity to correctly read handwritten orders, medication records, chart contents, and provide safety for clients and visitors.

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

Clinical environment The student should realize that student nurses are, by nature of the profession, exposed regularly to highly stressful and demanding situations, infectious diseases, difficult clients, and organizational and time pressures in a variety of client care settings. Students may also be exposed to a variety of communicable diseases.

Student responsibilities after acceptance into the program 1.Admission is contingent upon:

a satisfactory medical examination, CPR certification, and malpractice insurance. Malpractice insurance is available for purchase after admission to the program. This policy is non-refundable. All documentation must be returned to the Nursing Program Head at orientation or the student will be dropped from the program unless there are extenuating circumstances (i.e. late admission). The physical examination must include evidence of two Rubella vaccinations or Rubella titer, chickenpox vaccination or chickenpox titer, two-stage PPD skin test (or chest x-ray). Synthetic Hepatitis B vaccination series is required. Students must begin the vaccine series prior to the start of the program. Negative urine drug screening is required to attend clinical experiences. Random drug and alcohol screening may be required during the Nursing program. Costs of the drug screenings are the responsibility of the student.

2. Attending a two-day Nursing orientation during the summer session prior to program entry. The Nursing faculty will conduct fall semester advising during this time and students will register for their classes. Tuition payment will be according to College guidelines for fall semester.
3. Maintaining a "C" in Natural Science program requirements (BIO 141, BIO 142, and NAS 185) in order to remain in good standing for Nursing program acceptance.
4. NUR 135 (Drug Dosage) is strongly recommended in the summer session preceding admission to increase the potential for success in the program.
5. Providing transportation to and from agencies utilized for clinical experience.
6. Purchasing required lab supplies, uniforms, and accessories.
7. Paying for membership in the professional organization for two years.
8. Being prepared to attend classes and/or clinicals on day or evening shift.; 6, 8, or 12 hour shifts.

Advanced placement for LPN For LPNs seeking the AAS in Nursing, please note the application deadline is May 1, 2007 for the 2008 transition course. The application deadline is May 1, 2008 for the 2009 transition course.

Nursing, continued – Associate of Applied Science (156)

Admission requirements

1. Graduate of an approved Practical Nursing program.
2. Currently licensed as an LPN in the United States.

Upon admission, students will be required to complete an entrance test which is taken at student's expense and is nonrefundable.

The LPN will be awarded credit for NUR 121 and NUR 122 upon successful completion of the following courses: BIO 141, BIO 142, NAS 185, ENG 111, NUR 115, NUR 135, and NUR 238.

Readmission

- Students who meet the readmission criteria set forth in the Nursing Program Handbook may request readmission to the nursing program. Requests should be directed in writing to the Nursing Program Head as soon as the student has made the decision to reapply. Readmission is based on availability of space. Requests must be made prior to February 15 for fall semester and May 30 for spring semester.
- Readmission is not automatic. Criteria to be considered when a student applies for readmission are outlined in the Nursing Program Handbook which is available upon admission to the program.

Retention policies A complete statement of these policies is contained in the Nursing Program Handbook, which is available upon admission to the program.

Successful completion of the program requires the student to maintain a grade of "C" or better in all Nursing and Natural Science courses and a satisfactory evaluation in all clinical components.

Curriculum and Other Requirements

		Credits
BIO 141-142	Human Anatomy and Physiology I-II	8
ENG 111	College Composition I	3
ITE 102	Computers and Information Systems	1
NAS 185	Microbiology	4
NUR 121-122[1,2]	Nursing Fundamentals I-II	20
NUR 238-239[1,2]	Integrated Nursing Principles I-II	20
PSY 200	Principles of Psychology	3
PSY 230	Developmental Psychology	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking (or SPD 105)	3
E[3]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**69**

[1] Includes instruction in fundamental mathematical skills.

[2] Health and wellness are an integral part of the Nursing curriculum. Health and disease, health promotion, preventive behavior, nutrition, and community health are all addressed within the curriculum. NUR 121, NUR 122, NUR 238 and NUR 239 already emphasize wellness and health.

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Required Course Sequence*

Fall–First Year	Spring–First Years
BIO 141	BIO 142
ENG 111	NAS 185
NUR 121	NUR 122
SDV 100 or SDV 108	
Fall–Second Year	**Spring–Second Year**
ITE 102	NUR 239
NUR 238	PSY 230
PSY 200	Humanities/Fine Arts Elective
SPD 100 or SPD 105	

* Support courses (non-NUR courses) may be taken prior to entry.

Notes:

BIO 141, BIO 142, NAS 185 must be completed before 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.) Students should be aware that BIO 141 is a co-requisite for NUR 121 and BIO 142 is a co-requisite for NUR 122.

ENG 112 is recommended for students planning to transfer to a Baccalaureate Degree program.

Education pays

Nursing...

Virginia average starting salary: $37,100[1]

Virginia median salary: $52,500[1]

Job opportunities excellent; anticipated increase in demand of 29% from 2004 to 2014[1, 2]

Nursing is the largest health care occupation, with 2.4 million jobs[2]

Nursing is projected to experience the second largest percentage of new jobs among all occupations[2]

Many employers offer flexible schedules, child care, educational benefits, and bonuses[2]

[1] Source: America's Career InfoNet>Occupation Profile>Registered Nurses>Virginia (2005)

[2] Source: U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook*

Nursing – Commonwealth Nursing

Associate of Applied Science (156-C3)

also see: Nursing and Practical Nursing

Purpose The Commonwealth Nursing Program (CNP) Associate of Applied Science (AAS) degree in Nursing is a non-traditional program sponsored by the Virginia Community College System for students who plan to become Registered Nurses (RN). The VCCS CNP offers all core Nursing courses online through an asynchronous learning process. The lab/clinical component of each core Nursing course will be offered while completing the didactic portion of each course. The lab/clinical component will be offered at various times depending on lab/clinical site availability and may include day, evening, and/or weekend hours. The clinical component will occur in a variety of health care settings and may include, but is not limited to, acute and long-term care facilities, as well as community agencies. At the completion of this program, students are eligible to take the National League for Nursing Licensing Examination for Registered Nurses (NCLEX-RN).

Legal Restrictions The State Board of Nursing has the authority to deny licensure of any applicant who has a felony conviction. Any student desiring admission to the Nursing program who has been convicted of a felony should contact the VCCS CNP Coordinator. VCCS Policy 6.0.1 states, "The Colleges reserve the right to evaluate special cases and to refuse admission to applicants if such refusal is considered to be in the best interest of a college."

Accreditation The VCCS CNP is fully approved by the Board of Nursing and is currently seeking candidacy in the accreditation process by the National League for Nursing Accrediting Commission (NLNAC).

Occupational objectives Nursing is a profession that offers many career opportunities, and Registered Nurses are hired in a variety of health care facilities including hospitals and community agencies.

Computer requirements for admitted students Students must have their own computers, high speed Internet access, and Microsoft® Office 2003 or Microsoft® Windows XP. PC hardware minimum requirements: Microsoft® Windows compatible hardware with 600 Mhz processor or faster and 128 MB of RAM or greater and 1024x768 screen resolution or larger. If students need to purchase a computer, it is highly recommended that students purchase a Pentium III 1.2 GHZ + 512 MB RAM (1 GB recommended) with 3-D graphic accelerator that supports direct X9 or PCI Express 8X with at least 64 MB of RAM laptop or notebook with the hardware and software that is VISTA ready. Students will also need Macromedia Flash Player 6.0.65, a web camera and microphone, and a PDA.

Curriculum admission guidelines and procedure for the Class of 2008

General admission requirements for the college

1. Be admitted to Virginia Western; you may apply online at; www.virginiawestern.edu
2. Submit an official high school transcript or GED.
3. Submit official transcripts from all colleges attended to your home college – Virginia Western Health Technology Information Office.
4. Take the college placement tests at your home college and complete any required developmental courses that are indicated.
5. Meet with the Health Technology Information Officer, Pamela Woody.

   During your meeting with Ms. Woody, you will be placed in the pre-allied health curriculum and assigned a VCCS CNP faculty advisor from the Nursing department. This faculty advisor will assist you as needed.

In addition to the general admission requirements to the college outlined above, you will need to:

1. Attend a CNP information session at Virginia Western (please check web site for dates and times http://www.vw.vccs.edu/health/nursehome).
2. Be 18 years of age or older, or have VCCS CNP coordinator approval
3. Hold a high school diploma or GED
4. Take all required developmental English and mathematics courses.
5. Have completed one unit of high school Algebra, Biology, and Chemistry with a grade of "C" or better **or** taken college level Algebra (MTH 3), Biology (BIO 100-101), and Chemistry (CHM 5 and CHM 101) with a grade of "C" or better. **It is highly recommended that students successfully complete the science requirements before enrolling in the BIO 141-142 or NAS 161-162. Students are also advised not to take two science courses within the same semester.**
6. Take all required prerequisite courses for admission as described in the CNP information packet available at http://www.vw.vccs.edu/health/nursehome.
7. Have a minimum curricular **GPA of a 2.5.**
8. Take the approved Entrance Test (HESI–with a score or 50 or better). The CNP will also honor acceptable scores from NLN, NET, ATI, and HOBET. The test may be taken at any college that offers the exam. The following individuals are exempt from taking the HESI (NLN, NET, ATI, HOBET) exam:
   - LPNs who have a valid, unrestricted Virginia LPN license
   - Paramedics who hold a state or national paramedic certification
   - Individuals who hold a Baccalaureate or higher degree
9. Must have taken an Internet course and received a minimum of a "C."

Nursing – Commonwealth Nursing, continued –

Associate of Applied Science (156-C3)

10. Apply to Commonwealth Nursing Coordinator during application period.

Required general education courses A student may choose to take the required non-Nursing courses listed in the VCCS CNP curriculum before applying to the program. However, a minimum grade of "C" must be earned in each course. If a grade below a "C" is earned, the course must be retaken and a grade of "C "or better must be earned before the student can apply for admission to the program.

Essential CNP functions Students admitted to the VCCS CNP are expected to complete course requirements that prepare them to perform essential job functions as a Registered Nurse. These functions and/or skills are:

Speech Establish interpersonal rapport and communicate verbally and in writing with clients, physicians, peers, family members, and the health care team from a variety of social, emotional, cultural, and intellectual backgrounds.

Hearing Auditory acuity to note slight changes in the client's condition and to perceive and interpret various equipment signals and to use the telephone.

Vision Possess the visual acuity to read and distinguish colors, to read handwritten orders, and any other handwritten and printer data (i.e., medication records and scales), to chart content and provide for safety of clients' condition by clearly viewing monitors in order to correctly interpret data.

Mobility Walk or stand for prolonged periods over six to eight hours period. Must be able to bend, squat, or kneel, and assist in lifting or moving clients of all age groups and weights. Perform CPR; i.e., move above patient to compress chest and manually ventilate patient. Work with arms fully extended overhead.

Manual Dexterity Determine eye/hand coordination and manipulation of equipment such as syringes and IV infusion pumps.

Fine Motor Use hands for grasping, pushing, pulling, and fine manipulation and possess tactile ability sufficient for physical assessment and ability to differentiate change in sensation.

Mentation Maintain reality orientation for at least an eight-hour period of time. Assimilate and apply knowledge acquired through lecture discussions and readings. Comprehend and apply basic mathematical skills, e.g., factor labeling, use of conversion tables, calculation of drug dosages and solutions. Comprehend and apply abstract concepts from biological, sociological, and psychological sciences.

Smell Olfactory ability sufficient to monitor and assess health needs.

Writing Communicate and organize thoughts to prepare written documents that are correct in style, grammar, and mechanics.

Provisions for reasonable accommodations will be made in compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990.

Student responsibilities after acceptance into the program
Once you have been accepted into the VCCS CNP, you must:

1. Obtain a professional CPR certification prior to the beginning of the semester.
2. Submit a complete medical and dental examination and an immunizations form by the beginning of the semester.
3. Submit documentation of completion of the Hepatitis-B vaccination series (or be in the process of completing it) by the end of the semester in which you have been accepted. Students who do not wish to receive the Hepatitis-B vaccination must sign a declination statement. Students must also have completed all other required immunizations/titers prior to the beginning of the semester.
4. Be free of any mental or physical disabilities, or chemical dependency that could interfere with your ability to practice nursing. Our affiliated clinical agencies require that students submit to a urine drug screening. In addition, the Virginia Board of Nursing may choose to deny licensure to any applicant who has mental or physical disabilities, or chemical dependency conditions that could interfere with current ability to practice nursing. Applicants should confidentially discuss this information with the program head prior to pursuing program admission.
5. Be free of a criminal record. Our affiliated clinical agencies require that students undergo a criminal background check and reserve the right to deny students with criminal records from completing their clinicals at their site. In addition, the Virginia Board of Nursing may choose to deny licensure to any applicant who has ever been convicted of a felony or misdemeanor. Applicants should confidentially discuss this information with the VCCS CNP Coordinator prior to pursuing program admission.

Re-admission requirements for the Nursing Program Readmission to the VCCS CNP is for students who failed a nursing course or dropped out of the program before completion. Students requesting readmission to NUR 111 must satisfy all admissions criteria outlined above. Students seeking readmission to subsequent Nursing courses are subject to the program policy for accepting returning students. Acceptance of students applying for readmission are subject to space availability.

Nursing –Commonwealth Nursing, continued –

Associate of Applied Science (156-C3)

Transferring from another Nursing program All students transferring from another Nursing program must make an appointment with the VCCS CNP Coordinator. Transfer students who are qualified applicants are admitted based on space availability.

Program completion Students must graduate within five years of entering NUR 111.

Curriculum and Other Requirements

		Credits
Prerequisites (must be completed at time of application): General education credits completed with a grade of C or better: ENG 111, ITE EEE, BIO 141 (NAS 161), PSY 230, SDV 100 [Total of 14 credits]		
BIO 142	Human Anatomy and Physiology	4
ENG 112	College Composition II	3
HLT 250	General Pharmacology	3
HUM EEE	Humanities Electives	3
NUR 111	Fundamentals of Nursing	7
NUR 112	Advanced Fundamentals/Medical-Surgical Nursing	8
NUR 135	Drug Dosage Calculations	1
NUR 202	Community Nursing/Medical/Surgical Nursing	4
NUR 208	Acute Medical Surgical Nursing/Critical Care	5
NUR 226	Health Assessment	3
NUR 245	Maternal/Newborn Nursing	3
NUR 246	Parent/Child Nursing	3
NUR 247	Psychiatric/Mental Health Nursing	3
NUR 254	Dimensions of Professional Nursing	2
SOC 200	Principles of Sociology	3
Total credits Nursing and support courses		**55**
General Education Prerequisites required		**14**
Total Minimum Credits for Degree		**69**

Required Course Sequence

Fall	Spring	Summer
BIO 142/NAS 162	ENG 112	HLT 250
HUM EEE	NUR 112	NUR 247
NUR 111	NUR 226	
NUR 135		

Fall	Spring
NUR 202	NUR 208
NUR 245	NUR 254
NUR 246	
SOC 200	

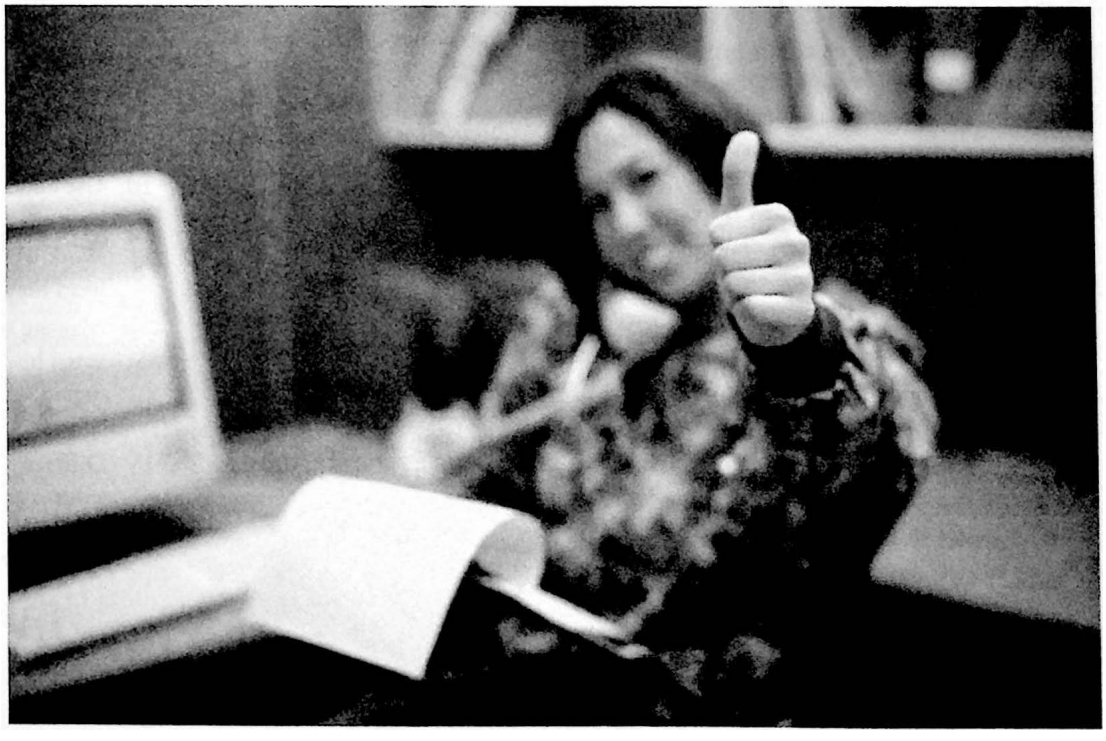
New Path to Nursing

The Commonwealth Nursing Program

Nontraditional program sponsored by the Virginia Community College System

All core Nursing courses offered online

Lab/clinical components occur in a rich variety of health care settings, including acute and long-term care facilities and community agencies



Practical Nursing – Certificate (157)

Also See: Nursing and Commonwealth Nursing

Purpose The Certificate program in Practical Nursing is designed to prepare students for a career as a Licensed Practical Nurse (LPN). The program will provide instruction leading to licensure as a practical nurse, preparing qualified students to meet the health care needs of the community within the scope of practice of practical nursing, as defined by the Virginia Board of Nursing. Graduates of this program earn a Certificate in Practical Nursing and will be eligible to take the NCLEX-PN examination.

Note: Individuals who have a felony or misdemeanor conviction may not be allowed to take the Practical Nursing licensing exam. The question of eligibility to take the PN licensing exam cannot be determined until application for licensure is received by the State Board of Nursing. If you wish to discuss this issue, please call the Practical Nursing Program Head at (540) 767-6119.

Approval This program is fully approved by the Virginia Board of Nursing.

Occupational objective Employment opportunities include nursing homes, hospices, public health and community nursing, medical offices and clinics, and acute and long-term care facilities.

Curriculum admission guidelines and procedure for the Class of 2008
Students enroll once a year in August. While applications are accepted at any time, to be eligible for admission in any year, the application packet must be completed by April 1. Applications may be accepted after this date on a space available basis.

Qualified applicants are considered without regard to race, color, gender, age, religion, disability, national origin, or other non-merit factors.

Admissions requirements

1. The applicant must be:
   a. a graduate from an accredited high school or
   b. holder of a GED (battery score average equal to or greater than 450).
2. Have completed the following high school prerequisites with a grade of "C" or better: one unit of Biology, one unit of Algebra I, and demonstrate proficiency in basic math and reading skills.
3. Have a cumulative scholastic or collegiate GPA of 2.25 based on at least 12 credit hours of college credit.
4. Complete required evaluative tests administered at Virginia Western.
5. Attend a personal interview demonstrating satisfactory oral and written communication skills, if required.

Recommended high school elective course is Chemistry.

Applicants interested in admission to the program must meet the above admissions requirements and have a completed application packet. A complete application packet includes: an application to the College; official transcripts from all colleges attended (if you have attended a community college in Virginia, these transcripts are not required); and official transcripts showing completion of a high school diploma, GED with scores, or official high school transcript if currently a rising senior; a 2008 Practical Nursing Program Application form. It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts (if you have attended a community college in Virginia, these transcripts are not required) in one envelope to the Health Technology Information Office with the Virginia Western application. Requests for application forms and information may be addressed to:

Ms. Rose Peters
Health Technology Advisor for Practical Nursing
Virginia Western Community College
P.O. Box 14007
Roanoke, VA 24038

Admission priorities When the applications are reviewed in late April, priority will be given to the applicants with a cumulative G.P.A. of 2.5 or higher who have the strongest academic record, and who have either already completed all high school prerequisites or anticipate completion of prerequisites by the end of summer 2008.

Essential practical nursing program functions To successfully complete the clinical component of the program, the student must be able to perform all of the essential functions of a clinical nurse:

1. Communicate satisfactorily with clients, physicians, peers, family members, and the health care team.
2. See and hear adequately to note slight changes in the client's condition.
3. Hear adequately to perceive and interpret various equipment signals.
4. See adequately to read monitors in order to correctly interpret data on monitor.
5. Stand and/or walk six to eight hours/day.
6. Walk rapidly for a prolonged period from one area to another.
7. Bend or squat frequently.
8. Assist in lifting or moving clients of all age groups and weights.
9. Demonstrate adequate eye/hand coordination for dexterity in manipulation of equipment.
10. Use hands for grasping, pushing, pulling, and fine manipulation.
11. Work with arms fully extended overhead for short periods.
12. Manage care of a client in an elevated hospital bed or stretcher, including one-man CPR when necessary.
13. Differentiate the color spectrum for color coding of charts and monitoring equipment.

Practical Nursing, continued – Certificate (157)

14. Possess the visual acuity to correctly read handwritten orders, medication records, chart contents, and provide safety for clients and visitors.

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

Clinical environment The student should realize that student nurses are, by nature of the profession, exposed regularly to highly stressful and demanding situations, infectious diseases, combative and difficult clients, and organizational and time pressures in a variety of client care settings.

Student responsibilities after acceptance into the program

1. All students admitted to the Practical Nursing program must attend orientation, register for all classes, and pay tuition prior to August 1. Final admission is contingent upon a satisfactory medical examination. Results must be returned to the Practical Nursing Program Head 30 days before fall classes begin. This medical examination must include evidence of rubella (German measles) screening and/or vaccine, tuberculin skin test (or chest x-ray), and Hepatitis B vaccination.
2. The student is responsible for transportation to and from agencies utilized for clinical experience and the purchase of student uniforms and accessories. Malpractice insurance coverage is required. Insurance is available for purchase after admission to the program. This policy is non-refundable.

Curriculum and Other Requirements		Credits
ENG 111	College Composition I	3
ITE 102	Computers and Information Systems	1
PNE 116	Normal Nutrition	1
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 and Psychiatric Nursing	2
PNE 174	Applied Pharmacology for Practical Nurses	2
PNE 181	Clinical Experience I	5
PNE 182	Clinical Experience II	5
PNE 195	Topics in Practical Nursing	5
SDV 100[2]	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking (or SPD 105)	3
Total Minimum Credits for Certificate		**49**

[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.

Required Course Sequence*

Fall	Spring
ENG 111	PNE 142
PNE 116	PNE 156
PNE 120	PNE 174
PNE 141	PNE 195
PNE 145	
PNE 155	
SDV 100 or SDV108	

Fall	Spring
ITE 102	PNE 135
PNE 158	PNE 182
PNE 181	
SPD 100	

* Support courses (non-PNE courses) may be taken prior to entry.

Practical Nursing, continued – Certificate (157)

Curriculum and Other Requirements

Credits

3. Drug and alcohol screening is required prior to rotating through certain clinical education settings. Positive drug and alcohol screening tests will jeopardize continuance in the program. The cost of the tests is the responsibility of the student.
4. A criminal background check is required prior to rotating through certain clinical educational settings. A positive criminal background check will jeopardize continuance in the program. The cost of the background check is the responsibility of the student.
5. Verification of current CPR certification will be required prior to the beginning of classes and must be kept current through enrollment in the program.

Retention Policies A complete statement of these policies is contained in the Practical Nursing Program Handbook, which is provided upon admission to the program. Successful completion of the program requires the student to maintain a grade of "C" or better in all practical nursing courses and a satisfactory evaluation in all clinical components.

Office Assistant – Career Studies Certificate (085)

Purpose This program is designed to prepare students to perform entry-level office functions. Examples of these functions include the creation and editing of the various types of business documents including letters, memos, reports, spreadsheets, and graphical presentations. In addition, students are prepared to create and maintain an electronic database.

Curriculum admission guidelines

Students must be admitted to Virginia Western and have a high school diploma or GED. Students must take AST 101 or type 35 wpm on a Keyboarding Proficiency Test.

Occupational objectives Word processor or related office occupations.

Curriculum and Other Requirements

		Credits
AST 102[1]	Keyboarding II	3
AST 107	Editing/Proofreading Skills	3
AST 113[2]	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Microsoft® Windows	1
AST 141	Word Processing I (Microsoft® Word)	3
AST 154	Introduction to Voice Recognition Software	1
AST 205[3]	Business Communications	3
AST 232	Microcomputer Office Applications	3
AST 238	Advanced Word Processing	3
E	AST Elective	3
Total Minimum Credits for Certificate		**24**

[1] Prerequisite: AST 101 or 35 wpm on Keyboarding Proficiency Test. Students with previous instruction in document formatting who can type at least 45 wpm with no more than 5 errors on a 5-minute timed writing may substitute an AST elective. Co-requisite: AST 113.

[2] Students who can type at least 45 wpm with no more than 5 errors on a 5-minute timed writing may substitute an elective.

[3] Prerequisites: AST 114 or AST 101 or equivalent and ENG 111 or AST 107.

Suggested Course Sequence

Fall	Spring
AST 102 (or AST Elective)	AST 205
AST 107	AST 232
AST 113 (or Elective)	AST 238
AST 140 (or Elective)	AST Elective
AST 141	
AST 154	

Office Technology – Career Studies Certificate (005)

Purpose This curriculum is designed for people who wish to refine existing skills in order to re-enter the work force or prepare themselves for a new position in office technology.

Curriculum admission guidelines
Student must meet the general requirements for admission to the College. Prerequisites: Typing speed of 45 wpm or appropriate keyboarding courses. Developmental courses may be recommended for students with deficiencies in English.

Curriculum and Other Requirements

		Credits
AST 107	Editing/Proofreading Skills	3
AST 140	Introduction to Microsoft® Windows	1
AST 141	Word Processing I (Microsoft® Word)	3
AST 205[2]	Business Communications	3
AST 232	Microcomputer Office Applications	3
AST 236	Specialized Software Applications	3
AST 238	Advanced Word Processing	3
AST 240[1]	Machine Transcription	3
AST 243-244	Office Administration I-II	6
Total Minimum Credits for Certificate		**28**

[1] Prerequisites: AST 102 and AST 107.

[2] Prerequisites: AST 114 or AST 101 or equivalent and ENG 111 or AST 107.

Suggested Course Sequence

Fall	Spring
AST 107	AST 232
AST 140	AST 236
AST 141	AST 238
AST 243	AST 244
Fall	
AST 205	
AST 240	

Paralegal Studies – Associate of Applied Science Degree (260)

Purpose The Paralegal Studies curriculum is designed to provide an individual working under the direction and supervision of a lawyer with a sufficient level of knowledge, understanding, and proficiency to perform tasks in meeting the needs of clients. A paralegal will have a basic understanding of the general process of American law and will have the knowledge and proficiency to perform specific tasks under the supervision of a lawyer in the fields of criminal and civil law.

Occupational objectives Include employment in public and private sectors, both individual and corporate, law-related activities, organizations, and agencies.

Curriculum admissions guidelines
Proficiency in high school English and completion of high school or college mathematics equivalent to Algebra I, Geometry and Algebra II.

Curriculum and Other Requirements

		Credits
ACC 211	Principles of Accounting I	3
ACC 213	Principles of Accounting Lab I	1
ENG 111	College Composition I	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Introduction Computer Applications and Concepts	3
LGL 110	Introduction to Law and the Legal Assistant	3
LGL 115	Real Estate Law for Legal Assistants	3
LGL 117	Family Law	3
LGL 125	Legal Research	3
LGL 126[3]	Legal Writing	3
LGL 200	Ethics for the Legal Assistant	1
LGL 216[4]	Trial Preparation and Discovery Practice	3
LGL 225	Estate Planning and Probate	3
LGL 230	Legal Transactions	3
LGL 235	Legal Aspects of Business Organizations	3
MTH 120	Introduction to Mathematics	3
PSY 120	Human Relations	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 105	Oral Communications	3
E	Legal Assisting Elective	9
E[2]	Social Science Elective	3
E[2]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**65**

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

[2] Humanities/Fine Arts and Social Science electives must be chosen from the "Approved List of Transfer Courses" on page 50.

[3] Prerequisite: ENG 111 or instructor permission.

[4] Prerequisites: LGL 110 and LGL 125 or instructor permission.

Suggested Course Sequence

Fall	Spring
ACC 211	HLT/PED
ACC 213	LGL 125
ENG 111	LGL 126
MTH 120	PSY 120
LGL 110	SPD 105
ITE 115	Legal Assisting Elective
SDV 100 or SDV 108	

Fall	Spring
LGL 115	LGL 216
LGL 117	LGL 235
LGL 200	Humanities/Fine Arts Elective
LGL 225	Legal Assisting Elective
LGL 230	Legal Assisting Elective
Social Science Elective	

Pharmacy Technician – Career Studies Certificate (084)

Purpose The Pharmacy Technician program is designed to prepare students to assist and support licensed pharmacists in providing health care and medications to patients. Students will obtain a broad knowledge of pharmacy practice and be skilled in the techniques required to order, stock, package, prepare, and dispense medications under the supervision of a licensed pharmacist. This curriculum has been approved by the Virginia Board of Pharmacy to meet the training requirements necessary for pharmacy technician registration.

Note: Individuals who have any felony convictions or charges pending, or any crime involving moral turpitude, or a violation of any federal, state, or local drug law may not be allowed to take the Pharmacy Technical licensing exam. The question of eligibility to take the Pharmacy Technician licensing exam cannot be determined until application for licensure is received by the Virginia Board of Pharmacy. If you wish to discuss this issue, please call (540) 767-6120.

Occupational objectives Pharmacy technicians work in hospital, retail, home health care, nursing home, clinic, nuclear medicine, and mail order prescription pharmacies. Pharmacy technicians have been employed with medical insurance, medical computer software, drug manufacturing, drug wholesale, and food processing companies, and as instructors in pharmacy technician training programs. Currently, hospital, home health care, and retail pharmacies hire the majority of technicians.

Admission requirements General college curricular admission.

Curriculum and Other Requirements

		Credits
HLT 106	First Aid and Safety	2
HLT 143	Medical Terminology I	3
HLT 250	General Pharmacology	3
HLT 261[1]	Basic Pharmacy I	3
HLT 263	Basic Pharmacy I Lab	1
HLT 262	Basic Pharmacy II	3
HLT 264	Basic Pharmacy II Lab	1
HLT 190	Coordinated Internship in Health (Retail Pharmacy)	3
HLT 190	Coordinated Internship in Health (Institutional Pharmacy)	3
ITE 102	Computer and Information Systems	1
PSY 120	Human Relations	3
Total Minimum Credits for Certificate		**26**

Suggested Course Sequence

Fall	Spring
HLT 106	HLT 262
HLT 143	HLT 264
HLT 250	HLT 190
HLT 261	HLT 190
HLT 263	PSY 120
ITE 102	

Education pays

Pharmacy Technician...

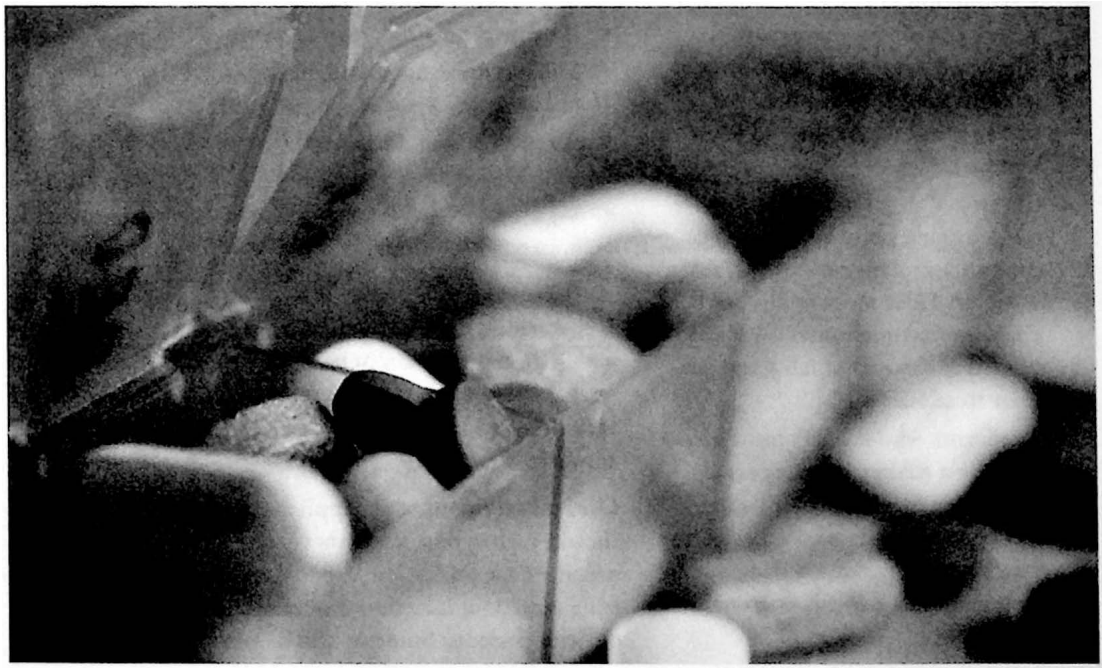
Virginia average starting salary: $17,000[1]

Virginia median salary: $22,700[1]

Job opportunities very favorable; anticipated increase in demand of 27+% from 2004 to 2014[2]

[1] Source: America's Career InfoNet>Occupation Profile>Pharmacy Technician>Virginia (2005)

[2] Source: U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook*



Radiation Oncology – Certificate (112)

Purpose The Radiation Oncology curriculum is designed to prepare selected students to qualify as contributing members of the allied health care team who provide a variety of diagnostic and therapeutic services under the supervision of qualified professionals. Upon successful completion of the program, graduates will be eligible to apply to take the American Registry of Radiologic Technologists (ARRT) registry examination leading to certification as a registered Radiation Therapist, RT-T.

Accreditation status The program is accredited by the Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Chicago, IL 60606. Phone (312) 704-5300.

Occupational objectives Graduates may apply for employment in private offices, hospitals, cancer centers, education, management, government agencies, and marketing and research.

Curriculum admission guidelines

1. High school diploma or equivalent.
2. Completion of two units of high school or college Laboratory Science from the following: Biology, Chemistry, or Physics with a "C" or better in each by the end of spring semester.
3. Completion of three units of high school or college mathematics—Algebra I, Algebra II and Geometry or equivalent—with a grade of "C" or better in each by the end of spring semester.
4. Current high school or cumulative college grade point average 2.5 or above. Cumulative college GPA is based on 12 or more credit hours in a 12-month timeframe. GPA is calculated at the end of fall semester prior to admission.
5. Applicants who are RTs must be certified by a nationally-recognized Radiologic Science credentialing agency. Applicants who are currently enrolled in an accredited Radiography program must submit current transcripts demonstrating good academic standing.
6. Other heath care providers from nationally accredited agencies and other individuals meeting admissions criteria will also be considered for admission.
7. Due to the nature of the patient population, the student should demonstrate maturity and a desire to work with cancer patients.
8. Due to the nature of the curriculum, applicants should have a strong background in mathematics and science.

Essential program functions To successfully complete the clinical component of the Radiation Oncology program, the student must be able to perform certain tasks requiring specific physical abilities. The candidate must be able to perform all of the following essential functions of a Radiation Therapist:

- Communicate satisfactorily with the patients, physicians, peers, and ancillary staff.
- See and hear adequately to note slight changes in patient condition.
- Hear adequately to perceive and interpret various equipment signals.
- See adequately to read emergency monitor data.
- Work with arms fully extended overhead.
- Lift and move 50 pounds at waist level or below waist level.
- Stand in place for extended periods of time.
- Walk rapidly for a prolonged period from one area to another (20–100 feet) carrying up to 25 lbs.

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

Clinical environment Applicants should realize that students will be, by nature of the profession, exposed to ionizing radiation, infectious diseases, and difficult patients. Students will be exposed to stressful and demanding situations, as well as organizational and time pressures in the clinical setting.

Admission procedure Upon completing an application to the College and a 2008 Radiation Oncology Application, students seeking admission to the Radiation Oncology program must have official transcripts from all schools and colleges attended forwarded to the Health Technology Information Office, including transcripts showing completion of a high school diploma or GED.

It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts (if you have attended a community college in Virginia these transcripts are not necessary) in one envelope to the Virginia Western Health Technology Information Office with the Virginia Western application.

In addition, applicants need to submit a copy of their professional licensure or certification, if applicable, and two letters of recommendation from employers or professors. These letters should be mailed to the attention of the Health Technology Information Office at Virginia Western, P.O. Box 14007, Roanoke, VA 24038.

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

Applicants must see the Health Technology Information Specialist for information, evaluation, and advising regarding the program. Early application is advisable due to constraints in the number of clinical positions available.

Upon receipt of the qualified student's completed file, the applicant will be contacted for an interview appointment during the spring semester. Early application is encouraged for advising purposes.

Radiation Oncology, continued – Certificate (112)

Applicants whose credentials are completed by April 1 will be considered by the Radiation Oncology Admissions Committee.

Applicants will be notified in writing of the action taken by the committee. If the number of qualified applicants falls below the maximum enrollment, the application deadline may be extended.

Readmission Students who have withdrawn for any reason from the Radiation Oncology program are required to petition the Program Director for readmission by March 1 for the fall semester and by July 1 for the spring semester. Readmission is not guaranteed.

Student responsibilities

- 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.
- The student is responsible for transportation to and from agencies utilized for clinical experience and the purchase of student uniforms and accessories. Malpractice insurance coverage is required. Insurance is available for purchase after admission to the program. This policy is non-refundable.
- Drug and alcohol screening is required prior to rotating through certain clinical education settings. Positive drug and alcohol screening tests will jeopardize continuance in the program. The cost of the tests is the responsibility of the student.
- Verification of current CPR certification will be required prior to the beginning of classes and must be kept current through enrollment in the program.

Curriculum and Other Requirements

		Credits
ENG 111	College Composition I	3
ITE 102	Computers and Information Systems	1
MTH 163	Pre-Calculus I	3
ROC 110[1]	Introduction to Radiation Oncology	2
ROC 120	Radiation Oncology/Pathology I	3
ROC 121	Radiation Oncology/Pathology II	3
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 231	Clinical Clerkship III	5
ROC 232	Clinical Clerkship IV	5
ROC 241	Therapy Physics II	2
ROC 242	Clinical Radiobiology	3
ROC 243	Dosimetry	2
ROC 244	Professional Seminar	1
SDV 100	College Success Skills (or SDV 108)	1
Total Minimum Credits for Degree		**50**

[1] Health and wellness are an integral part of the Radiation Oncology curriculum.

Required Course Sequence*

Fall	Spring	Summer
ENG 111	ITE 102	ROC 231
MTH 163	ROC 121	
ROC 110	ROC 132	
ROC 120	ROC 141	
ROC 131	ROC 145	
ROC 142	ROC 151	
SDV 100 or SDV 108		

Fall

ROC 232
ROC 241
ROC 242
ROC 243
ROC 244

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

Note: Completion of HLT 143 (Medical Terminology), BIO 141 (Anatomy and Physiology I), BIO 142 (Anatomy and Physiology II) within five years prior to beginning the program is strongly recommended.

Radiation Oncology, continued – Certificate (112)

	Curriculum and Other Requirements	Credits
Retention policies Successful completion of the program requires students to maintain a "C" or better in all radiation oncology courses and MTH 163. A complete statement of the above policies is outlined in the Radiation Oncology Student Handbook, which is available in the Health Technology Division Office.		

Education pays

Radiation Oncology...

Virginia average starting salary: $38,700[1]

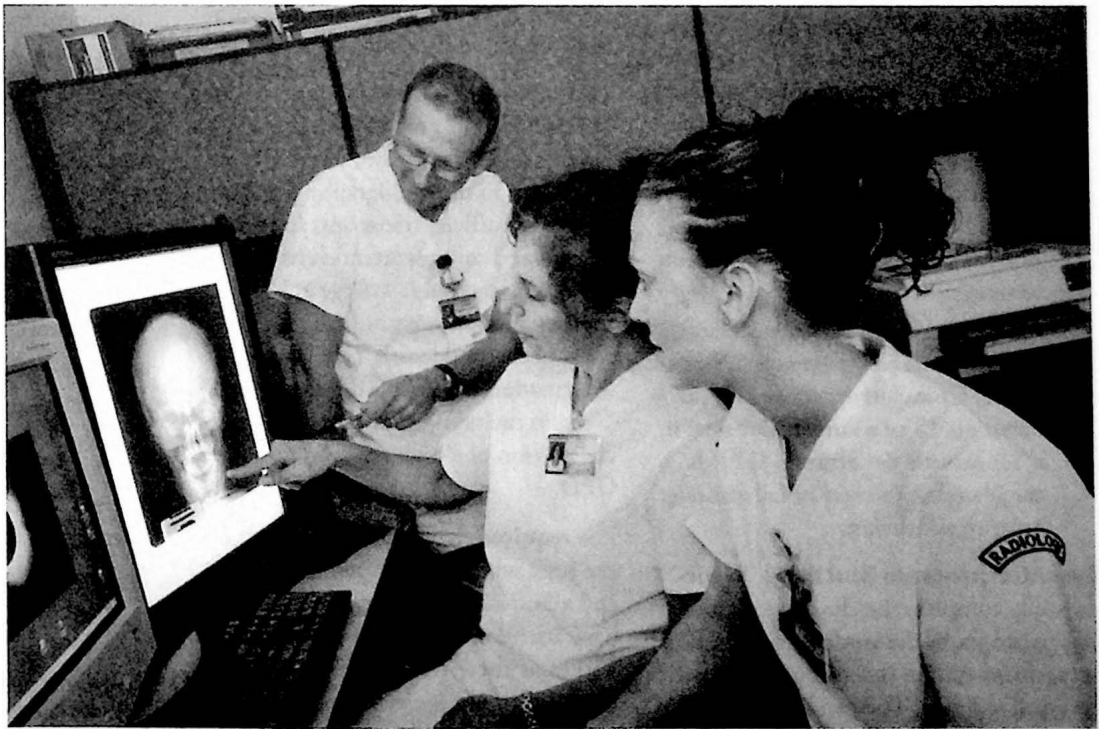
Virginia median salary: $57,000[1]

Job prospects expected to be better than average[2]

Anticipated increase in demand of 18% to 26% from 2004 to 2014[2]

[1] Source: America's Career InfoNet>Occupation Profile>Radiation Therapists>Virginia (2005)

[2] Source: U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook*



Radiography – Associate of Applied Science (172)

Purpose The curriculum is designed to prepare selected students to qualify as contributing members of the allied health team who care for patients under the supervision of qualified physicians. Upon completion of the curriculum, which includes a one-semester internship, the student is eligible to apply to take the National Registry Examination leading to certification as a Registered Radiographer, RT-R. Successful completion of the program and certifying exam will qualify a graduate to gain employment as a radiographer.

Accreditation status The curriculum has been approved by the authority of the Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-2901; (312) 704-5300.

Occupational objectives Graduates may apply for employment in hospitals, education, industry, clinics, government agencies, physician's offices, and emergency care centers.

Curriculum admission guidelines

1. High school diploma or equivalent.
2. Completion of two units of high school or college Laboratory Science from the following: Biology, Chemistry, or Physics with a "C" or better in each by the end of spring semester.
3. Completion of three units of high school or college mathematics—Algebra I, Algebra II, and Geometry or equivalent—with a grade of "C" or better in each by the end of spring semester.
4. Current high school or cumulative college grade point average 2.5 or above. Cumulative college GPA is based on 12 or more credit hours in a 12-month timeframe. GPA is calculated at the end of fall semester prior to admission.

Essential program functions To successfully complete the clinical component of the program, the student must be able to perform certain tasks requiring specific physical abilities. The candidate must be able to perform all of the following essential functions of a Clinical Radiographer:

1. Communicate satisfactorily with the patients, physicians, peers, and ancillary staff.
2. See and hear adequately to note slight changes in patient condition.
3. Hear adequately to perceive and interpret various equipment signals.
4. See adequately to read emergency monitor data.
5. Work with arms fully extended overhead.
6. Lift and move 50 pounds at waist level or below waist level.
7. Stand in place for extended periods of time (30 minutes to 3 hours).
8. Walk rapidly for a prolonged period from one area to another (20–100 feet) carrying up to 25 pounds.

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

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

Admission procedure Upon completing an application to the College and a 2008 Radiography Application, students seeking admission to the radiography program must have official transcripts from all schools and colleges attended (if you have attended a community college in Virginia, these transcripts are not required) forwarded to the Health Technology Information Specialist's office at Virginia Western including transcripts showing completion of a high school diploma or GED.

It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts (if you have attended a community college in Virginia, these transcripts are not required) in one envelope to the Virginia Western Health Technology Information Office with the Virginia Western application. Applicants are encouraged to see the Health Technology Information Specialist for information, evaluation, and advising regarding the program. Early application is encouraged.

Upon receipt of the qualified student's completed file by the Program Director, the applicant will be contacted for an interview. Interviews typically begin in February for the fall program. Applicants whose credentials are completed by February 15 will be considered by the Radiography Admissions Committee.

Applicants will be notified in writing of the action taken by the committee in May. If the number of qualified applicants falls below the maximum enrollment, the application deadline may be extended.

Advanced placement Advanced placement is available for Radiographers who wish to pursue an Associate Degree and for transfer students from other Radiography programs. Transfer students must furnish their transcripts, program curriculum, and a letter of reference from the Program Director for consideration into the Radiography program. All inquiries for advanced placement must be directed to the Radiography Program Director and will be considered on an individual basis.

Readmission Students who have withdrawn from the Radiography program are required to petition the Program Director at least one month prior to the beginning of the semester they wish to be considered for readmission.

Student responsibilities

1. All students admitted to the Radiography program must attend Radiography orientation, register for all classes, and pay tuition prior to August 1.
2. Final admission is contingent upon a satisfactory medical examination. Results must be returned to the Radiography Program Director 30 days before fall classes begin.

Radiography, continued – Associate of Applied Science (172)

This health history must include evidence of rubella (German measles) screening and/or vaccine, tuberculin skin test (or chest x-ray), Hepatitis B vaccination, and routine CBC.

3. The student is responsible for the purchase of uniforms and transportation to and from agencies utilized for clinical experience.
4. The purchase of liability insurance is required after admission to the program. This policy, however, is non-refundable. Documentation must be submitted to Program Director 30 days before fall classes begin.
5. Drug and alcohol screening is required prior to rotating through certain clinical education settings. Positive drug and alcohol screening tests will jeopardize continuance in the program. Cost of the tests are the responsibility of the student.
6. Verification of current CPR certification will be required prior to the beginning of Radiography classes and must be kept current.
7. The student is responsible for paying a $20 film badge fee each semester.

Retention Policies Successful completion of the program requires the student to maintain a "C" or better in all Radiography and clinical courses, NAS 171 and HLT 143. A complete statement of all the above policies is outlined in the Radiography Handbook, which is available upon admission into the program. Students must maintain a 2.0 or better GPA to remain in the program.

Upon successful completion of the Radiography program, students can make application to a wide variety of imaging modality programs: Ultrasonography, Radiation Therapy, Vascular-Intervention, Nuclear Medicine or Bachelor's Degree programs.

Information and applications to modality programs are available through the Radiography Program Director's office.

Curriculum and Other Requirements

		Credits
ENG 111[4]	College Composition I	3
HLT 143[1]	Medical Terminology I	3
NAS 171	Human Anatomy and Physiology I	4
RAD 106[3]	Introduction to Radiologic Science	2
RAD 111-112[3]	Radiologic Science I-II	8
RAD 121[1]	Radiographic Procedures I	4
RAD 125	Patient Care Procedures	3
RAD 131-132	Elementary Clinical Procedures I-II	6
RAD 190	Coordinated Practice	3
RAD 205	Radiation Protection and Radiobiology	3
RAD 215	Correlated Radiographic Theory	2
RAD 221[1]	Radiographic Procedures II	4
RAD 231-232	Advanced Clinical Procedures I-II	10
RAD 240	Radiographic Pathology	3
RAD 290	Coordinated Internship	4
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[2]	Social Science Elective	3
E[2]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**72**

[1] Health and wellness are an integral part of the Radiography curriculum.

[2] Social Science and Humanities/Fine Arts Electives must be selected from the "Approved List of Transfer Courses" on page 50

[3] Includes instruction in fundamental mathematics skills.

[4] ENG 111-112 (College Composition I-II) with SPD 100 is recommended for students planning to transfer to a baccalaureate degree program.

Required Course Sequence*

Fall	Spring	Summer
HLT 143	RAD 106	RAD 190
NAS 171	RAD 125	RAD 205
RAD 121	RAD 132	
RAD 131	RAD 221	
SDV 100 or SDV 108	Social Science Elective	

Fall	Spring	Summer
ENG 111	RAD 112	RAD 215
RAD 111	RAD 232	RAD 290
RAD 231	SPD 100	
RAD 240	Humanities/Fine Arts Electives	

* Support courses (non-RAD courses) may be taken prior to entry.

Science – Associate of Science (880)

Purpose The AS degree in Science contains five curricular options: Science, Specialization in Computer Science, Specialization in Health Science, Specialization in Integrated Environmental Studies, Specialization in Mathematics, and Specialization in Medical Technology. All options are designed to transfer to a four-year college or university for students who wish to complete a Baccalaureate Degree in a pre-professional or scientific program.

Each option, in combination with available science electives, allows flexibility, provided minimum state standards are satisfied, for students preparing for majors in the sciences, mathematics, or computer science. Some graduation requirements can be adjusted when changes are needed to comply with curriculum requirements at the transfer institution. For example, with departmental approval, pharmacy students may take less mathematics credits and more science credits than those shown in the Science curriculum. Students are urged to acquaint themselves with requirements of the major department at the college/university where transfer is contemplated and consult with their faculty advisor in planning their program and selecting electives.

Curriculum admission guidelines

Four units of English; three units of college preparatory mathematics (Algebra I, Algebra II, and Geometry) for Science degree (four units for Computer Science specialization); one unit of Laboratory Science; and one unit of Social Science. Developmental courses may be recommended for students with deficiencies in English and Mathematics.

Many Virginia public and private colleges/universities now have articulation agreements that permit community college students who earn an associate degree to transfer with junior status. Requirements vary by institution. Students should refer to the on-line transfer guides at the institution of their choice to select appropriate courses in the major to ensure transfer.

Curriculum and Other Requirements

		Credits
ENG 111-112	College Composition I-II	6
HIS 121	US History (or HIS 101)	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Introduction to Computer Applications and Concepts (or CSC 201)	3
MTH 163[7]	Pre-Calculus I (or MTH 175)	3
MTH 271[7]	Applied Calculus I (or MTH 176)	3
MTH 272[5]	Applied Calculus II (or MTH 241)	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[2]	Science Elective	3-4
E[2]	Science Elective with Lab	16
E[3]	Humanities/Fine Arts Elective	3
E[4]	Transfer Elective	5
E[6]	Social Science Elective	6
Total Minimum Credits for Degree		**60**

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

[2] Natural Science courses must be selected from the Biology, Chemistry, Geology, Natural Science, and Physics courses listed on page 50, "Approved List of Transfer Courses."

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

[4] Electives must be chosen from the "Approved List of Transfer Courses" on page 50.

[5] Students who complete MTH 175-176 and MTH 177-178 may substitute MTH 277 or an elective.

[6] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at Virginia Western that will satisfy the Social Science requirements at the four-year institution.

[7] Students taking MTH 175-176 should consider taking MTH 177-178 as electives.

Suggested Course Sequence

Fall
ENG 111
HLT/PED
ITE 115 or CSC 201
MTH 163 or MTH 175
SDV 100 or SDV 108
Science Elective with Lab

Spring
ENG 112
MTH 271 or MTH 176
Science Elective with Lab
Humanities/Fine Arts Elective
Transfer Elective

Fall
HIS 121 or HIS 101
MTH 272 or MTH 241
Science Elective with Lab
Social Science Elective
Transfer Elective

Spring
SPD 100
Science Elective
Science Elective with Lab
Social Science Elective

Science, continued – Associate of Science (880)

Science Courses with Lab (all are transfer courses)	Science Transfer Electives
BIO 101-102 General Biology I & II	BIO 215 Plant Life of Virginia
BIO 141-142 Anatomy & Physiology I & II	BIO 227 Animal Life of Virginia
CHM 111-112 College Chemistry I & II	BIO 270 General Ecology
CHM 241/245 Organic Chemistry I (lecture & lab)	BIO 271 Introduction to Ecological Systems
CHM 242/246 Organic Chemistry II (lecture & lab)	BIO 285 Biological Problems in Contemporary Society
GOL 105 Physical Geology	ENV 161 Introduction to Environmental Compliance
GOL 106 Historical Geology	ENV 162 Environmental Principles in Public Health
NAS 131-132 Astronomy I & II	
NAS 185 Microbiology	
PHY 201-202 General College Physics I & II	
PHY 241-242 University Physics I & II	

Students preparing for a major in **pre-medicine, pre-dentistry, pre-pharmacy,** or **pre-veterinary** should complete the curricular program in Science and select BIO 101-102 and CHM 111-112 to fulfill required 16 credits of Science Elective with Lab. It is strongly recommended that PHY 201-202 General College Physics be taken to fulfill the Science Elective and Transfer Elective requirements. Many pre-professional programs also require Organic Chemistry; this sequence is offered every other year in even years. Consultation with the transfer institution regarding science requirements for these programs is **strongly** advised.

Students preparing for a major in life science such as **agriculture, biology, nutrition, horticulture** or **science education** or a major in **natural** or **earth sciences** should complete the curricular program in Science and select two science sequences from BIO 101-102, CHM 111-112, GOL 105-106, NAS 131-132 to fulfill the required 16 credits of Science Elective with Lab. Consultation with the transfer institution and a faculty advisor to select the sequence and Science electives based on the major is **strongly** advised.

Students preparing for a major in **environmental science, ecology, or forestry** should pursue the Integrated Environmental Studies Specialization or follow the Science curriculum and select BIO 101-102 and CHM 111-112 to fulfill the required 16 credits of Science Elective with Lab; and BIO 215, 270, and 285 for the Science and transfer electives. Consultation with the transfer institution and a faculty advisor to select the sequence and Science electives based on the major is **strongly** advised.

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

Students preparing for a major in **computer science** should pursue the Specialization in Computer Science.

Students preparing for a major in a health field such as **Nursing or other allied health field** and who desires a BS degree, should pursue the Specialization in Health Sciences.

Science, continued – Associate of Science (880)

Purpose The Specialization in Computer Science is designed for students who plan to transfer to a four-year college or university and major in computer science.

Curricular needs are not the same at every school. Therefore, students should confer with their faculty advisor and the four-year institution where transfer is contemplated to identify the specific requirements for that institution. Students will need at least a 3.0 grade point average and must complete all of the requirements in the specialization to be considered at most institutions.

Students interested in applied computer science should also consider the information systems technology associates degree, which can be used for transfer to certain four-year institutions. See your faculty advisor for information.

Curriculum admission guidelines Four units of English; three units of college preparatory mathematics (Algebra I, Algebra II, and Geometry) for science degree (four units for Computer Science specialization); one unit of Laboratory Science; and one unit of Social Science. Developmental courses may be recommended for students with deficiencies in English and Mathematics

Curriculum and Other Requirements

Specialization in Computer Science (01)

		Credits
CSC 201-202	Computer Science I-II	8
ENG 111-112	College Composition I-II	6
HIS 101	History of Western Civilization (or HIS 121)	3
HLT/PED[1]	Health or Physical Education	2
MTH 175-176	Calculus of One Variable I-II	6
MTH 177	Introductory Linear Algebra	2
MTH 178	Topics in Analytic Geometry	2
MTH 241	Statistics I	3
MTH 277	Vector Calculus	4
PHY 241-242	University Physics I-II (or CHM 111-112)	8
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[2]	Social Science Elective	6
E[3]	Elective	3
E[4]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**60**

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

[2] Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at Virginia Western that will satisfy the Social Science requirements at the four-year institution.

[3] Electives must be chosen from the "Approved List of Transfer Courses" on page 50.

[4] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

Fall	Spring
CSC 201	CSC 202
ENG 111	ENG 112
HLT/PED	MTH 176
MTH 175	MTH 178
MTH 177	Social Science Elective
SDV 100 or SDV 108	
Social Science Elective	

Fall	Spring
HIS 101 or HIS 121	PHY 242 or CHM 112
MTH 241	SPD 100
MTH 277	Elective
PHY 241 or CHM 111	Humanities/Fine Arts Elective

Science, continued – Associate of Science (880)

Purpose The Specialization in Health Sciences is designed for students who plan to transfer to a four-year college or university and major in a health field. Curricular needs are not the same in every health field, so students should confer with their faculty advisor or counselor and check with the four-year institution that they plan to attend in order to identify specific requirements for the field that they are interested in pursuing.

As the result of a cooperative arrangement with Radford University, a special curricular option has been designed for students who want to transfer into Radford University's Baccalaureate Degree program in Nursing. Provided all courses are completed with a grade of "C" or above with a cumulative grade point average of 3.5 or higher, Radford University has agreed that Virginia Western graduates will be accepted into Radford University's upper division nursing degree program. If the cumulative grade point average at Virginia Western is less than 3.5 and greater than or equal to 2.5, admission into the upper division nursing degree program at Radford will be on a competitive basis and will be dependent upon the space available. The upper division courses can be completed at the Roanoke Higher Education Center, so it is possible to complete all of the Baccalaureate Degree Nursing requirements without leaving the Roanoke Valley.

Students who are preparing to attend a nursing program at a college other than Radford University should check that college's degree requirements to determine if substitutions in Virginia Western's course requirements should be requested.

Curriculum admissions requirements
Four units of English; one unit of high school or college biology; one unit of Social Science; and three units of college preparatory mathematics (Algebra I, Algebra II, Geometry). Developmental courses may be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements

		Credits
Specialization in Health Sciences (02)		
BIO 141-142	Human Anatomy and Physiology I-II	8
CHM 111-112	College Chemistry I-II	8
ENG 111-112	College Composition I-II	6
ENG 241	Survey of American Literature I (or ENG 243)	3
HIS 121	United States History I (or HIS 101)	3
HLT 230	Principles of Nutrition and Human Development	3
ITE 115	Intro Computer Applications and Concepts	3
MTH 151	Liberal Arts Mathematics I	3
MTH 152[1]	Liberal Arts Mathematics II (or MTH 157)	3
NAS 185	Microbiology	4
PLS 211	U.S. Government I (or ECO 201)	3
PSY 200	Principles of Psychology	3
PSY 230[2]	Developmental Psychology (or PSY 231)	3
SOC 200	Principles of Sociology	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
Total Minimum Credits for Degree		**60**

[1] Students interested in transferring to Radford University must take MTH 157.

[2] Students interested in transferring to Radford University must take PSY 235.

Suggested Course Sequence

Fall	Spring
CHM 111	CHM 112
ENG 111	ENG 112
HIS 121 or HIS 101	HLT 230
MTH 151	ITE 115
PSY 200	MTH 152 or MTH 157
SDV 100 or SDV 108	

Fall	Spring
BIO 141	BIO 142
ENG 241 or ENG 243	NAS 185
PLS 211or ECO 201	PSY 230 or PSY 231
SOC 200	SPD 100

Science, continued – Associate of Science (880)

Purpose The Specialization in Integrated Environmental Studies is designed for students seeking a variety of professional and/or technical goals in the sciences. The integrated nature of the curriculum and the core sequence of team-taught environmental and biology courses provide a synthesis of knowledge from various disciplines, use of technologic applications such as GIS and predictive modeling software, directed laboratory/field study experiences, and use of team building and problem-solving skills. Students will integrate knowledge from the sciences, mathematics, Social Sciences, and technology to develop skills and prepare for technical positions or for transfer to four-year institutions. Students preparing for transfer are urged to familiarize themselves with requirements of the major department at the college/university where transfer is contemplated, and consult with their faculty advisor.

Curriculum admission guidelines Four units of English; three units of college preparatory Mathematics (Algebra I, Algebra II, and Geometry); one unit of Laboratory Science; and one unit of Social Science. Developmental courses may be recommended for students with deficiencies in English and Mathematics.

Career opportunities Graduates may choose to transfer to college/universities offering Bachelor of Science Degrees in Environmental Science, Agricultural and Environmental Science, Ocean and Earth Science, or Integrated Science and Technology. Graduates who choose to pursue employment at the technical level may be employed as natural resource technicians, agricultural technicians, land resources technicians, or water management technicians.

Curriculum and Other Requirements

Specialization in Integrated Environmental Studies (05)

		Credits
BIO 101	General Biology I	4
BIO 271	Introduction to Ecological Systems	4
BIO 285	Biological Problems in Contemporary Society	3
CHM 111	College Chemistry I	4
ENG 111- 112	College Composition I-II	6
ENV 161	Introduction to Environmental Compliance	3
ENV 162	Environmental Principles in Public Health	3
ENV 221	Natural Resource Management	4
GEO 210	Cultural Geography	3
GOL 105	Physical Geology	4
HLT/PED[3]	Health or Physical Education	2
HUM 202[1]	Survey of Western Culture II	3
ITE 115	Intro Computer Applications and Concepts	3
MTH 157	Elementary Statistics	3
MTH 163	Precalculus I	3
PLS 211-212[2]	U.S. Government I-II	6
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
Total Minimum Credits for Degree		**62**

[1] Students who have completed two years of high school Spanish may substitute SPA 201 for HUM 202.

[2] ECO 201- 202may be taken in place of PLS 211-212.

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

Note: Students have the option to complete BIO 102 and CHM 112 in addition to the curriculum plan and meet transfer/articulation requirements for Science sequences. It is important to note that these will not be included with the Virginia Western curricular requirements.

Suggested Course Sequence

Fall	Spring
BIO 101	ENG 112
ENG 111	ENV 162
ENV 161	GEO 210
ITE 115	GOL 105
PLS 211	PLS 212
SDV 100 or SDV 108	

Fall	Spring
BIO 271	BIO 285
CHM 111	ENV 221
HUM 202	HLT/PED
MTH 157	MTH 163
SPD 100	

Science, continued – Associate of Science (880)

Purpose The Specialization in Mathematics is designed for students who plan to transfer to a four-year college or university and major in mathematics, mathematics education, or statistics. Students who complete the two-year AS degree will be prepared to begin junior-level mathematics courses at any college or university offering a mathematics degree. The program is also suitable for those students who are not sure what program they would like to complete at a four-year school, but know that two years of math will be required. Examples of such programs are physics, chemistry, engineering, and computer science.

Curriculum admissions guidelines Four units of English; four units of college preparatory mathematics (Algebra I, Algebra II, Geometry, and pre-calculus with Trigonometry); one unit of Laboratory Science; and one unit of Social Science.

Curriculum and Other Requirements

		Credits
Specialization in Mathematics (04)		
CHM 111-112	College Chemistry I-II	8
CSC 201	Computer Science I	4
ENG 111-112	College Composition I-II	6
HIS 121	United States History I (or HIS 101)	3
HLT/PED[1]	Health or Physical Education	2
MTH 175-176	Calculus of One Variable I-II	6
MTH 178	Topics in Analytic Geometry	2
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
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[2]	Social Science Elective	6
E[3]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**65**

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

[2] Social Science electives must be selected from the "Approved List of Transfer Courses." If the student is transferring to a four-year institution, the student should select the Social Science courses at Virginia Western that will satisfy the Social Science requirements at the four-year institution.

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50.

Suggested Course Sequence

Fall	Spring
CHM 111	CHM 112
CSC 201	ENG 112
ENG 111	HIS 121
HLT/PED	HLT/PED
MTH 175	MTH 176
SDV 100 or SDV 108	MTH 178
Fall	**Spring**
MTH 277	MTH 287
MTH 285	MTH 291
PHY 241	PHY 242
Humanities/Fine Arts Elective	SPD 100
Social Science Elective	Social Science Elective

Science, continued – Associate of Science (880)

Purpose The Specialization in Medical Technology is designed specifically for those students who plan to obtain an AS degree in Science from Virginia Western and then transfer to Radford University, Department of Biology to complete the upper division coursework required for the degree in Medical Technology through the articulation agreement in place between VWCC and RU. Students may elect to complete the Associate Degree on either a full time or part-time basis.

In order to meet the requirements of the articulation agreement, the following conditions must be met.

1. Students must fulfill all of the course and credit hour requirements of the curriculum plan for Pre-Medical Technology majors leading to the Associate of Science-Science Degree, with a minimum of 25% of the credits completed at VWCC. Comparable courses and credits transferred from another VCCS institution may be accepted to fulfill the Associate Degree requirements; transfer courses must be completed with a grade of "C" or better.
2. Students will sign a letter of intent at least one year prior to transfer, and will work with an assigned advisor at Radford University and VWCC to ensure that an appropriate curriculum map and plan for timely graduation is established.
3. In order to receive transfer credit at Radford University, all coursework must be complete with a grade of "C" or better. A minimum grade point average of 2.5 is required for admission to the Medical Technology program.

Curriculum admission guidelines Four units of English; three units of college preparatory Mathematics (Algebra I, Geometry and Algebra II) for Science degree (four units for Computer Science specialization); one unit of Laboratory Science; and one unit of Social Science. Developmental courses may be recommended for students with deficiencies in English and Mathematics.

Curriculum and Other Requirements

Specialization in Medical Technology (06)

		Credits
BIO 101	General Biology I	4
BIO 141-142	Anatomy and Physiology I-II	8
CHM 111-112	College Chemistry I-II	8
ECO 201	Principles of Macroeconomics	3
ENG 111-112	College Composition I-II	6
HIS 121-122	United States History I-II	6
HLT 230	Principles of Nutrition and Human Development	3
ITE 115	Intro Computer Applications and Concepts	3
MTH 157	Elementary Statistics	3
MTH 163	Pre-Calculus I	3
NAS 185	Microbiology	4
PHY 201	General College Physics I	4
SDV 108	College Survival Skills (or SDV 100)	1
SPD 100	Principles of Public Speaking	3
E[1]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**62**

[1] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50. To fulfill all of Radford's General Education requirements, students should take an additional 3 credit elective (RU General Education Area 8), selected from page 50 from the VWCC "Approved List of Transfer Courses."

Suggested Course Sequence

Fall	Spring
BIO 101	CHM 112
CHM 111	ECO 201
ENG 111	ENG112
ITE 115	MTH 163
MTH 157	SPD 100
SDV 108	
Fall	**Spring**
BIO 141	BIO 142
HIS 121	HIS 122
HLT 230	NAS 185
PHY 201	[1]Humanities Elective

Social Sciences – Associate of Science (882)

Purpose The curriculum is designed for students who plan to transfer to a four-year college or university and major in a field in the area of Social Sciences. The courses in the curriculum include the general education courses and introductory major courses that students typically take during the first two years at a four-year college or university when they are majoring in a field such as:

- anthropology
- economics
- history
- pre-law
- political science
- psychology
- sociology

A Social Science A.S. Degree with a Specialization in Education is also offered for students who want to prepare to teach at the elementary or secondary school level. When selecting electives and arranging their program of study, students should consult with their faculty advisors and check the specific requirements of the major department in the college or university where they plan to transfer.

Curriculum admission guidelines

Four units of English, three units of college preparatory Mathematics (Algebra I, Algebra II, Geometry), one unit of Laboratory Science, and one unit of Social Science. Developmental courses may be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements

		Credits
ECO 201	Principles of Macroeconomics (or ECO 202)	3
ENG 111-112	College Composition I-II	6
ENG 241-242	Survey of American Literature I-II (or ENG 243-244)	6
HIS 121-122	United States History I-II	6
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 151[6]	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 157	Elementary Statistics (or MTH 152 or MTH 271)	3
PSY 200	Principles of Psychology	3
SOC 200	Principles of Sociology	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
E[2]	Humanities/Fine Arts Elective	6
E[3]	Natural Science Sequence	8
E[4]	Social Science Elective	3
E[5]	Elective	3
Total Minimum Credits for Degree		**62**

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

[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 50. A two-semester sequence of the same course is recommended for transfer to most four-year institutions.

[3] A two-semester sequence selected from BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202 must be completed.

[4] Social Science Electives must be selected from the "Approved List of Transfer Courses" on page 50. If the student is transferring to a four-year institution, the student should select the Social Science courses at Virginia Western that will satisfy the Social Science requirements at the four-year institution.

[5] Electives must be selected from the "Approved List of Transfer Courses" on page 50.

[6] Radford University no longer accepts the MTH 151-152 sequence. They require either MTH 151 and MTH 157 or MTH 163 and MTH 157. Students are urged to check the mathematics requirement of the four-year college or university to which they plan to transfer to determine the proper mathematics courses to be taken at Virginia Western.

Suggested Course Sequence

Fall
ENG 111
HIS 121
MTH 151 or MTH 163
SDV 100 or SDV 108
Humanities/Fine Arts Elective
Natural Science Sequence

Spring
ENG 112
HIS 122
MTH 157 or MTH 152 or MTH 271
Humanities/Fine Arts Elective
Natural Science Sequence

Fall
ECO 201 or ECO 202
ENG 241 or ENG 243
ITE 115
PSY 200
Elective

Spring
ENG 242 or ENG 244
HLT/PED
SOC 200
SPD 100
Social Science Elective

Students preparing for future careers in mental health, psychology, or social work should contact immediately Richard Gaynor at (540) 857-7288 or Dr. Annemarie Carroll at (540) 857-6178

Social Sciences, continued – Associate of Science (882)

Purpose While this is a Social Sciences degree, the Specialization in Education is designed for persons who plan to transfer to a four-year college or university to prepare for a teaching career in Virginia at the elementary or secondary level. Students who wish to be teachers in Virginia must major in a content area such as history, English, mathematics, science, or interdisciplinary studies. Although the students will be required to complete several special professional education courses at the senior institution, they must major in an area besides education.

The following program of study is specifically designed for students transferring to either Radford University or Roanoke College that are preparing to teach at the elementary school level. Students who plan to transfer elsewhere or to teach at a different grade level should consult their faculty advisor and check senior institution requirements when planning their program of study and electives. Students who are considering certification in Early Childhood Education should contact the Early Childhood Program Head, Kim Gregory, at (540) 857-7270 for guidance. In order to prepare for junior class standing at a four-year college or university, the student usually must complete a program at the community college that is comparable in length and course content to the first two years of the program at the four-year institution.

PRAXIS exams To teach in Virginia, students must pass the PRAXIS I and PRAXIS II examinations, which have replaced the National Teachers Exam. The PRAXIS I exam measures basic skills in reading, writing, and mathematics. It is used by some four-year colleges and universities as an admissions requirement into their teacher education programs. Virginia Western education students will be expected to take the PRAXIS I exam by the end of their freshman year. The PRAXIS II exam measures content knowledge in the student's major field and is usually taken in the senior year at the four-year college or university.

Curriculum and Other Requirements

Specialization in Education (01)

		Credits
ART 101	Art Appreciation I	3
BIO 101-102[1]	General Biology I-II	8
EDU 100	Introduction to Education	1
ENG 111-112	College Composition I-II	6
ENG 241	Survey of American Literature I	3
GEO 210	Cultural Geography	3
HIS 101-102[3]	History of Western Civilization I-II	6
HIS 121-122[2]	United States History I-II	6
HLT/PED[5e]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 151[6]	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 157	Elementary Statistics (or MTH 152 or MTH 271)	3
MUS 121[4]	Music Appreciation I	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
SPD 100	Principles of Public Speaking	3
Total Minimum Credits for Degree		**63**

[1] Students transferring to Roanoke College may substitute CHM 111-112 or GOL 105-106 for BIO 101-102.

[2] Students transferring to Roanoke College should take PSY 235 instead of HIS 122.

[3] Students transferring to Roanoke College should take two semesters of a foreign languagee instead of HIS 101 and HIS 102.

[4] Students transferring to Roanoke College should take PSY 236 instead of MUS 121.e

[5] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Consulte 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. Students transferring to Roanoke College should take two different PED courses instead of HLT 110.

[6] Radford University no longer accepts the MTH 151-152 sequence. They require eithere MTH 151 and MTH 157 or MTH 163 and MTH 157. Students are urged to check the mathematics requirement of the four-year college or university to which they plan to transfer to determine the proper mathematics courses to be taken at Virginia Western.

Suggested Course Sequence

Fall	Spring
BIO 101	BIO 102
ENG 111	EDU 100
HIS 121	ENG 112
MTH 151 or MTH 163	HIS 122
PSY 200	MTH 157 or MTH 152 or MTH 271
SDV 100 or SDV 108	PHI 101
Fall	**Spring**
ENG 241	ART 101
HIS 101	HIS 102
ITE 115	HLT/PED
GEO 210	PLS 211 or ECO 201
MUS 121	SPD 100

Students preparing for future careers in mental health, psychology, or social work should contact immediately Richard Gaynor at (540) 857-7288 or Dr. Annemarie Carroll at (540) 857-6178

Social Sciences, continued – Associate of Science (882)

Purpose The curriculum is designed for students who plan to transfer to a four-year college or university and major in fire science and for those interested in a career in the fire service. The courses in the curriculum include the general education courses and introductory fire science courses that students typically take during the first two years at a four-year college or university. When selecting electives and arranging their program of study, students should consult with their faculty advisors and check the specific requirements of the major department in the college or university where they plan to transfer.

It is recommended that students complete the Career Studies Certificate in Firefighting and Prevention before beginning this program of study. This program is designed for currently employed or volunteer firefighters who have completed recruit school. For students interested in the program, who are not either employed as firefighters or volunteers, it is recommended that you join a volunteer unit and participate in their recruit school before taking the FST courses in this program

Curriculum admission guidelines

Four units of English, three units of college preparatory mathematics (Algebra I, Algebra II, Geometry), one unit of Laboratory Science, and one unit of Social Science. The courses in Social Science assume that students have college-level skills in reading, writing, and mathematics. Developmental courses may be recommended for students with deficiencies in English and mathematics.

Curriculum and Other Requirements

Specialization in Fire Science (02)

		Credits
ENG 111-112	College Composition I-II	6
ENG 241-242	Survey of American Literature I-II	6
FST 100	Principles of Emergency Services	3
FST 115	Fire Prevention	3
FST 120	Occupational Safety and Health for the Fire Service	3
HIS 121-122	United States History I-II (or HIS 101-102)	6
HLT 110[1]/PED[1]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 151	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 157	Elementary Statistics (or MTH 152 or MTH 271)	3
PSY 200	Principles of Psychology	3
SOC 200	Principles of Sociology	3
SDV 100	College Success Skills (or SDV 108)	1
SPD 100[2]	Principles of Public Speaking	3
E[3]	Humanities/Fine Arts Elective	6
E[4]	Natural Science Sequence	8
Total Minimum Credits for Degree		**62**

[1] Two credits of Health (HLT) or Physical Education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service. EMT certification may be substituted for this requirement.

[2] FST 135 or Fire Instructor I and II Certification or Fire Instructor I and FST 136 may be substituted for this requirement.

[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses."

[4] A two-semester sequence selected from BIO 101-102, CHM 111-112, GOL 105-106 or PHY 201-202 must be completed.

Suggested Course Sequence

Fall	Spring
ENG 111	ENG 112
FST 100	FST 120
HIS 121	HIS 122
MTH 151 or MTH 163	MTH 157 or MTH 152 or MTH 271
SDV 100 or SDV 108	Natural Science Sequence
Natural Science Sequence	
Fall	**Spring**
ENG 241 or ENG 243	ENG 242 or ENG 244
ITE 115	HLT/PED
PSY 200	SOC 200
Humanities/Fine Arts Elective	Humanities/Fine Arts Elective
SPD 100 or FST 135	FST 115

Surgical Technology – Certificate

Distance Learning Program

Offered through partnership with Piedmont Virginia Community College

The Surgical Technology Certificate is offered through a distance learning partnership between Piedmont Virginia Community College, Virginia Western Community College, and Lewis-Gale Medical Center. Students complete general education requirements at Virginia Western. Surgical technology courses are offered through PVCC at Virginia Western via web-based conferencing technology.

Purpose The one-year Certificate program is designed to provide the community with individuals who can function as operating room technologists. This program of study will provide students with an entry-level career in the health care field that is rewarding, in demand, and provides an opportunity for career advancement.

Program Philosophy The Surgical Technology program is organized around the belief that as members of the surgical team, surgical technologists assist in the promotion of optimal health for persons with acute or chronic illnesses throughout the lifespan.

Surgical technology education balances the humanities, sciences, ethical principles, and technical skill ability. The curriculum is designed to support the personal and career development of students, and supports the belief that as students perform in the operating room they learn and develop their highest potential in a challenging environment. The Surgical Technology program values the diversity of our students' age, life experiences, and culture as this diversity reflects the society they will serve.

With today's rapidly changing health care system, students must develop skills and an appreciation for lifelong learning. For the Surgical Technology certificate graduate this may include further acquisition of technical skills and knowledge within the work setting and/or pursuit of additional formal education.

Occupational objective Surgical technologists currently are in high demand. This three-semester Surgical Technology certificate program will prepare individuals to perform selected activities in the operating room as an entry-level member of the surgical team. The certificate curriculum is designed to provide graduates the opportunity to become nationally certified as a surgical technologist.

Admission requirements Students who plan to complete the program through distance education at Virginia Western should follow this admission procedure:

1. Complete an online PVCC application, (www.pvcc.edu), in addition to the Surgical Technology Program application.
2. Have official copies of your high school and all other college transcripts sent to the PVCC Office of Admissions and Records. It is the student's responsibility to verify that transcripts have been received at PVCC. Transfer credits are evaluated by the registrar.
3. Complete assessment testing in reading, writing, arithmetic, and basic Algebra. Assessment testing must be completed by May 1 in order to be considered for August admission. This testing may be done at any community college and the results sent to PVCC.
4. Meet with the Health Technology Information Specialist at Virginia Western for interpretation of the assessment results. In addition, the specialist will recommend appropriate courses to be taken prior to entry into the Surgical Technology program. Completion of general education coursework on a part-time basis sometimes takes several years.
5. Complete all necessary prerequisite courses:
   Math: Students must demonstrate competency through Math 3 (basic Algebra) either through assessment test scores, taking Math 3, or a college level math course passed with a "C" or better may be substituted for Algebra with the approval of the program director.
   a. **English:** Students must satisfy all prerequisites for ENG 111 either through assessment test scores or by taking necessary developmental reading and writing courses.
   b. **Chemistry:** Students can satisfy this requirement by taking a developmental chemistry course (CHEM 1 or CHEM 5), demonstrating completion of a high school chemistry course with a grade of "C" or better on an official high school transcript (Courses such as "Consumer Chemistry" or "Chemistry for Everyday Living" do not satisfy the chemistry prerequisite), or by passing another college chemistry course with a "C" or better.
6. Completion of Surgical Technology program application by May 1.
7. Attend an observational experience in an operating room at a local hospital. This experience will be scheduled after the written application has been received and reviewed.

(See the Surgical Technology Program Information Booklet for more detailed description of requirements and admission procedures.) The booklet can be requested at (434) 961-5445.

Other requirements Applicants must not have had legal action against them nor have pending legal action against them that would prevent employment in a health care setting. Students may be required to submit to a background check or drug test.

Surgical Technology, continued – Certificate

Students accepted into the program must provide the College with a health record as evidence of good physical and mental health and must be free of any condition which adversely affects performance as a surgical technologist.

Waiting list Qualified applicants beyond space available will be ranked in order of priority for admission and placed on a waiting list. They will be notified in writing immediately if space becomes available in the entering class.

Curriculum requirements Students must receive a grade of "C" or better in the required general education and Surgical Technology courses. Because the Surgical Technology curriculum is cumulative, students must successfully complete all courses outlined in semester one before proceeding to semester two Surgical Technology courses, and all semester two courses must be passed before advancing to the third semester course.

Satisfactory performance in each laboratory and clinical component is necessary in all Surgical Technology courses. Attendance at all scheduled clinical experiences or faculty approved make-up time is mandatory. The College policy for classroom attendance is followed. In addition, Surgical Technology faculty reserve the right to take corrective action that may include withdrawal from the program for any student engaging in unprofessional or disruptive behavior in the classroom or clinical setting.

Part-time study Students are encouraged to complete some or all of the general education requirements before seeking admission to the program and beginning the surgical technology course sequence.

Curriculum and Other Requirements

		Credits
BIO 141-142	Human Anatomy and Physiology I-II	8
ENG 111	College Composition I	3
HLT 106	First Aid and Safety	2
HLT 143	Medical Terminology	3
NAS 185	Microbiology	4
SDV 100	Orientation	1
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		**45**

Suggested Course Sequence

Fall
BIO 141
HLT 106
HLT 143
SUR 140
SUR 145

Spring
BIO 142
SDV 100
SUR 210
SUR 250

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.

Technical Studies – Associate of Applied Science (718)

Purpose The Technical Studies curriculum is designed to meet the rapidly changing workforce training needs of business and industry. Focused on meeting short-term educational needs, the degree can also be used as a general studies degree to enhance the education and training of current employees or ensure basic technical and general work-based skills for new employees. The curriculum allows employers to develop a specific plan of study negotiated with, and approved by, appropriate College faculty and administrators. The basic structure of the curriculum includes four components (general education, a technical core, occupational-technical content area(s), and work-based learning.)

Customized plans of study may be designed and developed to meet specific company or industry needs, in accordance with the structure described below.

Curriculum and Other Requirements

		Credits
EGR/IST	Technical Elective	3
ENG 111	College Composition I	3
ENG 115	Technical Writing	3
HLT/PED[1]	Health or Physical Education	2
IND 190	Coordinated Internship	3
IND 230	Applied Quality Control	3
IND 290	Coordinated Internship	3
IND/PHY	Science/Technical Principles Elective	4
ITE 115	Intro Computer Applications and Concepts	3
MTH	Introduction to Mathematics (120/151/166)	3-5
SDV 100	College Success Skills (or SDV 108)	1
SPD 100	Principles of Public Speaking	3
TEL	Telecommunications Technical Elective	3
E	Content Skills Elective	3
E	Content Skills Elective	12-15
E	Humanities/Fine Arts Elective	3
E	Social Science Elective	6
E	Technical Elective	4
Total Minimum Credits for Certificate		**65**

Note: Company representatives are invited to contact the Division of Engineering and Industrial Technology, (540) 857-7275, for more information.

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

Suggested Course Sequence

Fall
ENG 111
ITE 115
MTH 120/151/166
SDV 100 or SDV 108
Content Skills Elective
Technical Elective

Spring
SPD 100
Content Skill Elective
Science/Technical Principles Elective
IND 230
Technical Elective
HLT/PED

Fall
ENG 115
IND 190
Content Skills Elective
Humanities/Fine Arts Elective
Social Science Elective

Spring
HLT/PED
IND 290
Content Skills Elective
Content Skills Elective
Social Science Elective

Technical Studies, continued – Associate of Applied Science (718)

Purpose This degree combines the concepts and practices of mechanical and electrical processes in order to manipulate motorized, hydraulic, and pneumatic machines to perform complex automated functions in an industrial or manufacturing setting. Students develop the skills to assemble, install, test and troubleshoot, calibrate, and service a variety of devices, products and electronic instruments. Coursework also includes collaborative projects in which students form teams with another program area to build a factory, enabling them to apply their skills and knowledge to a simulated work experience.

Occupational objectives Entry-level or advancement opportunities at automated manufacturing and computer aided industrial sites. Positions include mechanical, maintenance, electrical, quality, computer, process, and manufacturing technicians. Other job titles may include electronic service technician or industrial electrician.

Curriculum admission guidelines Proficiency in high school English and mathematics (one unit of Algebra).

Curriculum and Other Requirements

		Credits
Electromechanical Technology Specialization		
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
ENG 111	College Composition I	3
ETR 123	Electronic Applications I	1
ETR 141	Electronics I	3
ETR 286	Principles and Applications of Robotics	3
HLT/PED[1]	Health or Physical Education	2
IND 190	Coordinated Internship	3
IND 230	Applied Quality Control	3
IND 290	Coordinated Internship	3
ITE 115	Introduction to Computer Applications and Concepts	3
MEC 119	Introduction to Basic CNC and CAM	3
MEC 155	Mechanisms	2
MEC 162	Applied Hydraulics and Pneumatics	3
MTH 115	Mathematics (or MTH 166)	3
SAF 127	Industrial Safety	2
SDV 101	Orientation: Introduction to Engineering and Tech	1
SPD 100	Principles of Public Speaking	3
E	Humanities/Fine Arts Elective	3
E	Social Science Elective	6
Total Minimum Credits for Certificate		**62**

Note: Company representatives are invited to contact the Division of Engineering and Industrial Technology, (540) 857-7275, for more information.

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

Suggested Course Sequence

Fall	Spring
ELE 133	ELE 134
ENG 111	ETR 123
ITE 115	ETR 141
MTH 115 (or MTH 166)	HLT/PED
SAF 127	IND 230
SDV 101	MEC 162

Fall	Spring
BLD 111	ETR 286
ELE 239	IND 290
Humanities/Fine Arts Elective	MEC 155
IND 190	Social Science Elective
MEC 119	
SPD 100	

Veterinary Technology – Associate of Applied Science

Distance Learning Program

Offered through partnership with Blue Ridge Community College (BRCC)

This program is designed for those students who for personal or financial reasons cannot travel to Weyers Cave for the residential program. Students complete general education requirements at Virginia Western. Veterinary technology courses are interactive, two-way audio and video, and are transmitted from Blue Ridge Community College to Virginia Western via compressed video technology three hours a day, two days a week.

Purpose The program is designed to prepare students as veterinary technicians. In Virginia, licensed veterinary technicians working under the direct supervision of a licensed veterinarian may perform those tasks related to animal health except the diagnosis of disease, prescribing drugs, or performing surgery. Graduates of this program are eligible to take the Virginia Veterinary Technician Licensing exam which is offered in May or June.

Occupational objective Veterinary technicians may be employed in a veterinary hospital, diagnostic/research laboratory, the pharmaceutical industry, zoos/wildlife centers, as sales and livestock managers, or veterinary educators.

Curriculum admissions standards
Applicants for the distance education program must:

1. Be a high school graduate or equivalent;
2. Have successfully completed Algebra and Biology;
3. Complete an application for admission to BRCC and submit official transcripts from high school and all colleges and universities attended;
4. Observe in a veterinary hospital for 16 hours;
5. Complete an interview with a member of the Veterinary Technology faculty at BRCC;

Curriculum and Other Requirements

		Credits
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 Technology	3
VET 111	Anatomy and Physiology of Domestic Animals	4
VET 115	Laboratory Techniques I	4
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	Coordinated Practice in Veterinary Technology	4
The following general education courses may be completed at Virginia Western prior to program admission:		
ENG 111	College Composition I	3
SDV 100	Orientation	1
CHM 111	College Chemistry I	4
HLT/PED	Health or Physical Education	2
E[1]	Humanities/Fine Arts Elective	3
E[1]	Social Science Elective	3
E	Psychology Elective	3
ITE 115	Fundamentals of Computer Information Systems	3
Total Minimum Credits for Certificate		**73**

[1] Humanities/Fine Arts and Social Science electives must be selected from the "Approved List of Transfer Courses" on page 50.

Veterinary Technology, continued – Associate of Applied Science

6. Have completed or be in the process of completing the general education courses required for the AAS degree in Veterinary Technology;
7. Work for at least 20 hours per week with a veterinarian willing to provide supervision and opportunities to practice the tasks taught in the various courses;
8. Be committed to enrolling in all the courses for this program as they are offered;
9. Have documentation of current CPR certification.

The distance learning program has limited space and students will be selected on a competitive basis. An interview at BRCC will be required. Applications for the next class will be due December 31, 2008. Classes will start in August 2009.

Note: It is the student's responsibility to verify that transcripts have been received at BRCC. Transfer credits are evaluated by the registrar. Blue Ridge Community College currently transmits the Veterinary Technology Program to Tidewater Community College's Virginia Beach campus and Virginia Western Community College in Roanoke using compressed video technology. Courses will be offered in sequence to allow a student who takes every course to finish in 8 semesters. The first class graduated in May 2003. Students will be required to travel to the Weyers Cave Campus three times during the semester for laboratory work and practical exams.

Veterinarian Technician

Virginia average starting salary: $17,000[1]

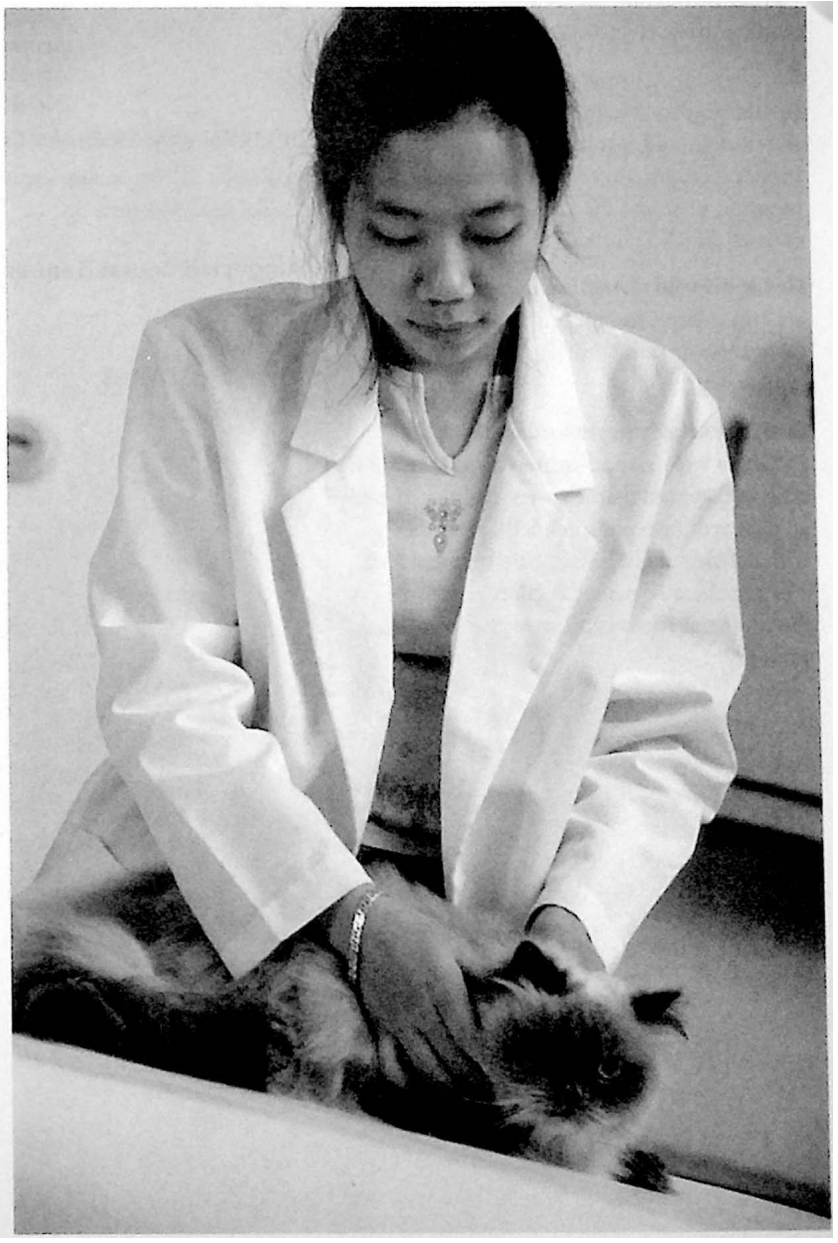
Virginia median salary: $27,500[1]

This occupation expected to grow much faster than average[2]

Demand expected to increase by 35% between 2004 and 2014[1]

[1] Source: America's Career InfoNet>Occupation Pro le>Veterinarian Technicians & Technologists>Virginia

[2] Source: U.S. Bureau of Labor Statistics, Occupational Outlook Handbook 2005



Welding – Certificate (995)

Purpose There is a continuous need for properly trained welders to work in the manufacturing, construction, and maintenance/repair occupations. This program is designed to prepare the student for full-time employment in the welding field. In this curriculum, there are separate courses to introduce the student to the concepts, practices, and techniques of many types of welding. Also included are courses in welding metallurgy, blueprint reading, basic electricity, and industrial safety.

In addition to the aforementioned courses, the student and faculty advisor will select technical electives to complement the technical program of study. Two general education courses are also required in this curriculum.

Occupational objectives Arc, gas, mig, and tig welder; welding supervisor; welding inspector; or sales and service industry representative.

Curriculum admission guidelines
Proficiency in oral and written communication skills and general mathematics. Developmental courses will be recommended for students with deficiencies in English and mathematics. The purchase of personal safety equipment is the financial responsibility of the individual student.

Curriculum and Other Requirements

		Credits
DRF 161	Blueprint Reading I	2
ELE 133	Practical Electricity I	3
HLT 106	First Aid and Safety	2
SDV 100	College Success Skills (or SDV 108)	1
WEL 120	Fundamentals of Welding	3
WEL 121	Arc Welding	2
WEL 130	Inert Gas Welding (MIG)	3
WEL 135	Inert Gas Welding	2
WEL 145	Welding Metallurgy	3
Additional required courses that may be taken any semester:		
ENG 111	College Composition I	3
E[1]	Approved Technical Elective	3
E[1]	Approved Technical Elective	3
E[2]	Social Science Elective	3
Total Minimum Credits for Certificate		**33**

[1] Technical elective; requires departmental approval.

[2] Social Science elective.

Suggested Course Sequence

Fall	Spring
DRF 161	HLT 106
SDV 100 or SDV 108	WEL 121
WEL 120	
Fall	**Spring**
ELE 133	WEL 135
WEL 130	WEL 145

Welding: Intensive Welding Training

Career Studies Certificate (094)

Purpose The demand for welding professionals continues to rise across the country. Welders work in manufacturing, construction, maintenance and repair occupations in a wide variety of fields. This intensive program is designed to prepare the student for entry-level full-time employment in the welding trade. As distinguished from the College's traditional Welding certificate (995) program, this is an intensive program designed to prepare one for the workplace as quickly as possible. Courses, developed with significant input from area employers, include mathematics, print reading, drafting, industrial dynamics and lab-oriented welding classes. Students also participate in a welding internship with a local company that could be a future employer.

Occupational objectives Entry level welder with skills in SMAW, GMAW and GTAW.

Curriculum admission guidelines
Proficiency in oral and written communication skills and general mathematics. Developmental MTH 02 will be recommended for students with deficiencies in mathematics. Developmental English classes will be recommended for students with oral or written communication deficiencies. The purchase of personal safety equipment is the financial responsibility of the individual student.

Curriculum and Other Requirements		Credits
DRF 161	Blueprint Reading I	2
SDV 106	Preparation for Employment	1
WEL 116	Welding 1	2
WEL 121	Arc Welding	2
WEL 135	Inert Gas Welding (MIG)	2
WEL 136	Inert Gas Welding (TIG)	2
WEL 150	Welding Drawing and Interpretation	3
WEL 290	Welding Internship	3
E	Industrial Engineering Technology Elective	1
Total Minimum Credits for Certificate		**18**

Welding:Welding and Metal Processing

Career Studies (047)

Purpose The Career Studies in Welding and Metal Processing offers instruction in the principles and practices of welding processes. Successful completion of the program provides sufficient training for entry into the field of production-type welding. Students have access to the latest instructional and practical experiences in a high-technology, modern shop facility.

Occupational objectives Arc, gas, mig, and/or tig welder; metal fabricator.

Curriculum admission guidelines Proficiency in oral and written communication skills and general mathematics. Developmental courses will be recommended for students with deficiencies in English and mathematics. The purchase of personal safety equipment is the financial responsibility of the individual student.

Curriculum and Other Requirements

		Credits
DRF 161	Blueprint Reading I	2
MEC 119	Introduction to Basic CNC and CAM	3
SAF 127	Industrial Safety	2
WEL 120	Fundamentals of Welding	3
WEL 121	ARC Welding	2
WEL 135	Inert Gas Welding	2
WEL 145	Welding Metallurgy	3
Total Minimum Credits for Certificate		**17**

Suggested Course Sequence

Fall	Spring
DRF 161	WEL 121
MEC 119	WEL 135
SAF 127	WEL 145
WEL 120	

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 co-requisites are required for a course, usually the co-requisites must be taken at the same time. The prerequisites or their equivalent must be completed satisfactorily before enrolling in a course unless special permission is obtained from the division chair and the Dean of Academic and Student Affairs.

General Usage Courses

The following "General Usage Courses" apply to multiple curricula and all prefix sections. The titles and descriptions are generally applicable for such use.

(Insert appropriate prefix) 90, 190, 290 Coordinated Practice in *(Insert appropriate discipline)* (1–5 CR). Includes supervised practice in selected health agencies coordinated by the College. Credit/practice ratio maximum 1:5 hours. May be repeated for credit. Variable hours.

(Insert appropriate prefix) 90, 190, 290 Coordinated Internship in *(Insert appropriate discipline)* (1–5 CR). Supervised on-the-job training in selected business, industrial, or service firms coordinated by the College. Credit/practice ratio maximum 1:5 hours. May be repeated for credit. Variable hours.

(Insert appropriate prefix) 93, 193, 293 Studies in *(Insert appropriate discipline)* (1–5 CR). A "Studies in" course is intended as an experimental course to test its viability as a permanent offering. Variable hours.

(Insert appropriate prefix) 95, 195, 295 Topics in *(Insert appropriate discipline)* (1–5 CR). Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

(Insert appropriate prefix) 96, 196, 296 On-site Training in *(Insert appropriate discipline)* (1–5 CR). Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the College. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(Insert appropriate prefix) 97, 197, 297 Cooperative Education in *(Insert appropriate discipline)* (1–5 CR). Supervised on-the-job-training for pay in approved business, industrial, and service firms coordinated by the College's Cooperative Education Office. Is applicable to all occupational/technical curricula at the discretion of the College. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(Insert appropriate prefix) 98, 198, 298 Seminar and Project in *(Insert appropriate discipline)* (1–5 CR). Required 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). Assigned problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

ACC- Accounting

ACC 124 Payroll Accounting I

(2 CR) Presents accounting systems and methods used in computing and recording payroll to include payroll taxes and compliance with federal and state legislation. Lecture 2–3 hours per week.

ACC 211 Principles of Accounting I

(3 CR) Co-requisite: ACC 213. Prerequisite: Math and Algebra or the equivalent proficiency. Presents accounting principles and their application to various businesses. Covers the accounting cycle, income determination, and financial reporting. Studies services, merchandising, and includes internal controls. Lecture 3 hours. Total 3 hours per week.

ACC 212 Principles of Accounting II

(3 CR) Prerequisites: ACC 211 and ACC 213. Co-requisite: ACC 214. 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. Lecture 3 hours. Total 3 hours per week.

ACC 213 Principles of Accounting Laboratory I

(1 CR) Co-requisite: ACC 211. Provides problem-solving experiences to supplement instruction in ACC 211. Must be taken concurrently with ACC 211, in appropriate curricula. Laboratory 2 hours per week.

ACC 214 Principles of Accounting Laboratory II

(I CR) Prerequisites: ACC 211 and ACC 213. Co-requisite: ACC 212. Provides problem-solving experience to supplement instruction in ACC 212. Must be taken concurrently with ACC 212, in appropriate curricula. Laboratory 2 hours per week.

ACC 215 Computerized Accounting

(3 CR) Prerequisites: ACC 212 or equivalent and ITE 115. 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. 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. 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) Prerequisite: ADJ 100. 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 228 Narcotics and Dangerous Drugs
(3 CR) Surveys the historical and current usage of narcotics and dangerous drugs. Teaches the identification and classification of such drugs and emphasizes the symptoms and effects on their users. Examines investigative methods and procedures utilized in law enforcement efforts against illicit drug usage. Lecture 3 hours per week.

ADJ 229 Law Enforcement and the Community
(3 CR) Prerequisite: ADJ 100. Considers current efforts by law enforcement personnel to achieve an effective working relationship with the community. Surveys and analyzes various interactive approaches of law enforcement agencies and the citizenry they serve. Lecture 3 hours per week.

ADJ 236 Principles of Criminal Investigation
(3 CR) Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling and preserving of evidence. Lecture 3 hours per week.

ADJ 237 Advanced Criminal Investigation
(3 CR) Prerequisite: ADJ 236. Introduces specialized tools and scientific aids used in criminal investigation. Applies investigative techniques to specific situations and preparation of trial evidence. Prerequisite ADJ 236 or divisional approval. Lecture 3 hours per week.

AIR – Air Conditioning and Refrigeration

AIR 121 Air Conditioning and Refrigeration I
(3 CR) Prerequisite: MTH 02 or equivalent. Co-requisite: ELE 133. Studies refrigeration theory, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Provides laboratory application of refrigerators and freezers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 122 Air Conditioning and Refrigeration II
(3 CR) Prerequisite: AIR 121. Co-requisite: ELE 134. Presents operations of commercial refrigeration systems, ice machines, design, installation and service, air conditioning and heat pumps. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 123 Air Conditioning and Refrigeration III
(3 CR) Prerequisite: AIR 122. Psychometric properties of air, heat load and gain calculation, heated and chilled water systems, duct, design, air distribution and air comfort requirements. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 165-166 Air Conditioning Systems I-II
(3 CR, 3 CR) Introduces comfort survey, house construction, load calculations, types of distribution systems, and equipment selection. Introduces designing, layout, installing and adjusting of duct systems, job costs, and bidding of job. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC - Architecture

ARC 100 Introduction to Architecture
(3 CR) Outlines history and impact of architecture. Emphasizes dynamics and social aspects of architecture and society; focuses on 19th and 20th century architectural forms. Lecture 3 hours per week.

ARC 133 Construction Methodology and Procedures I
(3 CR) Studies materials used in construction of buildings, covering foundations to structural framing systems. Includes appropriate use of materials for various construction types. Includes specification of materials and installation procedures; types of specifications and writing procedures; bidding procedures and, contract documents. Lecture 3 hours per week.

ARC 221 Architectural CAD Applications Software I

(3 CR) Prerequisite: DRF 201. Teaches the principles and techniques of architectural drawing practices through the use of architecture specific CAD software. Utilizes the commands and features of the software to generate drawings that emphasize architectural design and structural systems. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ARO - Aviation

ARO 121 Private Pilot Ground School

(3 CR) Presents the fundamental principles of flight, including theory of flight, aircraft standards and specifications, basic aircraft construction, weight and balance, navigation, meteorology, principles of radio communication, and application of aerophysics. Prepares students for the FAA examination for private pilot rating. Lecture 3 hours per week.

ART – Art

ART 101-102 History and Appreciation of Art I-II

(3 CR, 3 CR) Presents history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of western civilization to present. Lecture 3 hours per week.

ART 121-122 Drawing I-II

(3 CR, 3 CR) Prerequisite for ART 122: ART 121. Develops basic drawing skills and understanding of visual language through studio instruction/lecture. Introduces concepts such as proportion, space, perspective, tone, and composition as applied to still life, landscape, and the figure. Uses drawing media such as pencil, charcoal, ink wash, and color media. Includes field trips and gallery assignments as appropriate. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 131-132 Fundamentals of Design I-II

(3 CR, 3 CR) Prerequisite for ART 132: ART 131. Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 141 Typography I

(3 CR) Prerequisites: ART 131 and 180. Studies the history of letter forms and typefaces and examines their uses in contemporary communications media. Emphasizes applications to specific design problems. Includes identification and specification of type, copy fitting and hands-on typesetting problems. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 180 Introduction to Computer Graphics

(3 CR) Provides a working introduction to computer-based electronic technology used by visual artists and designers. Presents the basics of operating platforms and standard industry software. Introduces problems where students can explore creative potential of the new electronic media environment. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 221-222 Drawing III-IV

(3 CR, 3 CR) Prerequisites: ART 121 and ART 122 for ART 221; ART 221 for ART 222. Introduces advanced concepts and techniques of drawing as applied to figure, still life, and landscape. Gives additional instruction in composition, modeling, space, and perspective. Encourages individual approaches to drawing. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 241-242 Painting I-II

(3 CR, 3 CR) Prerequisites: For ART 241, prerequisite is ART 121 or departmental approval; for ART 242, the prerequisite is ART 241. Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 243-244 Watercolor I-II

(3 CR, 3 CR) Prerequisites: For ART 243, prerequisite is ART 121 or departmental approval; for ART 244: ART 243. Presents abstract and representational painting in watercolor, with emphasis on design, color, composition, technique, and value. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 247 Painting Technique for Illustrators

(3 CR) Prerequisites: ART 241 or ART 243. Introduces materials and techniques used by the illustrator. Includes water-soluble paints (watercolor, acrylic, gouache), oil-based paints, and mixed media. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 250 History of Design

(3 CR) Surveys the development of graphic design and illustration with emphasis on the 19th and 20th centuries. Analyzes the work of outstanding designers and illustrators. Lecture 3 hours per week.

ART 251-252 Communication Design I-II

(3 CR, 3 CR) Prerequisites: For ART 251 and 252: ART 180, ART 132, and ART 141. Studies principles of visual communications as applied to advertising in newspapers, magazines, direct mail advertising, house organs, etc.; studies these principles through both print design and web design. Analyzes the influence of contemporary art on design. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 282 Graphic Techniques
(3 CR, 3 CR) Prerequisites: For ART 281: ART 180, ART 132, and ART 141. Focuses on using drawing instruments and materials. Introduces printing processes and mechanics of reproduction. Focuses on production and prepress issues as well as various technologies within the printing field. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 283-284 Computer Graphics I-II
(3 CR, 3 CR) Prerequisite: ART 180. Utilizes microcomputers and software to produce computer graphics. Employs techniques learned to solve studio projects, which reinforce instruction and are appropriate for portfolio use. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 287 Portfolio and Resume Preparation
(2 CR) Prerequisites: ART 141, ART 251, ART 281, and ART 283. Focuses on portfolio preparation, resume writing, and job interviewing for students. Recommended for final semester program students. Requires instructor's approval. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

ASL – American Sign Language

ASL 101-102 American Sign Language I-II
(3-4 CR) 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.

AST – Administrative Support Technology

AST 101 Keyboarding I
(3 CR) Co-requisite: AST 140 or equivalent. 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. Co-requisite: AST 113. Develops keyboarding and document production skills emphasizing 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 140 Introduction to Microsoft® Windows
(1 CR) Introduces students to Windows and provides basic concepts and commands necessary in the Windows environment. Lecture 1 hour 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 Introduction to Voice Recognition Software (Dragon Naturally Speaking)
(1 CR) Teaches the computer user to use the voice, fax and writing tablet as input devices to compose documents and to give commands directly to the computer. Since this new technology is being used in many business, medical, and legal offices, students should be prepared to use these input devices. Lecture 1 hour per week.

AST 201 Keyboarding III – Office Simulation
(3 CR) Prerequisite: AST 102. Develops decision-making skills, speed, and accuracy in production keying. Applies word processing skills in creating specialized business documents. Lecture 3 hours per week.

AST 205 Business Communication
(3 CR) Prerequisites: AST 101 or AST 114 or equivalent and ENG 111 or AST 107. Teaches oral/ written communication techniques. Emphasizes writing and presenting business-related materials. Lecture 3 hours per week.

AST 213 Legal Keyboarding Simulation
(3 CR) Prerequisite: AST 102. Develops decision-making skills, speed, and accuracy in preparation of legal documents with emphasis on meeting office requirements. Lecture 3 hours per week.

AST 215 Medical Keyboarding – Simulation
(3 CR) Prerequisite: AST 102. Develops decision-making skills, speed, and accuracy in preparation of medical documents with emphasis on meeting office requirements. Lecture 3 hours per week.

AST 232 Microcomputer Office Application
(3 CR) Prerequisites: AST 101, AST 140, and AST 141. Teaches production of business documents using presentations, databases, and spreadsheets. Emphasizes document production to meet business and industry standards. Lecture 3 hours per week.

AST 236 Specialized Software Applications (Microsoft® Office Frontpage, Microsoft® Office Publisher, Dragon Naturally Speaking)
(2-4 CR) Prerequisites: AST 101 or equivalent, AST 232 and 238. Teaches specialized integrated software applications on the microcomputer using voice recognition, 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 240 Machine Transcription
(3 CR) Prerequisite: AST 102 and AST 107. Develops proficiency in the use of transcribing equipment to produce business documents. Emphasizes listening techniques, business English, and proper formatting. Includes production rate and mailable copy requirements. Lecture 3 hours per week.

AST 243 Office Administration I
(3 CR) Prerequisite or co-requisite: AST 102. Develops an understanding of the administrative support role and the skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes the development of critical-thinking, problem-solving, and job performance skills in a business office environment. Lecture 3 hours per week.

AST 244 Office Administration II
(3 CR) Prerequisite: AST 243 or equivalent. Enhances skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes administrative and supervisory role of the office professional. Includes travel and meeting planning, office budgeting and financial procedures, international issues, and career development. Lecture 3 hrs. per week.

AST 245 Medical Machine Transcription
(3 CR) Prerequisites: AST 102, AST 107 and HLT 143. Develops machine transcription skills, integrating operation of transcribing equipment with understanding of medical terminology. Emphasizes dictation techniques and accurate transcription of medical documents in prescribed formats. Lecture 3 hours per week.

AST 247 Legal Machine Transcription
(3 CR) Prerequisites: AST 102 and AST 107. Develops machine transcription skills, integrating operation of transcribing equipment with understanding of legal terminology. Emphasizes dictation techniques and accurate transcription of legal documents in prescribed formats. Lecture 3 hours per week.

AUT – Automotive Analysis and Repair

AUT 126 Auto Fuel and Ignition Systems
(5 CR) Studies automobile ignition and fuel systems, their functions in operation of engine. Includes carburetors, fuel pumps, ignition systems, troubleshooting, engine test and adjustment, tune-up. Lecture 2-4 hours. Laboratory 3-9 hours. Total 7-11 hours per week.

AUT 241-242 Automotive Electricity I-II
(3-4 CR, 3-4 CR)
Introduces electricity and magnetism, symbols, and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments, and gauges and accessories. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

AUT 265 Automotive Braking System
(3-4 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 2-3 hours. Laboratory 3 hours. Total 5-6 hours per week.

AUT 266 Auto Alignment, Suspension and Steering
(3-4 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 1-2 hours. Laboratory 6 hours. Total 7-8 hours per week.

BIO - Biology

BIO 101-102 General Biology I-II

(4 CR, 4 CR) 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 hrs. per week.

BIO 141-142 Human Anatomy and Physiology I-II

(4 CR, 4 CR) Prerequisite: recent high school biology or BIO 101. Integrates anatomy and physiology of cells, tissues, organs, and systems of the body. Integrates concepts of chemistry, physics and pathology. Lecture 3 hours per week. Recitation and laboratory 2 hours per week. Total 5 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 227 Animal Life of Virginia

(3 CR) Focuses on ecology and identification of the native animal species of Virginia through discussions, lectures, lab and field exercises. Emphasizes birds, reptiles, amphibians, mammals and invertebrates (including insects of field and stream). Lecture 2 hours. Recitation and laboratory 3 hours. Total 5 hours per week.

BIO 270 General Ecology

(4 CR) Prerequisite: BIO 101-102 or division approval. Studies interrelationships between organisms and their natural and cultural environments with emphasis on populations, communities, and ecosystems. Lecture 3 hours. Recitation and laboratory 3 hrs. Total 6 hrs. per week.

BIO 271 Introduction to Ecological Systems

(4 CR) Prerequisites: BIO 101. Examines the basic biological, meteorological and geologic/geographic factors at play in determining various critical ecosystems. Emphasis on wetlands and wetlands reconstruction, endangered and threatened species habitats, and aquatic systems. Remote sensing technology and use of GIS in ecological management will be examined. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

BIO 285 Biological Problems in Contemporary Society

(3 CR) Discusses major biological problems facing society, which may include environmental and health concerns such as pollution, bioengineering, drug abuse, conservation, famine and others. Lecture 3 hours per week.

BLD - Building

BLD 20 Introduction to Plumbing

(2 CR) Presents an introduction to the principles and practices and interpreting various kinds of blueprints and working drawings with reference to local, state, and national building codes. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

BLD 111 Blueprint Reading and the Building Code

(3 CR) Introduces reading and interpreting various kinds of blueprints and working drawings with reference to local, state and national building codes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

BLD 131-132 Carpentry Framing I-II

(5 CR, 5 CR) Presents and introduction to carpentry with emphasis on residential construction. Covers safety on the job, appropriate use of power tools, basic construction techniques, an introduction to working drawings, and the team approach to residential buildings. Presents an introduction to selection and use of ladders and scaffolds, basic form removal and demolition, and use of basic first aid. Includes the concepts of carpentry framing for floors, walls, ceilings, porches and decks. Includes theoretical and practical application as well as the concepts of carpentry framing for roof, truss installation and door and window installation. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

BLD 133-134 Carpentry Framing III-IV

(5 CR, 5 CR) Continues the study of carpentry with emphasis on residential construction. Covers safety on the job, appropriate use of power tools, basic construction techniques, an introduction to working drawings, and the team approach to residential buildings. Continues the study of selection and use of ladders and scaffolds, basic form removal and demolition, and use of basic first aid. Includes the concepts of carpentry framing for floors, walls, ceilings, porches and decks. Includes theoretical and practical application as well as the concepts of carpentry framing for roof, truss installation and door and window installation. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

BLD 143 Plumbing Blueprint Reading

(3 CR) Focuses on blueprint reading, plan reviews, schematic drawing, isometric view drawing and architectural blueprint reading on single-, two-family and multi-story dwelling for drainage, vents and water piping design. Lecture 3 hours per week.

BLD 144 Plumbing Code and Certification Preparation

(3 CR) Teaches the use of the plumbing code standard book (BOCA), references standards, the reading and use of charts and tables, and preparation for the journeyman's certification and the cross-connection control certification test. Lecture 3 hours per week.

BLD 159 Mechanical Code and Certification Preparation

(3 CR) Discusses local, state, and national building codes as they related to the installation, maintenance and repair of mechanical systems in residential and commercial buildings. Includes gas and oil burners, venting, flues and sizing of systems. Lecture 3 hours per week.

BLD 180 Virginia Contractor License Review

(2 CR) Reviews the necessary material and prepares individuals planning to take the Virginia Class A or Class B Contractor License Examination. Lecture 2 hours per week.

BUS –Business Management and Administration

BUS 100 Introduction to Business

(3 CR) Presents a broad introduction to the functioning of business enterprise within the U.S. economic framework. Introduces economic systems, essential elements of business organization, production, human resource management, marketing, finance, and risk management. Develops business vocabulary. Lecture 3 hours per week.

BUS 111 Principles of Supervision I

(3 CR) Teaches the fundamentals of supervision, including primary responsibilities of supervisors. Introduces factors relating to the work of supervisor and subordinates. Covers aspects of leadership, job management, work improvement, training/ orientation, performance evaluation, and effective employee/ supervisor relationships. Lecture 3 hours per week.

BUS 125 Applied Business Mathematics

(3 CR) Prerequisite: Arithmetic or equivalent and a placement recommendation for BUS 125. Applies mathematical operations to business process and problems, ex. wages and payroll, sales and property taxes, checkbook records and bank reconciliation, depreciation, overhead, distribution of profits and loss in partnerships, distribution of corporate dividends, commercial discounts, markup, markdown, simple interest, present values, bank discount notes, multiple payment plans, compound interest, annuities, sinking funds, and amortization. Lecture 3 hours per week.

BUS 165 Small Business Management

(3 CR) Identifies management concerns unique to small businesses. Introduces the requirements necessary to initiate a small business, and identifies the elements comprising a business plan. Presents information establishing financial and administrative controls, developing a marketing strategy, managing business operations, and the legal and government relationships specific to small businesses. Lecture 3 hours per week.

BUS 200 Principles of Management

(3 CR) Teaches management and the functions of planning, organizing, directing, and controlling. Focuses on applying management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Lecture 3 hours per week.

BUS 202 Applied Management Principles

(3 CR) Prerequisite: BUS 100, BUS 111 or BUS 200. Focuses on management practices and issues in marketing and finance. May use case studies and/or management decision models to analyze and develop solutions to management problems. Lecture 3 hours per week.

BUS 205 Human Resource Management

(3 CR) Introduces employment, selection, and placement of personnel, usage levels and methods, job descriptions, training methods and programs, employee evaluation systems, compensation and labor relations. Includes procedures for management of human resources and uses case studies and problems to demonstrate implementation of these techniques. Lecture 3 hours per week.

BUS 221 Business Statistics I

(3 CR) Prerequisite: MTH 163 or divisional approval. Focuses on statistical methodology in the collection, organization, presentation, and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T distribution and hypotheses for means and proportions. Lecture 3 hours per week.

BUS 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.

CHD – Early Childhood Development

CHD 118 Language Arts for Young Children

(3 CR) Presents techniques and methods for encouraging the development of language and perceptual skills in young children. Stresses improvement of vocabulary, speech and methods to stimulate discussion. Surveys children's literature, examines elements of quality story telling and story reading, and stresses the use of audio-visual materials. 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 nursery, 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 121-122 Childhood Educational Development I-II

(3 CR, 3 CR) Focuses attention on the observable characteristics of children from birth through adolescence. Concentrates on cognitive, physical, social, and emotional changes that occur. Emphasizes the relationship between development and child's interactions with parents, siblings, peers, and teachers. Lecture 3 hours per week.

CHD 125 Creative Activities for Children

(3 CR) Prepares individuals to work with young children in the arts and other creative age-appropriate activities. Investigates effective classroom experiences and open-ended activities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 126 Methods and Materials for Developing Science and Mathematical Concepts in Children

(3 CR) Covers the selection of appropriate developmental learning materials for developing activities to stimulate the logical thinking skills in children. Lecture 3 hours per week.

CHD 165 Observation and Participation in Early Childhood/Primary Settings

(3 CR) Prerequisites: CHD 121, CHD 122 or departmental approval. Observes and participates in early childhood settings, such as child care centers, pre-schools, Montessori schools or public schools in Kindergarten through 3rd grade level. Students spend one hour each week in a seminar session in addition to 60 clock hours in the field. May be taken again for credit. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

CHD 166 Infant and Toddler Programs

(3 CR) Examines the fundamentals of infant and toddler development, including planning and implementing programs in group care. Emphasizes meeting physical, social, emotional, and cognitive needs: scheduling, preparing age-appropriate activities, health and safety policies, record keeping, and reporting to parents. Lecture 3 hours per week.

CHD 205 Guiding the Behavior of Children

(3 CR) Explores positive ways to build self-esteem in children and help them develop self-control. Presents practical ideas for encouraging pro-social behavior in children and emphasizes basic skills and techniques in classroom management. Lecture 3 hours per week.

CHD 210 Introduction to Exceptional Children

(3 CR) Reviews the history of education for exceptional children. Studies the characteristics associated with exceptional children. Explores positive techniques for managing behavior and adapting materials for classroom use. Lecture 3 hours per week.

CHD 216 Early Childhood Programs, School, and Social Change

(3 CR) Explores methods of developing positive, effective relations between staff and parents to enhance the developmental goals of home and school. Reviews current trends and issues in education, describes symptoms of homes in need of support, investigates non-traditional family and cultural patterns, and lists community resources. Lecture 3 hours per week.

CHD 265 Advanced Observation and Participation in Early Childhood Primary Settings

(3 CR) Prerequisites: CHD 121, CHD 122, CHD 165 or departmental approval. Observes and participates in early childhood settings such as child care centers, pre-school, Montessori schools, or public school settings (kindergarten - third grade). Emphasizes planning and implementation of appropriate activities and materials for children. Students will spend one hour each week in a seminar session in addition to 60 clock hours in the field. May be taken again for credit. Lecture 1 hour. Laboratory 6 hours. Total 7 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.

CHM - Chemistry

CHM 5 Developmental Chemistry for Health Sciences

(4 CR) Prerequisite: Algebra I. Introduces basic principles of inorganic chemistry. Emphasizes applications to the health sciences. Can be used as a preparatory course for CHM 111-112. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

CHM 111-112 College Chemistry I-II

(4 CR, 4 CR) Prerequisite: Algebra II; 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 241-242 Organic Chemistry I-II

(3 CR, 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 245-246 Organic Chemistry Laboratory I-II

(2 CR, 2 CR) Is taken concurrently with CHM 241 and CHM 242. Includes qualitative organic analysis. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

CIV - Civil Engineering Technology

CIV 135 Construction Management and Estimating

(3 CR) Teaches the equipment and methods used in construction. Includes principles and economics of construction, planning and management, and principles of estimating primarily using highway and building project examples. Lecture 3 hours per week.

CIV 171 Surveying 1

(3 CR) Prerequisite: MTH 115 or division approval. Introduces surveying equipment, procedures and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations and introduction to topography. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CSC - Computer Science

CSC 201 Computer Science I

(4 CR) Co-requisite: MTH 175 or MTH 271 or high school calculus or equivalent. Introduces algorithm and problem-solving methods. Emphasizes structured programming concepts, elementary data structures and the study and use of a high level programming language. Lecture 4 hours per week.

CSC 202 Computer Science II

(4 CR) Prerequisite: CSC 201. Examines data structures and algorithm analysis. Covers data structures (including sets, strings, stacks, queues, arrays, records, files, linked lists, and trees), abstract data types, algorithm analysis (including searching and sorting methods), and file structures. Lecture 4 hours per week.

DNH – Dental Hygiene

DNH 111 Oral Anatomy

(2 CR) Studies the morphology and function of the oral structures with emphasis on the primary and permanent dentition, eruption sequence, occlusion, and intra-arch relationships. Lecture 2 hours per week.

DNH 115 Histology/Head and Neck Anatomy

(3 CR) Presents a study of the microscopic and macroscopic anatomy and physiology of the head, neck, and oral tissues. Includes embryologic development and histologic components of the head, neck, teeth, and periodontium. Lecture 3 hours per week.

DNH 120 Management of Emergencies
(2 CR) Studies the various medical emergencies and techniques for managing emergencies in the dental setting. Additional practical applications and simulations of emergencies may be conducted to enhance basic knowledge from the one hour lecture component. Lecture 2 hours per week.

DNH 130 Oral Radiography for the Dental Hygienist
(2 CR) Studies radiation physics, biology, safety, and exposure techniques for intra- and extra-oral radiographic surveys. Laboratory provides practice in exposure, processing methods, mounting, and interpretation of normal findings. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

DNH 141 Dental Hygiene I
(5 CR) Introduces clinical knowledge and skills for the performance of dental hygiene services; basic skill components, lab mannequins, and client practice. Lecture 3 hours. Clinic 6 hours. Total 9 hours per week.

DNH 142 Dental Hygiene II
(5 CR) Prerequisite: DNH 141. Exposes students to instrument sharpening, time management, client education and ultrasonic instrumentation techniques and methods. Provides supervised clinical practice in the dental hygiene clinic with emphasis on developing client treatment and instrument skills. Lecture 2 hours. Clinic 9 hours. Total 11 hours per week.

DNH 145 General and Oral Pathology
(2 CR) Prerequisite: DNH 115. Introduces general pathology with consideration of the common diseases affecting the human body. Particular emphasis is given to studying pathological conditions of the mouth, teeth, and supporting structures. Lecture 2 hours per week.

DNH 146 Periodontics for Dental Hygienist
(2 CR) Introduces theoretical, practical study of various concepts/methods used in describing, preventing, and controlling periodontal disease. Presents etiology, microbiology, diagnosis, treatment and prognosis of diseases. Lecture 2 hours per week.

DNH 150 Nutrition
(2 CR) Studies nutrition as it relates to dentistry and general health. Emphasizes the principles of nutrition as applied to the clinical practice of dental hygiene. Lecture 2 hours per week.

DNH 190 Dental Hygiene Coordinated Practice
(3 CR) Prerequisite: DNH 142. Continues supervised clinical practice in the dental hygiene clinic with emphasis on coordinating didactic and clinical skills, and refining client treatment skills. Introduces special needs clients and treatment modifications. Lecture 2 hours. Clinic 3 hours. Total 5 hours per week.

DNH 214 Practical Materials for Dental Hygiene
(2 CR) Studies the current technologic advances, expanded functions, and clinical/laboratory materials used in dental hygiene practice. Provides laboratory experience for developing skills in the utilization and applications of these technologies and functions. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

DNH 216 Pharmacology
(2 CR) Studies the chemical and therapeutic agents used in dentistry, including their preparation, effectiveness, and specific application. Lecture 2 hours per week.

DNH 226 Public Health Dental Hygiene I
(2 CR) Studies and compares concepts of health care delivery, applying public health delivery model. Utilizes epidemiologic methods, research and biostatistics as applied to oral health program planning, implementation, and evaluation. Incorporates and applies current health issues and trends. Lecture 2 hours per week.

DNH 227 Public Health Dental Hygiene II
(1 CR) Prerequisite: DNH 226. Applies concepts of public health program planning through student directed community projects with an emphasis on preventive oral health education. Includes development of table clinics, bulletin boards, and volunteer service in the community. Laboratory 3 hours per week.

DNH 230 Office Practice and Ethics
(1 CR) Studies the principles of dental ethics and economics as they relate to the dental hygienist. The course also includes a study of jurisprudence and office procedures. Lecture 1 hour per week.

DNH 244 Dental Hygiene IV
(5 CR) Prerequisite: DNH 190. Introduces advanced skills and the dental hygienist's role in dental specialties. Includes supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasizes treatment of clients demonstrating periodontal involvement, stressing application and correlation of knowledge and skills from previous semesters. Lecture 1 hour. Clinic 12 hours. Total 13 hours per week.

DNH 245 Dental Hygiene V
(5 CR) Prerequisite: DNH 244. Supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasis is placed on synthesis of knowledge from previous semesters, treatment of clients with moderate to advanced periodontal involvement, and improving clinical speed while maintaining quality in preparation for practice. Lecture 1 hour. Clinic 12 hours. Total 13 hours per week.

DRF - Drafting

DRF 127 Introduction to Geometric Dimensioning and Tolerancing

(1 CR) Presents an overview of a positional tolerance system, its relationship to coordinate tolerance systems, and other aspects of industry standard drafting practices. Lecture 1 hour 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. Teaches computer-aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 202 Computer Aided Drafting and Design II

(3 CR) Prerequisite: DRF 201 or permission of instructor. Teaches production drawings and advanced operations in computer aided drafting. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 203 Computer Aided Drafting and Design III

(3 CR) Prerequisite: DRF 202 or permission of instructor. Teaches advanced CAD applications. Includes customization and/or use of advanced software. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 226 Computer Aided Machining

(3 CR) Prerequisite: MEC 119 or permission of the instructor. Teaches use of software to create numerical machine code to drive CNC milling machines or lathes. Introduces software and techniques to create, edit and produce CAD drawings, tool paths, and the numerical code for a CAM machine. Includes history, applications, hardware and software requirements, terminology, limitation and future trends. Reviews and builds on manual CNC programming methods. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 238 Computer Aided Modeling and Rendering I

(3 CR) Prerequisites: Basic computer literacy. Focuses on training students in the contemporary techniques of 3D modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photo-realism, which enables the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-throughs that will bring the third dimension to architectural designs and industrial applications. May introduce the use of steriolithography techniques for rapid prototyping. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

See Early Childhood Development (CHD)

ECO - Economics

ECO 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 1hour per week.

EGR - Engineering

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. Lecture 2 hours. Total 2 hours per week.

EGR 124 Introduction to Engineering and Engineering Methods

(3 CR) Co-requisites: MTH 175 and MTH 177. Introduces the engineering profession, professionalism, and ethics. Covers problem presentation, engineering calculations, digital computer applications, word processing, worksheets, programming in elementary numerical methods. Lecture 3 hours per week.

EGR 126 Computer Programming for Engineers
(3 CR) Co-requisite: MTH 116 or equivalent. Introduces computer, their architecture and software. Teaches program development using flowcharts. Solves engineering problems involving programming in languages such as FORTRAN, PASCAL, or C++. Lecture 3 hours per week.

EGR 140 Engineering Mechanics – Statics
(3 CR) Prerequisite: MTH 175 and MTH 177 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 multi-force members and friction and internal forces. Lecture 3 hours per week.

EGR 206 Engineering Economy
(3 CR) Co-requisite: MTH 116 or equivalent. Presents economic analysis of engineering alternatives. Studies economic and cost concepts, calculating economic equivalence, comparing alternatives, replacement economy, economic optimization in design and operation, depreciation, and after tax analysis. Lecture 3 hours per week.

EGR 216 Computer Methods in Engineering and Technology
(3 CR) Prerequisite: Basic computer knowledge including file management, mouse usage, and keyboarding skills.
Co-requisite: MTH 115. Provides advanced level experience in using a computer as a tool for solving technical problems and performing office functions. Includes computer hardware and operating system usage, structured programming in a selected high level language, use of word processing software, computer graphics and spreadsheets. Focuses on the analysis and solution of problems in engineering and technology. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EGR 245 Engineering Mechanics – Dynamics
(3 CR) Prerequisite: EGR 140. Presents approach to kinematics of particles in linear and curvilinear motion. Includes kinematics of rigid bodies in plane motion. Teaches Newton's second law, work-energy and power, impulse and momentum, and problem solving using computers. Lecture 3 hours per week.

EGR 246 Mechanics of Materials
(3 CR) Prerequisite: EGR 140. Teaches concepts of stress, strain, deformation, internal equilibrium, and basic properties of engineering materials. Analyzes axial loads, torsion, bending, shear and combined loading. Studies stress transformation and principle stresses, column analysis and energy principles. Lecture 3 hours per week.

EGR 251-252 Basic Electric Circuits I-II
(3 CR, 3 CR) Co-requisite: EGR-255. Teaches fundamentals of electric circuits. Includes circuit quantities of charge, current, potential, power and energy. Teaches resistive circuit analysis; Ohm's and Kirchoff's laws; nodal and mesh analysis; network theorems; RC, RL and RLC circuit transient response with constant forcing functions. Teaches AC steady-state analysis, power, and three-phase circuits. Presents frequency domain analysis, resonance, Fourier series, inductively coupled circuits, Laplace transform applications, and circuit transfer functions. Introduces problem solving using computers. Lecture 3 hours per week.

EGR 255 Electric Circuits Laboratory
(1 CR) Co-requisite: EGR 251. Teaches principles and operation of laboratory instruments such as VOM, electronic voltmeters, digital multimeters, oscilloscopes, counters, wave generators and power supplies. Presents application to circuit measurements, including transient and steady-state response of simple networks with laboratory applications of laws and theories of circuits plus measurement of AC quantities. Laboratory 3 hours per week.

EGR 268 Introduction to Computer Architecture
(3 CR) Introduces computer operation. Teaches number representation in digital systems, digital circuit design, computer architecture, and the relationship between software and hardware. Lecture 3 hours per week.

EGR 295 Fundamentals of Materials Engineering
(3 CR) Prerequisite: MTH 175. This course is designed to the structures and properties of metals, ceramics, polymers, composites, and electronic materials. Students will also gain an understanding of the processing and design limitations of materials. Topics fundamental to the further study of materials such as crystal structures, phase diagrams, and materials design and processing will be emphasized. Lecture 3 hours per week.

ELE – Electrical Technology

ELE 110 Home Electric Power
(3 CR) Covers the fundamentals of residential power distribution, circuits, panels, fuse boxes, breakers, and transformers. Includes study of the national electrical code, purpose, and interpretation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 133-134 Practical Electricity I-II
(3 CR, 3 CR) Prerequisite: general math proficiency. Teaches the fundamentals of electricity, terminology, symbols, and diagrams. Includes principles essential to understanding general practices, safety, and the practical aspects of residential and non-residential wiring and electrical installation. May require preparation of a report as an out-of-class activity. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 138 National Electrical Code

(2 CR) Teaches purpose and interpretation of the National Electrical Code as well as familiarizations with various charts, code rulings, and wiring methods. Lecture 2 hours per week.

ELE 147 Electrical Power and Control Systems

(3 CR) Prerequisite: ETR 113 or ELE 133 and MTH 115. Co-requisite: ETR 114. Reviews basic DC and AC circuits. Covers single-phase and three-phase AC power distribution systems, and protection devices, including types of AC motors. Presents analyzing and troubleshooting electrical control systems and motor protection devices. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 239 Programmable Controllers

(3 CR) Prerequisite: ELE 147 and ETR 281 or ELE 133 and ETR 141, or department approval. Deals with installation, programming, interfacing, and concepts of troubleshooting programmable controllers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS – Emergency Medical Technician

EMS 112 Emergency Medical Technician – Basic I

(3 CR) Prepares student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 113 Emergency Medical Technician – Basic II

(3 CR) Continued preparation of student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 120 Emergency Medical Technician – Basic Clinical I

(1 CR) Observes in a program-approved clinical/field setting. Includes topics for both EMS 111 and EMS 113, dependant upon the program in which the student is participating and is a co-requisite to both EMS 111 and EMS 113. Lecture 1 hour per week.

EMS 151 Introduction to Advanced Life Support

(4 CR) Co-requisite: EMS 170. Prepares the student for Virginia Enhanced certification eligibility and begins the sequence for National Registry Intermediate and/or Paramedic certification. Includes the theory and application of the following: foundations, human systems, pharmacology, overview of shock, venous access, airway management, patient assessment, respiratory emergencies, allergic reaction, and assessment-based management. Conforms at a minimum to the Virginia Office of Emergency Medical Services curriculum. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 153 Basic ECG Recognition

(2 CR) Focuses on the interpretation of basic electrocardiograms (ECG) and their significance. Includes an overview of anatomy and physiology of the cardiovascular system including structure, function, and electrical conduction in the heart. Covers advanced concepts that build on the knowledge and skills of basic dysrhythmias determination and introduction to 12 lead ECG. Lecture 2 hours per week.

EMS 155 ALS – Medical Care

(4 CR) Prerequisites: Current EMT-B certification, EMS 151, and EMS 153. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Includes ALS pharmacology, drug and fluid administration with emphasis on patient assessment, differential diagnosis and management of multiple medical complaints. Includes, but are not limited to conditions relating to cardiac, diabetic, neurological, nontraumatic abdominal pain, environmental, behavioral, gynecology, and toxicological disease conditions. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 157 ALS – Trauma Care

(3 CR) Prerequisites: Current EMT-B certification and EMS 151. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 159 ALS – Special Populations

(2 CR) Prerequisites: EMS 151 and EMS 153. Pre- or co-requisite: EMS 155. Continues the Virginia office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of specialty patients including obstetrical, neonates, pediatric, and geriatrics. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EMS 170 ALS Internship
(1-2 CR) Begins the first in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the Emergency Department, critical care units, pediatric, labor and delivery, operating room, trauma centers, and various advanced life support units. Laboratory 3–6 hours per week.

EMS 172 ALS Clinical Internship II
(1-2 CR) Co-requisite: EMS 151. Continues with the second in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the Emergency Department, critical care units, pediatric, labor and delivery, operating room and trauma centers. Laboratory 3–6 hours per week.

EMS 173 ALS Field Internship II
(1 CR) Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3 hours per week.

ENG – English

ENG 01 Preparing for College Writing I
(4 CR) Helps students discover and develop writing processes needed for the proficiency level necessary to enter their respective curricula. Guides students through the process of starting, composing, revising, and editing. Lecture 4 hours per week.

ENG 03 Preparing for College Writing II
(3–4 CR) Emphasizes strategies within the writing process to help students with specific writing situations. Develops techniques to improve clarity of writing and raise proficiency to the level necessary for entrance into particular curricula. Lecture 3–4 hours per week.

ENG 04 Reading Improvement I
(4 CR) Helps students improve their reading processes to increase their understanding of reading materials. Includes word forms and meanings, comprehension techniques, and ways to control reading pace. Lecture 4 hours per week.

ENG 06 Reading in the Content Areas
(1–3 CR) Presents reading methods and study skills appropriate for specific courses to increase students' reading and studying efficiency. Must be taken with a content area course. Course content may be planned jointly by faculty in English and related discipline. Variable hours per week.

ENG 07 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 111 College Composition I
(3 CR) Prerequisites: Placement scores, ENG 01, ENG 03, ENG 04, ENG 07, or exemption at admission. 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 115 Technical Writing
(3 CR) Develops ability in technical writing through extensive practice in composing technical reports and other documents. Guides students in achieving voice, tone, style, and content in formatting, editing, and graphics. Introduces students to technical discourse through selected reading. Lecture 3 hours per week.

ENG 135 Applied Grammar
(3 CR) Develops ability to edit and proofread correspondence and other documents typically produced in business and industry. Instructs the student in applying conventions of grammar, usage, punctuation, spelling, and mechanics. Lecture 3 hours per week.

ENG 150 Children's Literature
(3 CR) Surveys the history of children's literature, considers learning theory and developmental factors influencing reading interests, and uses bibliographic tools in selecting books/materials for recreational interests and educational needs of children. Lecture 3 hours per week.

ENG 210 Advanced Composition
(3 CR) Prerequisite: ENG 112 or divisional approval. Helps students refine skills in writing non-fiction prose. Guides development of individual voice and style. Introduces procedures for publication. Lecture 3 hours per week.

ENG 215-216 Creative Writing – Fiction I-II
(3 CR, 3 CR) Introduces the fundamentals and techniques of writing short and long fiction. Lecture 3 hours per week.

ENG 217-218 Creative Writing– Poetry I-II

(3 CR, 3 CR) Introduces the fundamentals and techniques of writing poetry. Lecture 3 hours per week.

ENG 241-242 Survey of American Literature I-II

(3 CR, 3 CR) Prerequisite: ENG 112. Examines American literary works from colonial times to the present, emphasizing the ideas and characteristics of our national literature. Involves critical reading and writing. Lecture 3 hours per week.

ENG 243-244 Survey of English Literature I-II

(3 CR, 3 CR) Prerequisite: ENG 112. Studies major English works from Anglo-Saxon period to the present, emphasizing ideas and characteristics of the British literary tradition. Involves critical reading and writing. Lecture 3 hours per week.

ENG 251-252 Survey of World Literature I-II

(3 CR, 3 CR) Examines major works of world literature. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 257 Mythology

(3 CR) Prerequisite: ENG 112 or division approval. Studies selected mythologies of the world, emphasizing their common origins and subsequent influence on human though and expression. Involves critical reading and writing. Lecture 3 hours per week.

ENV – Environmental Science

ENV 161 Introduction to Environmental Compliance

(3 CR) Examines the statutory history of significant environmental legislation and the promulgation of rules and regulations attendant to these laws. Emphasis will be placed on 40 CFR and appropriate Virginia environmental code. Students will gain basic proficiency in the proper sampling protocols for soil, water, and air. Lecture 3 hours per week.

ENV 162 Environmental Principles in Public Health

(3 CR) Examines critical factors involved in environmental/public health administration in the current post-911 society. Topics covered will include basic risk analysis and fate and transport modeling environmental microbiology and toxicology with implications on genetics, GIS, and bioterrorism/infectious diseases. Lecture 3 hours per week.

ENV 221 Natural Resource Management

(4 CR) Examines environmental aspects of mining and petroleum exploration, management of forest resources, surfaces and groundwater resource management and alternative energy systems. Students will become familiar with the regulatory environment in mining and exploration and examine case histories of reclamation and remediation projects in both hard rock and fossil fuels. Applications such as high yield forestry and renewable energy will be examined in light of global sustainability issues and changing economics of oil. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

ESL – English as a Second Language

ESL 14 English as a Second Language: Oral and Written Communications I

(3–6 CR) Provides instruction and practice in the writing process, emphasizing development of fluency writing and competence in structural and grammatical patterns of written English. Variable hours per week.

ETR – Electronics Technology

ETR 113-114 DC and AC Fundamentals I-II

(4 CR, 4 CR) Prerequisite for ETR 113: Algebra I. Prerequisite for ETR 114: ETR 113. Co-requisite: MTH 116. Studies DC and AC circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze and measure electrical quantities. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 123-124 Electronic Applications I-II

(1 CR, 1 CR) Co-requisite: ETR 141-142. Provides laboratory and shop assignment/jobs as applied to basic electronic devices, circuits, and systems with emphasis on practical measurements. May require preparation of a report as an out-of-class activity. Laboratory 3 hrs per week.

ETR 141-142 Electronics I-II

(3 CR, 3 CR) Prerequisite: ETR 113. Introduces electronic devices as applied to basic electronic circuits and systems. Lecture 3 hours per week.

ETR 255 Active Devices and Circuits

(3 CR) Prerequisite: ETR 114 and MTH 116 or equivalent. Teaches theory of active devices and circuits, devices and circuit parameters, semiconductor characteristics and the application of circuits to active systems. Includes testing and analysis of active devices and circuits. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ETR 261-262 Microprocessor Application I-II

(3 CR, 3 CR) Prerequisite: ETR 281 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 281 Digital Systems

(3 CR) Prerequisite: ETR 113 or equivalent. Includes basic numbering systems, Boolean Algebra, logic circuits and systems, pulse circuits and pulse logic systems as applied to computer and microprocessor technology. Lecture 2 hours. Laboratory 3 hours. Total 5 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 and ELE 239. 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 110 Principles of Banking

(3 CR) Presents nearly every aspect of banking, providing a comprehensive introduction to the diversified services and operations of the banking industry. Focuses on new trends gaining attention in banking circles. Recommended for all banking students. (AIB Approved). Lecture 3 hours per week.

FIN 125 Law and Banking: Principles

(3 CR) Presents a banker's guide to law and legal issues with special emphasis on the Uniform Commercial Code. Includes summaries of law pertaining to contracts, real estate, and bankruptcy. Highlights legal implications of consumer lending, sources and applications of banking law, torts and crimes, real and personal property, and a complete glossary of legal terminology related to banking. (AIB Approved). Lecture 3 hours per week.

FIN 150 Economics for Bankers

(3 CR) Provides an introduction to the fundamental principles of economics. Places special emphasis on topics of importance to bankers. Highlighted are supply and demand theory, economic systems, the business cycle, and inflation-causes, effects, and measurement. (AIB Approved). Lecture 3 hours per week.

FIN 215 Financial Management

(3 CR) Prerequisites: ACC 212, ACC 214, BUS 125 and BUS 225. Introduces basic financial management topics including statement analysis, working capital, capital budgeting, and long-term financing. Focuses on Net Present Value and Internal Rate or Return techniques, lease vs. buy analysis, and Cost of Capital computations. Uses problems and cases to enhance skills in financial planning and decision making. Lecture 3 hrs. per week.

FIN 256 Marketing for Bankers

(3 CR) Focuses on understanding the basic concepts necessary to successfully market bank products and services. Develops an understanding of the functions of public relations, advertising, sales promotion, selling, and distribution. Highlights customer motivation and buying behavior, the marketing management process and marketing and the wholesale side of banking. (AIB Approved). 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; introductionto fire protection systems; introduction to fire strategy and tactics. Lecture 3 hours per week.

FST 111 Hazardous Materials Response

(3 CR) Studies hazardous materials storage, standards, and applicable laws designed to protect the public and emergency personnel. Discusses specific methods and techniques used by the emergency worker in the abatement of hazardous materials incidents. Lecture 3 hours per week.

FST 115 Fire Prevention

(3 CR) Provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, useof fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fore investigation, and fire and life-safety education. Lecture 3 hours per week.

FST 120 Occupational Safety and Health for the Fire Service

(3 CR) Provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, useof fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education. Lecture 3 hours per week.

FST 135 Fire Instructor I

(3 CR) Emphasizes development of teaching methods and aids, including role-playing, small group discussion and development of individual learning methods and materials. Requires students to develop lesson plans and make presentations on appropriate topics. (Based on current requirements of NFPA 1041, Standards for Fire Instructor Professional Qualifications and prepares student for certification as Fire Instructor I and II. Lecture 3 hours per week.

FST 140 Fire Officer I

(4 CR) Prerequisite: FST 105. Presents a basic course to help individuals develop the skills needed to supervise and direct personnel, and manage resources at the company level; and is based on the current requirements of the NFPA 1021, Standards for Fire Officer Professional Qualifications. Prepares student for certification as Fire Officer I. Lecture 4 hours per week.

FRE – French

FRE 101-102 Beginning French I-II

(4 CR, 4 CR) 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) Prerequisite: FRE 102 or equivalent. Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. Lecture 3 hours per week.

GEO – Geography

GEO 200 Introduction to Physical Geography

(3 CR) Studies major elements of the natural environment including earth-sun relationship, land forms, weather and climate, natural vegetation and soils. Introduces the student to types and uses of maps. Lecture 3 hours per week.

GEO 210 People and the Land: an Introduction to Cultural Geography

(3 CR) Focuses on the relationship between culture and geography. Presents a survey of modern demographics, landscape modification, material and non-material culture, language, race and ethnicity, religion, politics, and economic activities. Introduces the student to types and uses of maps. Lecture 3 hours per week.

GEO 220 World Regional Geography

(3 CR) Studies physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions, and examines the geographical background of those problems. Introduces the student to types and uses of maps. Lecture 3 hours per week.

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 structure. Lecture 4 hours per week.

GER 103-104 Basic Spoken German I-II

(3 CR, 3 CR) Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

GER 201-202 Intermediate German I-II

(3 CR, 3 CR) Prerequisite: GER 102. Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Lecture 3 hours per week.

GIS – Geographic Information Systems

GIS 200 Geographical Information Systems I

(4 CR) Prerequisite: EGR 216, ITE 115, or instructor approval. Provides hands-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 201 Geographic Information Systems II

(4 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 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 205 GIS 3-Dimensional Analysis

(4 CR.) Co-requisite: GIS 201. Introduces GIS 3D (three-dimensional) concepts and practices with a concentration on displaying, creating and analyzing spatial GIS data using 3D. Covers 3D shape files, 3D data formats such Tin's, DEM's, grids and controlling the perspective and scale of 3D data through, rotating, panning and zooming. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 210 Understanding Geographic Data

(4 CR) Co-requisite: GIS 200. Provides the student an introduction to geographic data and the principles behind their construction. Introduces the concepts for measuring locations and characteristics of entities in the real world. Exposes the student to the limitations and common characteristics of geographic data. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GOL - Geology

GOL 105 Physical Geology

(4 CR) 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) Prerequisite: GOL 105 recommended but not required. 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.

HCT – Health Care Technology

HCT 100 Introduction to Health Care Occupations

(2 CR) Explores various career opportunities in the health care field and the relationships between various health-related occupations. Encourages career planning and decision making. Lecture 2 hours per week.

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 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 155 Life in Colonial Virginia

(3 CR) Studies life in Virginia before the American Revolution, including politics, economics, customs, culture, and the slave plantation system. Lecture 3 hours per week.

HIS 181 History and Theory of Historic Preservation

(3 CR) Provides a foundation and introduction to historic preservation practices and issues in Virginia and the United States. Emphasizes legislation, policies, and methodologies that form our present national, state, and local preservation systems. 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 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.

HIT — Health Information Technology

HIT 121 Medical Transcription I

(4 CR) Prerequisite: Typing 40 words per minute.Co-requisite: HIT 196 and all curriculum requirements must be completed. Develops skills in the transcription of various medical record reports, use of transcription references, and proofreading reports. Evaluates the productivity and organization of transcription departments/services and the quality of transcribed reports and equipment utilized. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

HIT 125 Medical Report Transcription
(3 CR) Prerequisite: AST 245 or department approval and ability to type 40 words per minute. Develops skill in the transcription and preparation of reports for the medical record and in the operation and care of dictating and transcribing equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HIT 130 Healthcare Information Systems
(3 CR) Focuses on microcomputer applications, information systems and applications in the healthcare environment. Lecture 3 hours per week.

HIT 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.

HIT 196 On-Site Training in Medical Transcription for Medical Office Transcriptionist
(3 CR) Prerequisite: All curriculum requirements must be completed. Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the College. Credit/work ratio not to exceed 2 hours. May be repeated for credit.Variable hours.

HIT 196 On-Site Training in Medical Transcription for Medical Office Specialist
(3 CR) Prerequisite: All curriculum requirements must be completed. Co-requisite: HIT 254. Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the College. Credit/work ratio not to exceed 2 hours. May be repeated for credit.Variable hours.

HIT 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.

HIT 253 Health Records Coding
(4 CR) Prerequisite: HLT 143. Co-requisite: HLT 144. It is strongly recommended that students with no coding background take HIT 195. Examines the development of coding classification systems. Introduces ICD-9-CM coding classification system, its format and conventions. Stresses basic coding steps and guidelines according to body systems. Provides actual coding exercises in relation to each system covered. Lecture 4 hours.

HIT 254 Advanced Coding and Reimbursement
(4 CR) Prerequisite: HIT 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.

HIT 290 Coordinated Internship
(1–5 CR) Prerequisite: All curriculum requirements must be completed. Departmental approval required. Supervises on-the-job training in selected business, industrial or service firms coordinated by the College. Variable hours.

HLT - Health

(Only the health courses below marked with an asterisk (*) are approved to meet the HLT/PED requirement.)

HLT 105* Cardiopulmonary Resuscitation
(1 CR) Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression, choking, life-threatening emergencies, and sudden illness. Lecture 1 hour per week.

HLT 106* First Aid and Safety
(2 CR) Focuses on the principles and techniques of safety and first aid. Lecture 2 hours per week.

HLT 110 Concepts of Personal and Community Health
(2–3 CR) Studies the concepts related to the maintenance of health, safety, and the prevention of illness at the personal and community level. Lecture 2–3 hours per week.

HLT 121* Introduction to Drug Use and Abuse
(3 CR) Explores the use and abuse of drugs in contemporary society with emphasis upon sociological, physiological, and psychological effects of drugs. Lecture 3 hours per week.

HLT 130* Nutrition and Diet Therapy
(1 CR) Studies nutrients, sources, functions, and requirements with an introduction to diet therapy. Lecture 1 hour per week.

HLT 135* Child Health and Nutrition
(3 CR) Focuses on the physical needs of preschool children and methods to meet these needs. Emphasizes health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases, and safety related to health, growth, and development. Lecture 3 hours per week.

HLT 138* Principles of Nutrition
(1–2 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 1–2 hours per week.

HLT 143-144 Medical Terminology I-II

(3 CR, 3 CR) Provides an understanding of medical abbreviations and terms. Includes study of prefixes, suffixes, word stems, and technical terms emphasizing proper spelling, pronunciation, and usage. Emphasizes more complex skills and techniques in understanding medical terminology. Lecture 3 hours per week.

HLT 200* Human Sexuality

(3 CR) Provides a basic understanding of human sexuality. Includes anatomy, physiology, pregnancy, family planning, venereal diseases, and sexual variations. 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 individual nutritional needs. Lecture 3 hours per week.

HLT 250 General Pharmacology

(2–3 CR.) Emphasizes general pharmacology for the health related professions covering general principles of drug actions/reactions, major drug classes, specific agent within each class, and routine mathematical calculations needed to determine desired dosages. Lecture 2–3 hours per week.

HLT 261-262 Basic Pharmacy I-II

(3 CR, 3 CR) Explores the basics of general pharmacy, reading prescriptions, symbols, packages, and pharmacy calculations. Teaches measuring compounds of drugs, dosage forms, drug laws, and drug classifications. Lecture 3 hours per week.

HLT 263-264 Basic Pharmacy I-II Lab

(1 CR, 1 CR) Provides practical experience to supplement instruction in HLT 261-262. Should be taken concurrently with HLT 261-262, in appropriate curricula, as identified by the college. Laboratory 3 hours per week.

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 2–3 hours. Laboratory 0–3 hours. Total 3–5 hours per week.

HRI 119 Applied Nutrition for Food Service

(3 CR) Studies food composition, nutrition science, and application of nutrition principles by the food service professional. Provides the student with a basic understanding of human nutrition and application of nutrition in the service of commercially prepared meals. Lecture 3 hours.

HRI 120 Principles of Food Preparation

(4 CR) Applies scientific principles and techniques to the preparation of food, including carbohydrates, such as fruits, vegetables, sugars and starches; fats, including both animal and vegetable, as well as natural and manufactured; and proteins, such as milk, cheese, eggs, meats, legumes, fish and shellfish. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

HRI 128 Principles of Baking

(3 CR) 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 134 Food and Beverage Service Management

(3 CR) Provides a conceptual and technical framework for managing the service of meals in a variety of commercial settings. Studies the integration of production and service delivery, guest contact dynamics, reservations management and point-of-sale systems. Lecture 3 hours per week.

HRI 145 Garde Manger

(3 CR) 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 159 Introduction to Hospitality Industry Computer Systems

(4 CR) Familiarizes students with computerized information technology to manage information, support decision-making and analysis, improve processes, increase productivity, and enhance customer service in the hospitality industry. Lecture 3 hour. Laboratory 2 hours.Total 5 hours per week.

HRI 206 International Cuisine

(3 CR) 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) 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 218 Fruit, Vegetable, and Starch Preparation

(3 CR) Instructs the student in the preparation of fruits, vegetables, grains, cereals, legumes and farinaceous products. Promotes the knowledge/skills necessary to prepare menu items from fruits, vegetables, and their byproducts, and to select appropriate uses as meal components. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 219 Stock, Soup, and Sauce Preparation

(3 CR) 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) Provides the study and preparation of meat, poultry, shellfish, fish, and game. Promotes the knowledge/skills required to select appropriate use of these foods as meal components. Lecture 2 hour per week. Laboratory 3 hours. Total 5 hours per week.

HRI 224 Recipe and Menu Management

(3 CR) Prerequisite: HRI 159 or equivalent. Presents a comprehensive framework for creating and evaluating recipes and menus for commercial and noncommercial food service operations. Requires students to use microcomputer software to design recipes, recipe files, and menus. Teaches students menu engineering analysis and methods for optimizing menu contribution margin. Lecture 3 hour per week.

HRI 251 Food and Beverage Cost Control I

(3 CR) Prerequisite: MTH 120 or program head approval. Presents methods of pre-cost and pre-control as applied to the menu, purchasing, receiving, storing, issuing, production, sales and service which result in achievement of an operation's profit potential. Emphasizes both manual and computerized approaches. Lecture 3 hour per week.

HRI 290 Coordinated Internship in Hospitality Management

(3 CR) Supervises the on-the-job training in selected health agencies, business, industrial, or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

HRT - Horticulture

HRT 110 Principles of Horticulture

(3 CR) Introduces concepts of plant growth and development. Covers horticultural practices, crops and environmental factors affecting plant growth. Lecture 3 hours per week.

HRT 115 Plant Propagation

(3 CR) Teaches principles and practices of plant propagation methods. Examines commercial and home practices. Provides experience in techniques using seed-spores, cuttings, grafting, budding, layering, and division. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 121 Greenhouse Crop Production

(3 CR) Examines commercial practices related to production of floricultural crops. Considers production requirements, environmental control and management, and cultural techniques. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 127 Horticultural Botany

(3 CR) Studies taxonomy, anatomy, morphology, physiology, and genetics of plants as applied to identification, propagation and culture. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 201-202 Landscape Plant 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 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 236 Interior Landscaping
(2 CR) Examines principles and practices of interior landscaping in residential and commercial buildings. Covers design, selection, planting, and maintenance of plants suitable for indoor use. Includes assessment of client needs, preparation of contracts and specifications, and construction materials. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HRT 247 Indoors Plants
(2 CR) Studies identification, culture and uses of indoor plants in interior landscaping. Includes tropical, subtropical and non-hardy temperature plants. Teaches scientific and common names of plants. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HRT 259 Arboriculture
(3 CR) Studies the techniques of tree care. Covers surgery, pruning, insect and disease recognition and control, fertilization, cabling, and lightning rod installation. Lecture 2 hours. Laboratory 2 hours. Total 4 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 greens, identification and use of equipment, and conditioning and handling of flowers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 265 Professional Floral Design and Shop Management
(3 CR) Prerequisite: HRT 260. Studies location, management and operation of a retail florist. Includes ordering, telemarketing, account handling, advertising and marketing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 267 Silk and Dried Flower Arranging
(2 CR) Teaches skills required for composition of silk or dried floral arrangements. Includes a discussion of silk floral materials, supplies needed, and use of appropriate dried florals. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HRT 269 Professional Turf Care
(3 CR) Covers turfgrass identification, selection, culture, propagation, and pest control. Surveys commercial turf care operations and use of common equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 275 Landscape Construction and Maintenance
(3 CR) Examines practical applications of commercial landscape construction techniques and materials used. Covers construction, planting, and maintenance. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 285 Management of Horticulture Business
(3 CR) Studies the business and selling practices, which relate to wholesale and retail horticulture businesses including garden centers, greenhouses, nurseries, and flower shops. Examines planning and layout, suppliers, merchandising, maintenance, and display of horticultural items. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 296 Training in Arboretum Internship
(2 CR) Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the horticulture program office. Variable hours.

HRT 297 Cooperative Education
(2 CR) Supervises on-the-job training for pay in approved business, industrial and service firms, coordinated by the horticulture program office. Variable hours.

HUM – Humanities

HUM 201 Survey of Western Culture I
(3 CR) Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers the following periods: Ancient and Classical, Early Christian and Byzantine, Medieval, and Early Renaissance. Lecture 3 hours per week.

HUM 202 Survey of Western Culture II
(3 CR) Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers time periods: Renaissance, Baroque, Enlightenment, Romantic, and Modern. Lecture 3 hours per week.

IDS – Interior Design

IDS 100 Theory and Techniques of Interior Design
(3 CR) Introduces drafting and presentation, color theory, and coordination, space planning and arrangement of furnishings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 105 Architectural Drafting for Interior Design

(3 CR) Introduces tools and equipment, lettering, methods of construction, designing and delineation of architecture. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 109 Styles of Furniture and Interiors

(3 CR) Teaches history of furnishings and interiors from the ancient world to the present. Lecture 3 hours per week.

IDS 116 Period Residential Design

(4 CR) Prerequisite: IDS 109. Plans a period-inspired interior. May use field trips and visual materials to enhance this project. Presents problems and their solutions found in this kind of project. May require a final visual presentation with all necessary furnishings, materials, and color boards with rendered perspectives. Prerequisites IDS 104, 105, 106, and 109. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

IDS 205 Materials and Sources

(3 CR) Presents textiles, floor and wall coverings, and window treatments. Emphasizes construction, fiber, finish, and code applications. May use research and field trips to trade sources representing these elements. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 206 Lighting and Furnishings

(3 CR) Provides instruction in lighting terminology and calculations and instructions in techniques of recognizing quality of construction in furnishings and related equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 225 Business Procedures

(3 CR) Provides instruction in preparation of contracts, purchase orders, specifications, and other business forms used in the interior design field. Lecture 3 hours per week.

IDS 245 Computer Aided Drafting for Interior Designers

(3 CR) Prerequisite: Basic computer literacy. Instructs in the use of the computer for drafting of floor plans, elevations, perspectives, shadowing, lighting and color applications using AutoCad software and the architectural and engineering software. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

IND – Industrial Technology Program

IND 230 Applied Quality Control

(3 CR) Prerequisite: EGR 216 or permission from instructor. 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.

INT – Interpreter Education

INT 130 Interpreting: An Introduction to the Profession

(3 CR) Introduces basic principles and practices of interpreting, focusing on the history of the profession, logistics of interpreting situations, regulatory and legislative issues, resources, and the Code of Ethics. Describes the state quality assurance screening and national certification exam systems, including test procedures. Lecture 3 hours per week.

ITD – Information Technology Database and Web Design

ITD 110 Web Page Design I

(3 CR) Provides a working knowledge of web site designs, construction, and management using HTML or XHTML. Course content 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: Recommended ITD 110. 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) Provides skills for designing both web-based and standalone applications for wireless devices. Detailed discussions of the needs for applications including mobile phones and a range of rich handheld devices such as PDAs will be addressed. This course 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

(4 CR) Introduces the student to Relational Database and Relational Database theory. Course content includes planning, defining and using a database; table design, linking, and normalization; types of database, database description and definition. Lecture 4 hours per week.

ITD 132 Structured Query Language

(3 CR) Provides a working introduction to commands, functions and operators used in SQL for extracting data from standard databases. Lecture 3 hours per week.

ITD 136 Database Management Software

(3–4 CR) Covers an introduction to relational database theory and how to administer and query databases using multiple commercial database systems. Lecture 3–4 hours per week.

ITD 210 Web Page Design II
(3 CR) Prerequisite: ITD 110 or instructor's permission. Provides advanced techniques in web site planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editor software(s). Lecture 3 hours per week.

ITD 212 Interactive Web Design
(3 CR) Prerequisite: ITD 110. 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: ITP 246 or 244 or instructor's permission. Provides techniques to plan and to design a platform-independent commerce Web server. Course content 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 238 Local and Remote Data Storage for Wireless Devices
(3 CR) Prerequisites: ITP 214 and ITP 224. Provides skills for utilizing mobile edition databases and file systems to support wireless applications. Local and remote development will be implemented for systems including mobile phones and a range of handheld devices such as PDAs. Database instances and file systems for both connected and synchronized applications will be addressed. Students will gain skills in using standard SQL (structured query language) to manipulate mobile databases.

ITD 250 Database Architecture and Administration
(3 CR) Prerequisite: ITD 136 or instructor approval. Provides in-depth knowledge about the underlying architecture of databases and the handling of database administration. Lecture 3 hours per week.

ITD 258 Database Performance and Tuning
(3 CR) Prerequisite: ITD 136 or instructor permission. Provides instruction to optimize the performance of a database management system. Course content includes methods for tuning data access and storage and discussions of resolving data performance problems. Maps to Microsoft® test 70-229.
Lecture 3 hours per week.

ITE – Information Technology Essentials

ITE 102 Computer and Information Systems
(1 CR) This course 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) The student will learn computer concepts and Internet skills and use a software suite, which includes word processing, spreadsheet, database, and presentation software to demonstrate skills required for computer literacy. Recommended prerequisite keyboarding skills. **CIS may not be substituted for ITE 115.** Lecture 3 hours per week.

ITE 140 Spreadsheet Software
(3 CR) Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics include type and edit text in a cell, enter data on multiple worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data. Covers MOS Excel objectives Lecture 3 hours. Total 3 hours per week.

ITE 160 Introduction to E-Commerce
(3 CR) Introduces student to electronic commerce (e-commerce) and the driving forces behind business concerns on the Web in the 20th century. Covers business-to-consumer and business-to-business applications, and support mechanism such as electronic payments and fund transfers. Discusses legal and ethical issues applying to e-commerce. Lecture 3 hours per week.

ITE 180 Help Desk Support Skills
(3 CR) Emphasizes instruction in customer support techniques required for analyzing and coordinating software and hardware solutions for end-user needs. includes evaluation and communication techniques required to provide help desk support necessary to transfer knowledge and enable implementation of a solution. Lecture 3 hours per week.

ITE 182 User Support/Help Desk Principles
(3 CR) Introduces a variety of tools and techniques that are used to provide user support in help desk operations. Includes help desk concepts, customer service skills, troubleshooting problems, writing for end users, help desk operations and software, needs analysis, facilities management, and other related topics related to end user support. 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. Course content emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Course content also includes selected topics in network implementation, support and LAN/WAN connectivity. Maps to CompTIA's Network+ certification. Lecture 4 hours per week.

ITN 114 Windows® XP Professional

(3 CR) Prerequisite: ITN 101. Provides instruction in installation, configuration, administration, and troubleshooting of Windows® XP Professional as a desktop operating system in a networked data communications environment. Maps to Microsoft® Test 70-270. Lecture 3 hours per week.

ITN 115 Windows® 2003 Server (SER)

(3 CR) Prerequisite: ITN 101. Consists of instruction that teaches student how to manage and maintain a Microsoft® Windows® Server 2003 environment. Maps to Microsoft® test 70-290. Lecture 3 hours per week.

ITN 116 Windows® 2003 Network Infrastructure Implementation, Management, and Maintenance (NI-IMM)

(3 CR) Prerequisite: ITN 115. This course teaches the student how to implement, manage, and maintain a Microsoft® Windows® Server 2003 network infrastructure. Maps to Microsoft® Test 70-291. Lecture 3 hours per week.

ITN 117 Windows® 2003 Network Infrastructure Planning and Maintenance (NI-PM)

(3 CR) Prerequisite: ITN 115. This course teaches how to plan and maintain a Microsoft® Windows® Server 2003 network infrastructure. Maps to Microsoft® Test 70-293. Lecture 3 hours per week.

ITN 120 Wireless Network Administration

(3 CR) Provides instruction in the fundamentals of wireless information systems. Course content includes terms, standards, components, and operating requirements in the design and implementation of wireless networks. Lecture 3 hours per week.

ITN 170 Linux System Administration

(3 CR) Prerequisite: ITN 101 or instructor's permission. Course content focuses on the installation, configuration and administration of the Linux operating system and emphasizes the use of Linux as a network client and workstation. Maps to CompTIA Linux+ certification. Lecture 3 hours per week.

ITN 171 UNIX I

(3 CR) Prerequisite: ITN 101 or instructor's permission. Provides an introduction to the UNIX operating system. Teaches log in procedures, file creation, UNIX file structure, input/output control, and the UNIX shell. Lecture 3 hours per week.

ITN 261 Network Attacks, Computer Crime and Hacking

(3 CR) Prerequisite: ITN 101 or instructor's permission. Encompasses in-depth exploration of various methods for attacking and defending a network. Explores network security concepts from the viewpoint of hackers and their attack methodologies. Includes topics about hackers, attacks, Intrusion Detection Systems (IDS) malicious code, computer crime and industrial espionage. Lecture 3 hours per week.

ITN 270 Advanced Linux Network Administration

(3-4 CR) Prerequisite: ITN 170 or instructor's permission. Focuses instruction on the configuration and administration of the Linux operating system as a network server. Course content emphasizes the configuration of common network services such as routing, http, DNS, DHCP, ftp, telnet, SMB, NFS, and NIS. Lecture 3-4 hours per week.

ITN 271 UNIX II

(3 CR) Prerequisite: ITN 171 or instructor permission. Course content focuses on shell scripting and how to automate activities on Unix. This course will cover the shell, common helper utilities, and common system procedures like startup and login. This course will also cover sed and awk in detail. Lecture 3 hours per week.

ITP – Information Technology Programming

ITP 100 Software Design

(3 CR) Prerequisite: Recommended pre- or co-requisite is high school Algebra. 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 112 Visual Basic .NET I

(4 CR) Prerequisite or co-requisite: ITP 100 or instructor's approval. Provides instruction in fundamentals of object-oriented programming using Visual Basic.NET and the .NET framework. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of graphical user interface applications. Lecture 4 hours per week.

ITP 120 Java Programming I
(4 CR) Prerequisite or co-requisite: ITP 100 or instructor's approval. Provides instruction in fundamentals of object-oriented programming using Java. Emphasis is on program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. Lecture 4 hours per week.

ITP 132 C++ Programming I
(3 CR) Prerequisite: ITP 100. Provides instruction in fundamentals of object-oriented programming and design using C++. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of C++ applications. Lecture 3 hours per week.

ITP 136 C# Programming I
(4 CR) Prerequisite: Recommended ITP 100. 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 175 Concepts of Programming Languages
(3 CR) Prerequisite: One semester of two different languages or instructor approval. This course is designed to teach the fundamental concepts of computer programming languages. Emphasis is given into the architectural reasons behind programming language constructs. Students who take this course will have a better understanding of how and why programming languages work the way they do. Lecture 3 hours per week.

ITP 212 Visual Basic .NET II
(4 CR) Prerequisite: ITP 112, ITD 136 (Co-requisite). Provides instruction in application of advanced object-oriented techniques to application development. Course content emphasizes database connectivity, advanced controls, web forms, and web services using Visual Basic.NET. Lecture 4 hours per week.

ITP 214 Windows Mobile Development
(3 CR) Prerequisite: ITP 112. Provides skills for creating mobile enterprise solutions by using the Smart Device Extensions for Microsoft® Visual Studio .NET and the Microsoft® .NET Compact Framework for wireless devices. Applications utilizing the .NET Compact Framework will be developed for systems including mobile phones and a range of rich handheld devices such as PDAs. Both enterprise business applications and game applications will be addressed. Lecture 3 hours per week.

ITP 215 XML Web Services
(4 CR) Prerequisite: ITP 112 or instructor permission. This course is designed to teach the techniques for developing and implementing Web-based applications with Web forms, ASP.NET, and the Microsoft® .NET Framework. Included are Window® services, .NET remote objects, XML Web services, security, and consuming and manipulating Web data. Lecture 4 hours per week.

ITP 216 Analyzing Requirements for Microsoft.NET Solution Archi
(3–4 CR) Encompasses instruction in analyzing requirements and defining Microsoft.NET solution architectures. Includes envisioning the solution, gathering and analyzing business requirements, developing specifictions, creating the conceptual, physical and logical design, and creating standards and processes. Maps to Microsoft test 70-300. Lecture 3--4 hours per week.

ITP 220 Java Programming II
(4 CR) Prerequisite: ITP 120, ITD 136 (Co-requisite). Provides instruction in application of advanced object-oriented techniques to application development using Java. Course content emphasizes database connectivity, inner classes, collection classes, networking, and threads. Lecture 4 hours per week.

ITP 224 Mobile Java ME
(3 CR) Prerequisite: ITP 120. Provides skills for creating Java ME-based applications for wireless devices. Applications utilizing the Java ME architecture and Java Specification Requests (JSRs) will be developed for systems including mobile phones and a range of rich handheld devices such as PDAs. Both enterprise business applications and game applications will be addressed. Lecture 3 hours per week.

ITP 225 Web Scripting Languages
(4 CR) Prerequisite: ITD 110 and ITP 100 or instructor's 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 building and maintain interactive Web sites. Students will develop Web applications utilizing client-side and server-side scripting languages along with auxiliary tools needed for complete applications. Lecture 4 hours per week.

ITP 244 ASP.NET – Server-Side Programming
(4 CR) Prerequisite: ITD 110, ITP 112. Provides 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 4 hours per week.

ITP 246 Java Server-Side Programming
(4 CR) Prerequisite: ITD 110 and ITP 220 or instructor's approval. Provides instruction in integration of web-based clients and server-side Java to three-tier business applications. Course content will use tools UML, XML, Java servlets, JSPs and JDBC database access. Lecture 4 hours per week.

ITP 248 E-Commerce Application Integration
(3 CR) Prerequisite: ITP 246 and ITD 136 or instructor's permission. Teaches the implementation of platform-independent e-commerce Web applications. Focuses on building end-to-end e-commerce skills, including comparison and selection of commerce architecture, installation and configuration, security considerations, and the development of a complete business-to-consumer and a business-to-business site. Lecture 3 hours per week.

ITP 298 Capstone
(3 CR) Prerequisite: Instructor approval. Course content requires completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. Lecture 3 hours per week.

LGL – Legal Assisting

LGL 110 Introduction to Law and the Legal Assistant
(3 CR) Introduces various areas of law in which a legal assistant may be employed. Includes study of court system (Virginia and federal) as well as a brief overview of criminal law, torts, domestic relations, evidence, ethics, the role of the legal assistant and other areas of interest. Lecture 3 hours per week.

LGL 115 Real Estate Law for Legal Assistants
(3 CR) Studies law of real property and gives in-depth survey of more common types of real estate transactions and conveyances such as deeds, contracts, leases, and deeds of trust. Focuses on drafting these various instruments and studies the system of recording and search of public documents. Lecture 3 hours per week.

LGL 117 Family Law
(3 CR) Studies elements of a valid marriage, grounds for divorce and annulment, separation, defenses, custody, support, adoptions, and applicable tax consequences. Includes property settlement, pre- and ante-nuptial agreements, pleadings, and rules of procedure. May include specific federal and Virginia consumer laws. Lecture 3 hours per week.

LGL 125 Legal Research
(3 CR) Provides an understanding of various components of the law library, and emphasizes research skills through the use of digests, encyclopedias, reporter systems, codes, Shepard's Citations, ALR, and other research tools. May include overview of computer applications and writing projects. Lecture 3 hours per week.

LGL 126 Legal Writing
(3 CR) Prerequisite: ENG 111 or permission of instructor. Studies proper preparation of various legal documents, including legal memoranda, letters, and pleadings. Involves practical applications. May include case and appellate briefs. Lecture 3 hours per week.

LGL 200 Ethics for the Legal Assistant
(1 CR) Examines general principles of ethical conduct applicable to legal assistants. Includes the application of rules of ethics to the practicing legal assistant. Lecture 1 hour per week.

LGL 210 Virginia and Federal Procedure
(3 CR) Examines the rules of procedure in the Virginia and federal courts, including the Federal Rules of Civil Procedure and the Rules of Practice and Procedure in the District Courts, Circuit Courts, Virginia Court of Appeals, and the Supreme Court of Virginia. Lecture 3 hours per week.

LGL 215 Torts
(3 CR) Studies fundamental principles of the law of torts. May include preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes personal injury, products liability, and malpractice cases. Lecture 3 hours per week.

LGL 216 Trial Preparation and Discovery Practice
(3 CR) Prerequisite: LGL 110 and LGL 125 or instructor's permission. Examines the trial process, including the preparation of a trial notebook, pretrial motions, and orders. May include the preparation of interrogatories, depositions, and other discovery tools used in assembling evidence in preparation for trial or an administrative hearing. Lecture 3 hours per week.

LGL 218 Criminal Law
(3 CR) Focuses on major crimes, including their classification, elements of proof, intent, conspiracy, responsibility, parties, and defenses. Emphasizes Virginia Law. May include general principles of applicable constitutional law and criminal procedures. Lecture 3 hours per week.

LGL 225 Estate Planning and Probate
(3 CR) Introduces various devices used to plan an estate, including wills, trusts, joint ownership and insurance. Considers various plans in light of family situations and estate objectives. Focuses on practices involving administration of an estate, including taxes and preparation of forms. Lecture 3 hours per week.

LGL 230 Legal Transactions
(3 CR) Presents an in-depth study of general contract law, including formation, breach, enforcement, and remedies. May include an overview of the Uniform Commercial Code sales, commercial paper, and collections. Lecture 3 hours per week.

LGL 235 Legal Aspects of Business Organizations
(3 CR) Studies the fundamental principles of agency law and the formation of business organizations. Includes sole proprietorship, partnerships, corporations, limited liability companies, and other business entities. Reviews preparation of the documents necessary for the organization and operation of businesses. Lecture 3 hours per week.

LGL 238 Bankruptcy
(3 CR) Provides a practical understanding of nonbankruptcy 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.

LGL 290 Coordinated Internship in Legal Assisting
(3 CR) Prerequisite: Approval of program head. Supervised on-the-job training in law-related fields approved by the College.

MEC - Mechanical Engineering Technology

MEC 113 Materials and Processes of Industry
(3 CR) Studies engineering materials and accompanying industrial manufacturing processes. Investigates nature of materials structure and properties from a design standpoint. Analyzes the effects of the various processes on materials and the process themselves. Includes machining, casting, forming, molding, hot/cold working, chipless machining, and welding. Addresses quality assurance and inspection procedures. Lecture 3 hours per week.

MEC 119 Introduction to Basic CNC and CAM
(3 CR) Teaches the basic concepts of Computer Numerical Control (CNC) programming of Numerical Control Machinery with emphasis on Computer Aided Manufacturing (CAM)/ Computer Aided Drafting (CAD). Program writing procedures will be based on using the following: basic G-code programming language for CNC machinery, CAD/CAM programming systems to produce correct code for CNC Machinery, basic computer usage, CAD/CAM integration, and Code-to-machine transfer via Distributive Numeric Control (DNC). Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEC 131 Mechanics I – Statics for Engineering Technology
(3 CR) Prerequisite: MTH 115 or equivalent. Co-requisite: MTH 116 or equivalent. Teaches Newton's laws, resultants and equilibrium of force systems, trusses and frames, determination of centroids, and distributed loads and moments of inertia. Introduces dry friction and force systems in space. Lecture 3 hours per week.

MEC 132 Mechanics II – Strength of Materials for Engineering Technology
(3 CR) Prerequisite: MEC 131. Teaches the concepts of stress and strain. Provides an analysis of stresses and deformations in loaded members, connectors, shafts, beams, columns, and combined stress. Lecture 3 hours per week.

MEC 155 Mechanisms
(2 CR) Studies the purpose and actions of cams, gear trains, levers, and other mechanical devices used to transmit control. Focuses on motions, linkages, velocities, and acceleration of points within a link mechanism; layout method for designing cams and gear grain. Requires preparation of weekly laboratory reports. Lecture 1 hours per week. Laboratory 2 hours. Total 3 hours per week.

MEC 162 Fluid Mechanics – Hydraulics/ Pneumatics
(3 CR) Introduces hydraulic and pneumatic systems found in construction equipment, road vehicles, and farm equipment. Includes the basic theory, construction, maintenance, and repair of hydraulic and pneumatic power systems. Lecture 3 hours per week.

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) 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: MEN 101-102 or departmental approval needed. Studies the stages of group development, role of the group leader, and contemporary models of group counseling utilized in mental health counseling. Includes experiential training in group leadership. Lecture 3 hours per week.

MEN 225 Counseling Therapy
(3 CR) Studies various models of counseling theories and appropriate application of counseling techniques in the helping profession. Lecture 3 hours per week.

MEN 290 Coordinated Practice in Mental Health

(5 CR) Prerequisites: MEN 101 and departmental approval. Provides supervised experience in a community mental health/ human services agency. Students will spend 2 hours per week in a seminar class and a total of 180 hours at the placement site. Arrangements for placement are made the semester prior to the one in which the student actually takes the class. Contact the Internship Coordinator in March to make plans for a fall or summer semester placement or in October to plan for a spring semester placement.

MKT - Marketing

MKT 100 Principles of Marketing

(3 CR) Presents principles, methods, and problems involved in the marketing of goods, services and ideas to consumers and organizational buyers. Discusses present-day problems and policies connected with distribution and sale of products, pricing, promotion, and buyer motivation. Examines variations of the marketing mix and market research, plus legal, social ethical and international considerations in marketing. Lecture 3 hours per week.

MKT 110 Principles of Selling

(3 CR) Presents fundamental aspects of personal selling, sales, and selling methods. Emphasizes professional sales techniques and ethics. Examines organization necessary for a well-coordinated sales effort, including the training of sales personnel for maximum efficiency in selling and organization of the sales division within the business enterprise. Introduces sales management in planning, organizing, directing, and controlling the total sales effort. Lecture 3 hours per week.

MKT 220 Principles of Advertising

(3 CR) Emphasizes the role of advertising in marketing goods, services and ideas. Discusses the different uses of advertising; types of media; how advertising is created; agency functions; and legal, social, and economic aspects of the industry. Lecture 3 hours per week.

MKT 275 International Marketing

(3 CR) Examines the role of the multinational firm, as well as the environments in which they operate. Covers such factors as exchange rates, government foreign trade policy, and social-cultural factors. Compares inter-national and domestic marketing strategies. Lecture 3 hours per week.

MKT 276 International Marketing Management

(3 CR) Presents the process of marketing and management and applies it to the marketing of products within the global marketplace. Introduces the student to activities involving the gathering and analyzing of information in the development and implementation of an international marketing plan. Lecture 3 hours per week.

MKT 282 Principles of E-Commerce

(3 CR) Studies on-line business strategies, and the hardware and software tools necessary for Internet Commerce. Includes the identification of appropriate target segments, the development of product opportunities, pricing structures, distribution channels and execution of marketing strategies. Lecture 3 hours per week.

MTH - Mathematics

MTH 3 Algebra I

(4 CR) Prerequisites: Arithmetic or equivalent and a placement recommendation for MTH 3. Covers the topics of Algebra I including real numbers, equations and equalities, exponents, polynomials, Cartesian coordinate system, rational expressions, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 4 hours per week.

MTH 4 Algebra II

(4 CR) Prerequisites: Algebra I or equivalent and a placement recommendation for MTH 4. Expands upon the topics of Algebra I including rational expressions, radicals and exponents, quadratic equations, systems of equations, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 4 hours per week.

MTH 9 Pre-Algebra

(3 CR) Prerequisite: Placement recommendation for MTH 9. Provides a transition between arithmetic and Algebra. Includes arithmetic, order of operations, rational numbers, and simple equation applications. Develops the mathematical proficiency necessary for curriculum entrance. Credits not applicable toward graduation. Lecture 3 hours per week.

MTH 115-116 Technical Mathematics I-II

(3 CR, 3 CR) Prerequisites: a placement recommendation for MTH 115 or Algebra I, Algebra II, and Geometry or Trigonometry or equivalent. Presents Algebra through exponential and logarithmic functions, Trigonometry, vectors, analytic Geometry, and complex numbers. Lecture 3 hours per week.

MTH 120 Introduction to Mathematics

(3 CR) Prerequisites: Algebra I or equivalent and a placement recommendation for MTH 120. Introduces number systems, logic, basic Algebra, and descriptive statistics. Intended for occupational/technical programs. Lecture 3 hours per week.

MTH 141-142 Business Mathematics I

(3 CR) Prerequisites: a placement recommendation for MTH 141 and one unit of high school mathematics or equivalent. Provides instruction, review, and drill in percentage, cash and trade discounts, mark-up, payroll, sales, property and other taxes, simple and compound interest, bank discounts, loans, investments, and annuities. Lecture 3 hours per week.

MTH 151 Mathematics for the Liberal Arts I
(3 CR) Prerequisites: Algebra I, Algebra II and Geometry or equivalent and a placement recommendation for MTH 151. Presents topics in sets, logic, numeration systems, geometric systems, and elementary computer concepts. Lecture 3 hours per week.

MTH 152 Mathematics for the Liberal Arts II
(3 CR) Prerequisites: Algebra I, Algebra II and Geometry or equivalent and a placement recommendation for MTH 152. Presents topics in functions, combinatorics, probability, statistics and Algebraic systems. Lecture 3 hours per week.

MTH 157 Elementary Statistics
(3 CR) Prerequisites: Algebra I, Geometry, and Algebra II. Presents elementary statistical methods and concepts including descriptive statistics, estimation, hypothesis testing, linear regression, and categorical data analysis. Credit will not be awarded for both MTH 157 and MTH 241. Lecture 3 hours per week.

MTH 163 Pre-Calculus I
(3 CR) Prerequisites: Algebra I, Algebra II, and Geometry or equivalent and a placement recommendation for MTH 163. Presents college Algebra, matrices, and Algebraic, exponential, and logarithmic functions. Credit will not be awarded for both MTH 163 and 166. Lecture 3 hours per week.

MTH 166 Pre-Calculus with Trigonometry
(5 CR) Prerequisites: Algebra I, Algebra II, and Geometry or equivalent and a placement recommendation for MTH 166. Presents college Algebra, analytic Geometry, Trigonometry, and Algebraic, exponential, and logarithmic functions. Credit will not be awarded for both MTH 163 and MTH 166. Lecture 5 hours per week.

MTH 175 Calculus of One Variable I
(3 CR) Prerequisites: four units of high school mathematics including Algebra I, Algebra II, Geometry and Trigonometry or equivalent and a placement recommendation for MTH 175. Presents differential calculus of one variable including the theory of limits, derivatives, differentials, antiderivatives and applications to Algebraic and transcendental functions. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 176 Calculus of One Variable II
(3 CR) Prerequisites: MTH 175 or equivalent. Continues the study of integral calculus of one variable including indefinite integral, definite integral and methods of integration with applications to Algebraic and transcendental functions. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 177 Introductory Linear Algebra
(2 CR) Co-requisite: MTH 175 or equivalent. Covers matrices, vector spaces, determinants, solutions of systems of linear equations, and eigen values. Designed for mathematical, physical, and engineering science programs. Lecture 2 hours per week.

MTH 178 Topics in Analytic Geometry
(2 CR) Co-requisite: MTH 176 or equivalent. Covers conic sections, polar and parametric graphing. Designed for mathematical, physical, and engineering science programs. Lecture 2 hours per week.

MTH 241 Statistics I
(3 CR) Prerequisites: MTH 163 or MTH 166 or equivalent. Covers descriptive statistics, elementary probability, probability distributions, estimation, and hypothesis testing. Uses a computer package to solve case studies. Lecture 3 hours per week.

MTH 242 Statistics II
(3 CR) Prerequisites: MTH 241 or equivalent. Continues the study of estimation and hypothesis testing with emphasis on correlation and regression, analysis of variance, chi-square test, and non-parametric methods. Presents linear programming, network theory, project scheduling, and other quantitative applications. Uses a computer package to solve case studies. Lecture 3 hours per week.

MTH 271 Applied Calculus I
(3 CR) Prerequisite: MTH 163 or MTH 166 or equivalent. Presents limits, continuity, differentiation of Algebraic and transcendental functions with applications, and an introduction to integration. Lecture 3 hours per week.

MTH 272 Applied Calculus II
(3 CR) Prerequisites: MTH 271 or equivalent. Covers techniques of integration, multivariable calculus, and an introduction to differential equations. Lecture 3 hours per week.

MTH 277 Vector Calculus
(4 CR) Prerequisite: MTH 176, MTH 177, MTH 178 or equivalent. Presents vector valued functions, partial derivatives, multiple integrals, infinite series, and topics from the calculus of vectors. Designed for mathematical, physical, and engineering science programs. Lecture 4 hours per week.

MTH 285 Linear Algebra
(3 CR) Prerequisite: MTH 176 or equivalent. Covers matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigen values, and eigen vectors. Designed for mathematical, physical and engineering science programs. Lecture 3 hours per week.

MTH 287 Mathematical Structures
(3 CR) Co-requisite: MTH 176 or equivalent. Presents topics in mathematical Structures of value to students majoring in Computer Science or other disciplines requiring programming skills. Covers logic, set theory, number theory, combinatorics, functions, relations, and graph theory. Lecture 3 hours per week.

MTH 291 Differential Equation

(3 CR) Co-requisite: MTH 277 or equivalent. Introduces first order differential equations, linear differential equations, numerical methods, and applications. Designed for mathematical, physical, and engineering science programs. Lecture 3 hour per week.

MUS – Music

MUS 121-122 Music Appreciation I-II

(3 CR, 3 CR) Increases the variety and depth of the student's interest, knowledge, involvement in music and related cultural activities. Acquaints student with traditional and twentieth-century music literature, emphasizing the relationship music has as an art form with man and society. Increases the student's awareness of the composers and performers of all eras through listening and concert experiences. Lecture 3 hours per week.

MUS 163-164 Guitar Theory and Practice I-II

(3 CR, 3 CR) 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 235 Advanced Recording Techniques

(3 CR) Introduces advanced recording techniques that lead to master release and demonstration tapes. Provides knowledge and skills in refined areas of multi-channel recording and mix-down techniques. Includes study of the process, which converts finished master tapes to phonograph discs or prerecorded cartridges suitable for retail release. Provides experience in solving on-site recording problems. Prerequisite MUS 140 or divisional approval. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

NAS – Natural Science

NAS 131-132 Astronomy I-II

(4 CR, 4 CR) 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 171 Human Anatomy and Physiology I

(4 CR) Presents the human organ systems and their functions as they relate to allied health science. Emphasizes systems of importance to Radiography. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

NAS 185 Microbiology

(4 CR) Prerequisite: recent high school biology or BIO 101. Surveys microorganisms, presenting their characteristics and activities as related to health and disease. Lecture 3 hours. Recitation and laboratory 2 hours. Total 5 hours per week.

NUR – Nursing

NUR 110 Introduction to Nursing and Health

(2 CR) Introduces concepts of Nursing and Health. Includes historical and cultural aspects, legal and ethical responsibilities and an overview of health and the health care delivery system. Lecture 2 hours per week.

NUR 111 Nursing I

(7–8 CR) Introduces nursing principles including concepts of health and wellness and the nursing process. Develops nursing skills to meet the biopsychosocial needs of individuals across the lifespan. Includes math computational skills, basic computer instruction related to the delivery of nursing care, communication skills, introduction to nursing, health, the health care system, legal aspects of nursing care, diagnostic testing, assessment, teching and learning, asepsis, body mechanics and safety, personal care, activity/rest, wound care, nutrition, elimination, oxygenation, fluid and electrolytes, pain control, medication administration, aging populations and pre/post operative care. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 1–7 hours. Laboratory 2–21 hours. Total 9–22 hours per week.

NUR 112 Nursing II

(7–8 CR) Focuses on the nursing care of adults experiencing changes along the health/illness continuum that are common, well-defined, and have predictable outcomes. Includes math computational skills, basic computer instruction related to the delivery of nursing care; acid-base balance, gastrointestinal, genitourinary, musculoskeletal, immunology, oncology, sensorineural, infectious diseases, endocrine, respiratory and blood disorders and care of the dying client. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 1–7 hours. Laboratory 3–21 hours. Total 9–22 hours per week.

NUR 115 LPN Transition

(7 CR) Introduces the role of the registered nurse through concepts and skill development in the discipline of professional nursing. This course serves as a bridge course for licensed practical nurses and is based upon individualized articulation agreements, mobility exams, or other assessment criteria as they related to local programs and service areas. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Lecture 6 hours. Laboratory 3 hours. Total 9 hours per week.

NUR 121 Nursing Fundamentals I

(10 CR) Co-requisite: BIO 141. Introduces the nursing process as a framework to meet the biopsychosocial needs of individuals/families throughout the lifespan. Focuses on development of basic nursing skills. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 7 hours. Laboratory 9 hours. Total 16 hours per week.

NUR 122 Nursing Fundamentals II

(10 CR) Prerequisite: NUR 121. Co-requisites: BIO 142, NAS 185. Utilizes the nursing process to meet the biopsychosocial needs of individuals/families experiencing prevalent variations in health. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 6 hours. Laboratory 12 hours. Total 18 hours per week.

NUR 135 Drug Dosage Calculations

(2 CR) Teaches apothecary, metric, household conversion; reading of drug orders and labels. Provides a practical approach to learning to prepare dosages and solutions, including calculating intravenous flow rates and pediatric drugs. Lecture 2 hours per week.

NUR 202 Medical/Surgical Nursing I

(3—4 CR) Focuses on the care of individuals/families requiring complex or surgical treatment. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills and basic computer instruction related to the delivery of nursing care; cardiac, neurological, renal, burn disorders and clients experiencing shock. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 1–3 hours. Laboratory 2–9 hours. Total 5–10 hours per week.

NUR 208 Acute Medical-Surgical Nursing

(5–6 CR) Focuses on the use of nursing process to provide care to individuals/families with acute medical or surgical problems or to prevent such problems. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in cooperating agencies. Lecture 1–5 hours. Laboratory 2–15 hours. Total 7–16 hours per week.

NUR 226 Health Assessment

(3 CR) Teaches the systematic approach to obtaining a health history and performing a physical assessment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

NUR 238 Integrated Nursing Principles I

(10 CR) Prerequisites: NUR 115 or NUR 122. Focuses on acute nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Content includes: parenteral dosage computational skills, computer instruction related to delivery of nursing care; professional issues; complex nursing care related to alteration in oxygenation, nutrition, elimination, regulation and love and belonging (children and the child bearing family). Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 6 hours. Laboratory 8-12 hours. Total 14-18 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 8-12 hours. Total 14-18 hours per week.

NUR 245 Maternal/Newborn Nursing

(3- 4 CR) Develops nursing skills in caring for families in the antepartum, intrapartum, and post-partum periods. Lecture 1–3 hours. Laboratory 0–9 hours. Total 3–9 hours per week.

NUR 246 Parent/Child Nursing

(3—4 CR) Develops nursing skills in caring for both well and ill children in a variety of settings. Emphasizes theories of growth and development and the family as a unit. Lecture 1–3 hours. Laboratory 0–9 hours. Total 3–9 hours per week.

NUR 247 Psychiatric/Mental Health Nursing

(3—4 CR) Develops nursing skills in caring for individuals, families, and/or groups with mental health needs. Explores various treatment models, diagnostic categories, and rehabilitative measures. Lecture 1–3 hours. Laboratory 0–9 hours. Total 3–9 hours per week.

NUR 254 Dimentions of Professional Nursing

(1–2 CR) Explores the role of the professional nurse. Emphasizes nursing organizations, legal and ethical implications, and addresses trends in management and organizational skills. Explores group dynamics, relationships, conflicts, and leadership styles. Lecture 1–2 hours per week.

NUR 290 Coordinated Practice

(1 CR) Provides clinical experience in acute care setting. Hospital experience. Clinical 3 hours per week.

PED – Physical Education and Recreation

PED 101-102 Fundamentals of Physical Activity I-II

(1–2 CR, 1–2 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. Total 3 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. Total 2 hours per week.

PED 107 Exercise and Nutrition

(1 CR) Provides the student with a full body workout through flexibility, strength, and cardiovascular endurance exercises. Includes fitness evaluation, nutrition analysis, and weight control. Total 2 hours per week.

PED 109 Yoga

(1 CR) Focuses on the forms of yoga training emphasizing flexibility. Total 2 hours per week.

PED 111 Weight Training I

(1 CR) Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Total 2 hours per week.

PED 113 Lifetime Activities I

(1 CR) Presents lifetime sports and activities. Teaches skills and methods of lifetime sports and activities appropriate to the local season and facilities available. Total 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. Total 2 hours per week.

PED 129 Self-Defense

(1-2 CR) Examines history, techniques, and movements associated with self-defense. Introduces the skills and methods of self- defense emphasizing mental and physical discipline. Total 2-3 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. Total 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. Total 3 hours per week.

PED 137-138 Martial Arts I-II

(2 CR, 2 CR) Emphasizes forms, styles, and techniques of body control, physical and mental discipline, and physical fitness. Presents a brief history of development of martial arts theory and practice. Total 3 hours per week.

PED 141-142 Swimming I-II

(1 CR, 1 CR) Introduces skills and methods of swimming strokes. Focuses on safety and physical conditioning. Total 2 hours per week.

PED 144 Skin and SCUBA Diving

(1-2 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. Total 2-3 hours per week.

PED 152 Basketball

(1 CR) Introduces basketball skills, techniques, rules, and strategies. Total 2 hours per week.

PED 154 Volleyball

(2 CR) Introduces skills, techniques, strategies, rules, and scoring. Total 3 hours per week.

PED 188 Freshwater Fishing

(1-2 CR) Teaches freshwater fishing techniques including spinning, bait casting and fly casting. Presents selection and care of equipment, fish habits, conservation, and safety. Total 2-3 hours per week.

PHI – Philosophy

PHI 101-102 Introduction to Philosophy I-II

(3 CR, 3 CR) Introduces a broad spectrum of philosophical problems and perspectives with an emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality, and values. Lecture 3 hours per week.

PHT - Photography

PHT 101-102 Photography I-II

(3 CR) Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Lecture 1 hour. Laboratory 4 hour. Total 5 hours per week.

PHT 135 Electronic Darkroom

(3 CR) Teaches students to create and manipulate digital photographs. Covers masking, color corrections, and merging of illustrations with photographs. Examines the ethical and property-rights issues which are raised in the manipulation of images. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHT 201 Advanced Photography I
(3 CR) Prerequisite: PHT 101 or equivalent. Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 264 Digital Photography
(3 CR) 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. Prerequisites: PHT 101 and ART 283 or PHT 135. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHY – Physics

PHY 201-202 General College Physics I-II
(4 CR, 4 CR) Prerequisites: MTH 115 or MTH 163 or MTH 166 recommended or equivalent. A non-calculus introductory college physics sequence. Includes fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity, magnetism, and selected topics in modern physics. Lecture 3 hours Laboratory 3 hours. Total 6 hours per week.

PHY 241-242 University Physics I-II
(4 CR, 4 CR) Prerequisite: MTH 176 and MTH 178 or one year of college calculus. An introductory calculus-based physics sequence recommended for engineering, physics, computer science, and mathematics majors. Teaches principles of classical and modern physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, relativity and nuclear physics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PLS – Political Science

PLS 211-212 U.S. Government I-II
(3 CR, 3 CR) Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Lecture 3 hours per week.

PLS 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 116 Normal Nutrition
(1 CR) Introduces the basic principles of good nutrition. Studies nutrients, their sources, functions, and 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 ages. Lecture 4 hours. Laboratory 3 hours. Total 7 hours per week.

PNE 141-142 Nursing Skills I-II
(3 CR, 3 CR) Studies principles and procedures essential to the basic nursing care of patients. Lecture 1-2 hours. Laboratory 3-6 hours. Total 4-8 hours per week.

PNE 145 Trends in Practical Nursing
(1 CR) Studies the role of the Licensed Practical Nurse. Covers legal aspects, organizations, and opportunities in practical nursing. Designed to assist the student in preparation for employment. Lecture l hour per week.

PNE 155 Body Structure and Function
(4 CR) Studies the structure and function of the body. Lectur 4 hours per week.

PNE 156 Nursing Across the Life Span
(4 CR) Focuses on the principles of nursing relevant to assisting the individual during the growth and development process across the life span. Lecture 4 hours per week.

PNE 158 Mental Health and Psychiatric Nursing
(2 CR) Recognizes emotional needs of patients. Provides knowledge of the role that emotions play. Enables students to understand their own behavior as well as patient behavior. Lecture 2 hours per week.

PNE 174 Applied Pharmacology for Practical Nurses
(2 CR) Applies problem solving skills in preparing and administering medications. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

PNE 181-182 Clinical Experience I-II

(5 CR, 5 CR) Provides guided nursing experiences in the hospital setting. Practices skills and applies principles of nursing in basic areas. Includes supervision in administration of medicines. Encourages students to develop basic skills in analyzing patient needs and making nursing decisions. Laboratory 15 hours per week.

PSY – Psychology

PSY 120 Human Relations

(3 CR) Introduces the theory and practice of effective human relations. Increases understanding of self and others and interpersonal skills needed to be a competent and cooperative communicator. Lecture 3 hours per week.

PSY 200 Principles of Psychology

(3 CR) Surveys the basic concepts of psychology. Covers the scientific study of behavior, behavioral research methods and analysis, and theoretical interpretations. Includes topics that cover physiological mechanisms, sensation/perception, motivation, learning, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week.

PSY 215 Abnormal Psychology

(3 CR) Explores historical views and current perspectives of abnormal behavior. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior, and types of therapy. Includes methods of clinical assessment and research strategies. Lecture 3 hours per week.

PSY 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 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.

PSY 245 Educational Psychology

(3 CR) Explores human behavior and learning in the educational context. Investigates the nature of various mental characteristics such as intelligence, interest, and knowledge. Examines their measurement and appraisal and their significance for educational goals. Prerequisite PSY 135, 200, 201 or 202. Lecture 3 hours per week.

PSY 265 Psychology of Men and Women

(3 CR) Examines the major determinants of sex differences. Emphasizes psychosexual differentiation and gender identity from theoretical, biological, interpersonal, and sociocultural perspectives. Includes topics such as sex roles, socialization, rape, abuse, and androgyny. Prerequisites: PSY 125, 200, 201 or 202. Lecture 3 hours per week.

PSY 271-272 Introduction to Parapsychology I-II

(3 CR, 3 CR) Presents the history of psychic phenomena from ancient to modern times and discusses attempts to understand and explain such phenomena. Reviews modern parapsychological research discoveries, and examines perspectives of natural sciences, Social Sciences and arts. Includes classroom experiments and demonstrations. Lecture 3 hours per week.

PSY 273-274 Selected Topics in Parapsychology

(3 CR, 3 CR) Affords opportunity for in-depth study of selected topics in parapsychology. Offers experimental and theoretical guided research projects. Lecture 3 hours per week.

RAD – Radiography

RAD 106 Introduction to Radiologic Science

(2 CR) Presents an overview of radiographic imaging techniques, basic equipment, and elements of film processing. Basic technical factors of image production and radiographic quality are stressed. Lecture 2 hours per week.

RAD 111-112 Radiologic Science I-II

(4 CR, 4 CR) Teaches concepts of radiation, radiography physics, fundamentals of electromagnetic radiation, electricity and magnetism, and application of these principles to radiography. Focuses on X-ray production, emission, and X-ray interaction with matter. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 121 Radiographic Procedures I

(4 CR) Introduces procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 125 Patient Care Procedures
(2-3 CR) Presents the care and handling of the sick and injured patient in the Radiology Department. Introduces the fundamentals of nursing procedures, equipment, and supplies specific to radiology. Lecture 2-3 hours per week.

RAD 131-132 Elementary Clinical Procedures I-II
(3 CR, 3 CR) Develops technical skills in fundamental radiographic procedures. Focuses on introduction to radiography, basic radiation safety, manipulation of equipment, patient care, osseous studies, and some contrast studies. Provides clinical experience in cooperating health agencies. Clinical 15 hours per week.

RAD 190 Coordinated Practice
(3 CR) Prerequisite: RAD 132. Introduces advanced technical skills in fundamental radiographic procedures. Focuses on basic contrast media studies, osseous studies, and skull procedures. Provides clinical experiences in health care agencies. Clinical 16 hours per week.

RAD 205 Radiation Protection and Radiobiology
(3 CR) Studies methods and devices used for protection from ionizing radiation. Teaches theories of biological effects, cell and organism sensitivity, and the somatic and genetic effects of ionizing radiation. Presents current radiation protection philosophy for protecting the patient and technologist. Lecture 3 hours per week.

RAD 215 Correlated Radiographic Theory
(2 CR) Presents intensive correlation of all major radiologic technology subject areas. Studies interrelationships of biology, physics, principles of exposure, radiologic procedures, patient care, and radiation protection. Lecture 2 hours per week.

RAD 221 Radiographic Procedures II
(4 CR) Prerequisite: RAD 121. Continues procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 231-232 Advanced Clinical Procedures I-II
(5 CR, 5 CR) Reinforces technical skills in fundamental radiographic procedures. Introduces more intricate contrast media procedures. Focuses on technical proficiency, application of radiation, protection, nursing skills, and exposure principles. Teaches advanced technical procedures and principles of imaging modalities, correlating previous radiographic theory, focusing on full responsibility for patients in technical areas, perfecting technical skills, and developing awareness of related areas utilizing ionizing radiation. Provides clinical experience in cooperating health agencies. Clinical 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 247 Cross-Sectional Anatomy
(2-3 CR) Presents a specialized study of cross-sectional anatomy relevant to sectional imaging modalities such as computed tomography and magnetic resonance imaging. Prerequisite: ARRT or eligible. Lecture 2-3 hours per week.

RAD 290 Coordinated Internship
(4 CR) Prerequisite: RAD 232. Provides additional experience in radiographic procedures, demonstrating skills in technical proficiency, patient care procedures, radiation protection, and evaluation of experience in cooperating health agencies. Clinical 21 hours per week.

REA – Real Estate

REA 100 Principles of Real Estate
(4 CR) Examines practical applications of real estate principles. Includes a study of titles, estates, land descriptions, contracts, legal instruments and concepts, real estate mathematics, financing, agency, appraisal, fair housing, and management of real estate. Lecture 4 hours per week.

REA 216 Real Estate Appraisal
(3 CR) Explores fundamentals and applications of real estate valuation. Introduces Uniform Standards of Professional Appraisal Practice and the Uniform Residential Appraisal Report form. Lecture 3 hours per week.

REA 217 Real Estate Finance
(3 CR) Prerequisite: REA 100. Presents principles and practices of financing real estate. Analyzes various types of mortgage note contracts and mortgage and deed of trust instruments. Covers underwriting of conventional and government insured and guaranteed loans. Lecture 3 hours per week.

REA 236 State Certified Residential Appraiser
(1 CR) Prerequisite: Concentrates on Appraisal Law in the State of Virginia, appraisal practices, principles and theories with regard to their application to residential properties. Emphasizes the review of terms, concepts, and the valuation theories targeted to the residential examination. Lecture 1 hour per week.

REA 245 Real Estate Law
(3 CR) Prerequisite: REA 100. Focuses on real estate law, including rights pertaining to property ownership and management, agency contracts, transfers of real property ownership, fair housing, and tax implications. Lecture 3 hours per week.

REL – Religion

REL 200 Survey of the Old Testament
(3 CR) Surveys books of the Old Testament, with emphasis on prophetic historical books. Examines the historical and geographical setting and place of the Israelites in the ancient Middle East as background to the writings. Lecture 3 hours per week.

REL 210 Survey of the New Testament
(3 CR) Surveys the New Testament, with special attention placing the writings within their historical and geographical setting. Lecture 3 hours per week.

REL 230 Religions of the World
(3 CR) Introduces the religions of the world with attention to origin, history, and doctrine. Lecture 3 hours per week.

REL 231-232 Religions of the World I-II
(3 CR) Studies religions of the world with attention to origin, history, and doctrine. Lecture 3 hours per week.

REL 247 History of Christianity
(3 CR) Surveys the development of Christianity from its origins to the present. Lecture 3 hours per week.

ROC – Radiation Oncology

ROC 110 Introduction to Radiation Oncology
(2 CR) Presents an overview of the field of Radiation Oncology, focusing on medical and technical terminology, practices and procedures, treatment charts, roles of staff, clinical objectives, treatment modalities, and equipment. Other topics include patient care, psychosocial issues, ethics and legal considerations of patient management. Lecture 2 hours per week.

ROC 120 Radiation Oncology/Pathology I
(3 CR) Introduces malignant pathology arising in each anatomical site, radiation treatment rationale, treatment techniques, and radiobiological response. Lecture 3 hours per week.

ROC 121 Radiation Oncology/Pathology II
(3 CR) Prerequisites: ROC 110, ROC 120. A continuation of Radiation Oncology I, which focuses on malignant pathology arising in each anatomical site, radiation rationale, treatment techniques, and radiobiological response. Lecture 3 hours per week.

ROC 131 Clinical Clerkship I
(4 CR) The student is introduced to the clinical setting and the basics of Radiation Oncology. The student gains experience in basic technical and patient care skills through supervised direct patient contact and phantom work. Clinical 21 hours per week.

ROC 132 Clinical Clerkship II
(5 CR) Prerequisite: ROC 131. The student continues supervised direct patient contact and phantom work with focus on technical skills related to equipment manipulation. With minimal assistance the student should be able to perform basic treatment and simulation procedures as well as basic patient care skills. Clinical 25 hours per week.

ROC 141 Therapy Physics I
(2 CR) Prerequisites: ROC 110, MTH 163. Focuses on concepts of radiation production, interaction, and influencing factors. Emphasis is placed on atomic interactions and dose measurement techniques. Presents a comprehensive overview of the different types of machines used in Radiation Oncology. Lecture 2 hours per week.

ROC 142 Patient Care in Oncology
(1 CR) Focuses on the unique needs of the cancer patient, including: site specific side effects, pharmacology, skin care, psychological and nutritional support, and patient care in emergency situations. The use of chemotherapeutic agents will also be explored. Lecture 1 hour per week.

ROC 145 Quality Improvement
(2 CR) Prerequisite: ROC 110. Methods for performing various quality assurance tasks will be discussed, including the medical record component, as well as standards and specification of therapeutic equipment. The student will acquire the knowledge and ability to recognize inaccuracy of treatment delivery. Warm up guidelines will be reviewed. Lecture 2 hours per week.

ROC 151 Cross-Sectional Anatomy
(2 CR) Prerequisites: ROC 120, 121. Introduces the study of basic anatomic structures and pathologies through digital concepts of medical imaging with emphasis on principles and practices of Radiation Oncology and diagnostic radiography. Lecture 2 hours per week.

ROC 231 Clinical Clerkship III
(5 CR) Prerequisite: ROC 132. A continuation of Clinical Clerkship II, the student will be introduced to intermediate and complex treatment and simulation procedures as well as dosimetry, beam modification devices and brachytherapy competencies. The student should demonstrate proficiency in equipment manipulation and intermediate patient care skills. Clinical 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. Various types of brachytherapy applicators and dose distributions systems will be discussed and include brachytherapy dose calculation exercises. Electron beam dosimetry will be introduced. Lecture 2 hours per week.

ROC 242 Clinical Radiobiology
(3 CR) Prerequisites: ROC 110, ROC 120, ROC 121. This course is an advance study into the principles of biologic responses to radiation. Focus will be on the events that occur following absorption of energy from radiation at the cellular, tissue, and systemic whole body levels, and factors that influence the effects. Lecture 3 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
(1 CR) Prerequisites/Co-requisites: All Radiation Oncology Core Courses. Designed to correlate all major radiation oncology subject areas in preparation for national certification. Lecture 1 hour per week.

SAF – Safety

SAF 126 Principles of Industrial Safety
(3 CR) Teaches principles and practices of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, housekeeping, occupational diseases, first aid, safety organization, protection equipment and general safety principles and promotion. Lecture 3 hours per week.

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. 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, note-taking, and test-taking. Lecture 1-3 hours 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 211-212 Principles of Anthropology
(3 CR, 3 CR) Inquires into the origins, development, and diversification of human biology and human cultures. Includes fossil records, physical origins of human development, human population genetics, linguistics, cultures' origins and variation, and historical and contemporary analysis of human societies. Lecture 3 hours per week.

SOC 215 Sociology of the Family
(3 CR) Studies topics such as marriage and family in social and cultural context. Addresses the single scene, dating and marriage styles, child-rearing, husband and wife interaction, single parent families, and alternative lifestyles. Lecture 3 hours per week.

SOC 266 Minority Group Relations
(3 CR) Investigates minorities such as racial and ethnic groups. Addresses social and economic conditions promoting prejudice, racism, discrimination, and segregation. Lecture 3 hours per week.

SOC 268 Social Problems
(3 CR) Applies sociological concepts and methods to analysis of current social problems. Includes delinquency and crime, mental illness, drug addiction, alcoholism, sexual behavior, population crisis, race relations, family and community disorganization, poverty, automation, wars, and disarmament. Lecture 3 hours per week.

SPA – Spanish

SPA 101-102 Beginning Spanish I-II
(4 CR, 4 CR) Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. Lecture 4 hours per week.

SPA 103-104 Basic Spoken Spanish I-II
(3 CR.) (3 CR.) Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

SPA 201-202 Intermediate Spanish I-II
(3 CR, 3 CR) Prerequisite: SPA 102 or equivalent. Continues to develop understanding, speaking, reading, and writing skills. May include oral drill and practice. Lecture 3 hours per week.

SPA 233 Introduction to Spanish Civilization and Literature I
(3–4 CR) Prerequisite: SPA 202 or equivalent. Introduces the student to Spanish culture and literature. Readings and discussions conducted in Spanish. Lecture 3 hours per week.

SPD – Speech and Drama

SPD 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.

SPD 105 Oral Communication
(3 CR) Studies effective communication with emphasis on speaking and listening. Lecture 3 hours per week.

SPD 131-132 Acting I-II
(3 CR, 3 CR) 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.

TEL – Telecommunications

TEL 150 Internetworking I
(4 CR) 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. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

TEL 151 Internetworking II
(4 CR) Prerequisite: TEL 150. 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. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

TEL 250 Internetworking III
(4 CR) Prerequisite: TEL 151. Studies the advantages of LAN segmentation using bridges, routers, and switches, Fast Ethernet configuring access lists; Spanning Tree Protocol; and Virtual LANs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

TEL 251 Internetworking IV
(4 CR) Prerequisite: TEL 250. Focuses on the differences between the following WAN services: LAPB, Frame Relay, ISDN/LAP, HDLC, PPP, and DDR. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

WEL – Welding

WEL 116 Welding I (Oxyacetylene)
(2 CR) Teaches oxygen/acetylene welding and cutting including safety of equipment, welding, brazing, and soldering procedures and cutting procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 120 Fundamentals of Welding
(3 CR) Introduces history of welding processes. Covers types of equipment and assembly of units. Stresses welding procedures such as fusion, non-fusion, and cutting oxyacetylene. Introduces arc welding. Emphasizes procedures in the use of tools and equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

WEL 121 ARC Welding
(2 CR) Prerequisite: WEL 120 or departmental approval. Studies the operation of AC and DC power sources, weld heat, polarities and electrodes for use in joining various alloys by the SMAW process. Covers welds in different types of joints and different welding positions. Emphasizes safety procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 130 Inert Gas Welding

(3 CR) Prerequisite: WEL 120 or departmental approval. Introduces practical operations in the uses of inert-gas-shield arc welding. Discusses equipment, safety operations, welding practice in the various positions, process applications, and manual and semi-automatic welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 135 Inert Gas Welding

(2 CR) Prerequisite: WEL 120 or departmental approval. Introduces practical operations in use of inert gas shielded arc welding. Studies equipment operation, setup, safety, and practice of GMAW (MIG) and GTAW (TIG). Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 136 Welding III (Inert Gas)

(2 CR) Studies Tungsten and metallic inert gas procedures and practices including principles of operation, shielding gasses, filler rods, process variations and applications, manual and automatic welding, equipment and safety. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 145 Welding Metallurgy

(3 CR) Prerequisite: WEL 120 or departmental approval. Studies steel classifications, heat treatment procedures, properties of ferrous and non-ferrous metals. Discusses techniques and practices of testing welded joints and destructive/nondestructive, visual magnetic, and fluorescent testing. Lecture 3 hours per week.

WEL 150 Welding Drawing and Interpretation

(2-3 CR) Teaches fundamentals required for successful drafting as applied to the welding industry. Includes blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings and interpretation of symbols. Lecture 2–3 hours per week.

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William H. Fralin, Jr.
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John R. Francis, Jr.
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Barbara B. Lemon
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Elizabeth W. Payne, EdD
Retired
Virginia Western Community College

Donald G. Smith
Retired, Chairman and CEO
Former Roanoke Electric Steel Corporation

John B. Williamson, III
President and CEO
RGC Resources

Administrative and Professional Staff

Sandel, Robert H.
President of the College
B.S.-The Citadel, 1967
M.Ed.-South Carolina State College, 1972
Ed.D.-University of South Carolina, 1983

Baker, Lori C.
Dean of Student Services, Instructor
B.A. - VPI&SU, 1988
M.A. - VPI&SU, 1993

Blalock, Dwight E.
Vice President of Financial and Administrative Services, Associate Professor
B.S.-University of Alabama, 1966
M.S.-Virginia Commonwealth University, 1970

Capps, John S.
Vice President of Academic and Student Affairs, Professor
B.A.-VPI & SU, 1974
M.A.-VPI & SU, 1977
Ed.D.-VPI & SU, 1994

Coffman, Leah K.
Administrative Officer for Workforce Development, Assistant Professor
B.S.-Bluefield College, 2000
M.S. Ed.-Radford University, 2003

Coveny, Ramona M.
Coordinator of Distance Learning and Instructional Technology, Associate Professor
A.A.S.-Patrick Henry Community College, 1985
B.S.-Ferrum College, 1988
M.S.-Hollins University, 1997

Emick, Mark Q., Sr.
Vice President of Institutional Advancement, Professor
A.S.-Virginia Western Community College, 1969
B.S.-Virginia Commonwealth University, 1971
M.A.-VPI & SU, 1977
Ed.D.-VPI & SU, 1994

Greer, Mike
Administrative Officer for Workforce Development, Instructor
B.S.-Virginia Tech, 1986

Henderson, Michael C.
Coordinator of Counseling, Associate Professor
B.A.-William & Mary, 1976
M.Ed.-James Madison University, 1981
C.A.G.S.-VPI & SU, 1987

Hendrick, Ruth Z.
Administrative Officer for Workforce Development, Associate Professor
B.A.-Colgate University, 1978
M.Ed.-University of Virginia, 1979
Ph.D.-Old Dominion University, 2006

Herbert-Ashton, Marilyn J.
Coordinator of Grants Development and Special Projects, Associate Professor
B.S. - Holy Family College, 1979
M.S. - Syracuse University, 1987

Hillman, David L.
Coordinator, Library, Assistant Professor
B.A.-College of William & Mary, 1969
M.L.S.-University of Maryland, 1972

Kornegay, Anne B.
Dean of Natural Science, Mathematics and Health Technology, Associate Professor
A.S.-Old Dominion University, 1974
B.S.-Old Dominion University, 1975
M.S.-Old Dominion University, 1977

Lindsay, Gloria A.
Coordinator of Retention Services and Student Life, Professor
A.A.S.-Isothermal Community College, 1971
B.T.-Appalachian State University, 1975
M.A.-Appalachian State University, 1976
Ed.D-North Carolina State University, 1989

Poythress, James W.
Dean of Business, Engineering and Technology, Associate Professor
B.A.-VPI & SU, 1972
M.B.A.-VPI & SU, 1991

Salyers, William A., Jr.
Coordinator, Dual Enrollment, Associate Professor
A.S.-Dabney Lancaster Community College, 1970
B.S.-Eastern Mennonite College, 1971
M.S.-Radford University, 1978
C.A.S. - Hollins College, 1996

Sargent, James E.
Dean of Social Sciences, Professor
A.A.-Mott Community College, 1960
B.S.-Eastern Michigan University, 1964
M.A.-Michigan State University, 1968
Ph.D.-Michigan State University, 1972

Semones, Dan
Administrative Officer for Workforce Development, Assistant Professor
B.S.-Virginia Tech, 1975
M.S.-Radford University, 1982

Sliver, Carol
Financial Aid and Veterans Affairs Officer
B.S.-James Madison University, 1982
M.S. Ed.-James Madison University, 1997
C.M.-James Madison University, 2006

Strickland, Katherine F.
Executive Director, VWCC Educational Foundation, Lecturer
B.A. – Hollins University, 1976

Terrell, Charles D.
Vice President of Workforce Development, Associate Professor
B.S. – East Carolina University, 1979
M.S. – Longwood University, 1991
Ph.D. – Virginia Commonwealth University, 2001

Wilmer, Elizabeth C.
Dean of Humanities, Professor
B.A.-University of the South, 1989
M.F.A.-Savannah College of Art and Design, 1991

Witter, Kevin G.
Director of Facilities Management, Associate Professor
A.A. - Corning Community College, 1977
B.Arch.- VPI & SU, 1981
M.Arch. - VPI & SU, 1990

Faculty

Abbatello, Donna J.
Assistant Professor, Administrative Support Technology
B.S.–Bluefield State College, 1968
M.A.–West Virginia College, Graduate Studies, 1977

Adkins, Gary M.
Assistant Professor, Counselor
B.A. - VPI&SU, 1972
M.A. - VPI&SU, 1976

Alexander, William W.
Instructor, Communication Design
B.S.A.–Radford University, 1997

Anderson, Jane G.
Assistant Professor, Nursing
A.A.S.–Virginia Western Community College, 1978
B.S.N.–Virginia Commonwealth University, 1997
M.S.N.–Radford University, 2002

Andrews (Brooks), Margaret L.
Assistant Professor, Practical Nursing
A.S.–Wesley College, 1988
B.S.N.–Wilmington College, 2001
M.S.N.–Wilmington College, 2002

Anguiano, Amy P.
Instructor, Public Speaking
B.A.–College of St. Catherine, 1984
M.A.–Northern Illinois University, 1988

Armour, Gilbert D.
Assistant Professor, Information Systems Technology
B.S.–University of New Mexico, 1976
M.S.–George Washington University, 1986

Ashcraft, Brenda C.
Assistant Professor, Reading
B.S.–Radford University, 1971
M.S.–Radford University, 1976

Balog-Szabo, Anna
Professor, Geology
B.S. –Eotuos Lorand University, Budapest, Hungary, 1978
M.S. –Eotuos Lorand University, Budapest, Hungary, 1984
Ph.D.–VPI & SU, 1996

Barnas, Martha S
Administrative Officer for Nursing Program, Professor
B.S.N. - D'Youville College, 1977
M.S. - SUNY at Buffalo, 1984
M.Ed. - Canisius College, 1991

Benson, G. Don
Professor, Physics
B.S.–Texas Western College, 1964
Ph.D.–Vanderbilt University, 1977

Billips, Anthony D.
Assistant Professor, Mathematics
B.S.–Radford University, 1994
M.S.–VPI&SU, 1997

Birmingham, Michael G.
Associate Professor, Business Management
B.A.–St. Bonaventure University, 1967
M.P.A.–University of Missouri, 1969

Boylan, Kathryn G.
Instructor, English
B.A.–College of William & Mary, 1983
M.A.L.S. – Hollins University, 2005

Brogan, Ruby M.
Assistant Professor, Accounting
B.S.–Radford University, 1967
M.S.Ed.–James Madison University, 1977
C.P.A.–Virginia, 1989

Burkholder, John B.
Associate Professor, English
A.A.–Virginia Western Community College, 1973
B.A.–James Madison University, 1975
M.F.A.–Univ. of North Carolina at Greensboro, 1977
M.A.–Hollins College, 1980

Burns, Sarah K.
Assistant Professor, English
B.A.–Meredith College, 1991
M.A.–North Carolina State University, 1992

Carroll, Annemarie
Professor, Psychology and Human Services
Co-Director, Honors Institute
B.A.–University of Buffalo, 1990
M.S.–University of Buffalo, 1993
Ph.D.–Kent State University, 1999

Cassell, Rhonda L.
Instructor, Psychology
A.A.–Kalamazoo Valley Community College, 1976
B.S.–Western Michigan University, 1985
M.S.–Radford University, 1992

Chamberlin, Annette H.
Assistant Professor, History
A.S – Virginia Western Community College, 1983
B.A.–Roanoke College, 1987
M.A.–VPI & SU, 1990
M.B.A.–Averett University, 1992
Ph.D.–VPI & SU, 2002

Chitwood, Sarah H.
Assistant Professor, French & ESL
Foreign Language Center Coordinator
B.A.–Roanoke College, 1987
M.A.–Univ. of North Carolina at Greensboro, 1995

Clark, Kristel L.
Assistant Professor, Accounting
B.B.A.–Roanoke College, 1995
C.P.A.–1999
M.S.– VPI & SU, 2005
MACIS–VPI & SU, 2006

Clark, Richard L., Jr.
Associate Professor, Engineering
B.S.–VPI & SU, 1991
M.S.–VPI&SU, 1994
Ph.D.–VPI&SU, 1996

Cleiland, Carolyn P.
Instructor, Nursing
B.S.–Hollins University, 1984
B.S.N.–Radford University, 2000

Crawford, Robert J.
Associate Professor, Microcomputer Systems Technology
A.A.S.–Virginia Western Community College, 1973
B.S.–VPI & SU, 1983

Davis, Linda S.
Associate Professor, Administrative Support Technology
B.S.–East Tennessee State University, 1970
M.S.–University of Tennessee, 1985

Dennis, Bonnie, S.
Assistant Professor, Psychology
B.A.–St. Bonaventure University, 1998
M.A.–St. Bonaventure University, 1998

Dent, Gary L.
Associate Professor, History
Co-Director, Honors Institute
B.A.–Lynchburg College, 1971
M.A.L.S.–Hollins University, 1975
D.A.–Catholic University, 1985

Durham, Linda Eileen
Professor, Humanities, Music and English
A.B.–Elon College, 1968
M.M.–University of North Carolina, 1971
M.A.L.S.–Hollins College, 1988
Ph.D.–Florida State University, 1998

Edwards, Kenneth L.
Professor, Business, Finance and Economics
B.S.–VPI & SU, 1971
M.B.A.–VPI & SU, 1978

Ellis, Kim C.
Assistant Professor, Information Systems Technology and Administrative Support Systems
A.A.S.–Virginia Western Community College, 1981
B.B.A.–Roanoke College, 1990
M.A.L.S.–Hollins University, 2002

Fenster, Amy S.
Instructor, Biology
B.S.–James Madison University, 1987
M.S.–Medical College of VA/VCU, 1992

Fightmaster, James W.
Assistant Professor, Mathematics
B.S.–Georgetown, 1957
M.Ed.–University of Virginia, 1965

Fittz, Mia W.
Tech Prep Programs Coordinator, Lecturer
B.S.–Saint Augustine's College, 1987
M.A.–VPI & SU, 1995

Fox, Teresa S.
Instructor, Practical Nursing
A.A.S.–John Tyler Community College, 1996
A.D.N.–Wytheville Community College, 1999
B.S.N.–Old Dominion University, 2005

Fulcomer, Judith
Instructor, 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

Gaynor, Richard J.
Assistant Dean, Social Sciences Division
Professor, Human Services
A.A.–Thomas Nelson Community College, 1972
B.A.–Christopher Newport, 1974
M.A.–Radford University, 1976
M.S.–Radford University, 1977

Gibson, Gary G.
REACH/Student Support Services, Counselor/LD Specialist, Lecturer
B.A.S.–University of Minnesota, 1992
M.S.–South Dakota State University, 1997
N.C.C.–National Certified Counselor, 2004
LPC–Licensed Professional Counselor, 2006

Gillette, Jeffrey S.
Assistant 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

Graham, Carole S.
Assistant Professor, Radiation Oncology
A.A.S.–Virginia Commonwealth University/ Medical College of VA, 1984
B.A.–Mary Baldwin College, 1990
M.Ed.–VPI&SU, 2002

Greenway, Brenda D.
Instructor/Radiation Oncology
A.A.S.–Virginia Western Community College, 1980

Gregory, Kim P.
Assistant 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.–VPI & SU, Mathematics 1987
M.S.–VPI & SU, Statistics, 1998

Hanson, David C.
Director of Institutional Research and Planning, Professor
B.S.-Ball State University, 1974
M.A.-Ball State University, 1975
Ed.D.-Ball State University, 1980

Harmon, Tracy L.
Assistant Professor, Administrative Support Technology
B.S.–Radford University, 1985
M.S.–Radford University, 1990

Harris, Heather A.
Instructor, Dental Hygiene
B.S.–West Virginia University, 1994

Hipp, J. Lee
Professor, Horticulture Technology
A.B.–Lenoir Rhyne College, 1971
B.S.–North Carolina State University, 1974
M.S.–VPI & SU, 1978

Holtman, Ellen P.
Associate Professor, Biology
B.A.–Mary Baldwin College, 1971
M.A.Ed.–VPI & SU, 1977

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

Hurt, Lynn H.
Associate Professor, Librarian
B.A. - North Carolina Central University, 1984
MALS - Hollins University, 1995
MIS - University of Tennessee, 2003

Kakouras, Ann R.
Assistant Professor, Accounting
C.P.A.
B.S.–VPI & SU, 1991
M.S.–VPI & SU, 1992

Koudelik-Jones, Paige R.
Assistant Professor, Mathematics
B.S.–Sam Houston State University, 1998
M.S.–Sam Houston State University, 2000
M.S.–VPI&SU, 2002

Kurtz, Jenifer R.
Instructor, English
B.S.–Radford University, 1997
M.A.–Radford University, 1999

Lamanca, Shirl Duke
Assistant Dean of Health Technology and Program Head of Radiologic Technology
Certificate–Lewis-Gale School of Radiologic Technology, 1968
A.A.S–Virginia Western Community College, 1977
B.S.–Roanoke College, 1983
M.S.–VPI & SU, 1989

Landrum, Larry S.
Associate Professor, Economics
B.S.–Auburn University, 1968
M.S.–Auburn University, 1971

Lewis, Elizabeth L.
Associate Professor, Administration of Justice and Sociology
B.S.–Tennessee Technological University, 1981
M.S.–University of Tennessee, 1988

Lofthus, II, Owen W.
Assistant 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.–VPI & SU, 1983
Ed.D.–VPI & SU, 1995

Martin, Sarah J.
Assistant Professor, Mathematics
B.S.–Roanoke College, 1975
M.A.Ed.–VPI & SU, 1977

McDaniel, Margaret P.
Associate Professor, English
B.A.–VPI & SU, 1970
M.A.–VPI & SU, 1971
M.S.-VPI & SU, 1981

McMinnis, Sandra R.
Administrative Officer for Career Placement Services, Assistant Professor
B.S. - James Madison University, 1970
M.S. - VPI&SU 1981

Milliman, Laura K.
Instructor, Librarian
B.S.- University of South Carolina, 1986
M.L.I.S. - University of South Carolina, 1993

Moore, Melaine J.
Assistant 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.
Assistant Professor, English
B.S –Radford University, 1971
M.A.L.S.–Hollins University, 1990

Moser, Ann H.
Associate Professor, English
B.S.–Barton College, 1972
M.A.–Radford University, 1988
Ph.D.–VPI&SU, 2002

Mulligan, Jennifer M.
Professor, Paralegal Studies
B.A.–Roanoke College, 1976
J.D.–Wake Forest University School of Law, 1979

Mullins, Margaret P.
Assistant Professor, Nursing
A.A.S.–Southwest Virginia Community College, 1972
B.S.N.–East Tennessee University, 1974
M.S.N.–University of Virginia, 1992

Nunn, Judith A.
Assistant Professor, Nursing
B.S.N.–Gwynedd-Mercer College, 1994
M.Ed.–VPI & SU, 1999

Olsen, Thomas C.
Associate Professor, Biology
B.A.–Virginia Military Institute, 1963
M.S.–University of Alabama, 1971

Pepin, Antoinette L.
Assistant Professor, Biology
B.S.–VPI & SU, 1976
M.S.–Utah State University, 1982
Ph.D.–George Mason University, 1999

Price, Patricia M.
Professor, English
B.A.–Mary Washington College, 1973
M.A.–University of Virginia, 1975
M.Ed.–University of Virginia, 1976
Ed.D–University of Virginia, 1991

Quinley, Patrick C.
Associate Professor, Counselor
B.A. –James Madison University, 1975
M.Ed.-James Madison University, 1976

Quinn, Avis C.
REACH/ Student Support Services Counselor/ Coordinator, Lecturer
Diploma–Interpreter for the Deaf, New River Community College, 1989
A.A.S.–Education and General Studies degrees, New River Community College, 1993
B.G.S.–Radford University, 1995
M.S.–Radford University, 1997
N.C.C.–National Certified Counselor, 2000
Ph.D.–VPI & SU, 2001
L.P.C.–Licensed Professional Counselor, 2002

Rakes, L. Jeffery
Assistant Professor, Radiologic Technology
Certificate in Radiologic Technology—Roanoke Memorial Hospital, 1969
A.A.S.–Virginia Western Community College, 1977
B.S.–Roanoke College, 1980

Reid, Robyn E.
Instructor, Mathematics
B.S.–USC, 1987
M.M.–USC, 1989

Richardson, Martha F.
REACH/Student Support Services Counselor, Lecturer
A.A.–Piedmont Virginia Community College, 1989
B.A.–University of Virginia, 1990
M.Ed.–University of Virginia, 1992
Ed.S.–University of Virginia, 1994
N.C.C.–National Certified Counselor, 1997

Riggins, Larry L.
Assistant Professor, Information Systems Technology
A.A.S.–Virginia Western Community College, 1989
A.A.S.–Virginia Western Community College, 1990
B.S.–College of William & Mary, 1997
M.A.L.S.–Hollins University, 2000

Roberson, Martha H.
Dental Hygiene Program Head
A.S. - University of Louisville, 1982
B.A. - Mary Baldwin College, 1998
M.S.H.A. - Virginia Commonwealth University, 2001

Schenkel, Jerry W.
Associate Professor, Information Systems Technology
B.A.–Marietta College, 1976
M.B.A.–University of Louisville, 1982

Schultz, L. David
Associate Professor, Mathematics
B.A.–University of California, 1967
M.A.–University of Arizona, 1969
C.A.S.–Hollins College, 1993

Shepherd, Betty Turner
Professor, Health
B.S.N.–Duke University, 1967
M.S.N.–University of Virginia, 1981
A.N.P.C.–University of Virginia, 1982
Ed.D.–VPI & SU, 1985

Sherman, Ruth A.
Assistant Professor, Mathematics
A.A.S.–Paul Smiths College, 1981
B.A.–State University of New York, 1983
M.S.–VPI & SU, 1986

Sieveking, Brian S.
Associate Professor, Art & Communication Design
B.A.–VPI & SU, 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.–VPI & SU, 2005

Strom, Jeffrey D.
Associate Professor, Business Management
B.B.A.–Radford University, 1992
M.B.A.–VPI & SU, 1993

Stuckey, Linda P.
Associate Professor, Accounting
B.B.A.–Florida International University, 1975
M.S.–Florida International University, 1977
C.P.A.–Virginia, 1984

Taylor, William H., Jr.
Instructor, Electricity/Electronics
A.A.–Ferrum College, 1966
A.A.S.–Virginia Western Community College, 1979
B.S.–Radford University, 1990

Thomas, Barry L.
Assistant Professor, Physics
A.S.–Virginia Western Community College, 1970
B.S.–Old Dominion University, 1972
M.S.–Old Dominion University, 1974

Thomas, Sue S.
Assistant Professor, Art
B.A.–State University of New York College at Fredonia, 1981
M.F.A.–Radford University, 2005

Webb, David E.
Assistant Professor, Mechanical Engineering Technology
B.S.–University of Kentucky, 1979

Williams, Dianne L.
Assistant Professor, Nursing
B.S.N.–Wright State University, 1977
M.S.N.–Pennsylvania State University, 1987

Wilson, Roger C.
Associate Professor, Speech/Drama
A.B.–Newberry College, 1966
M.A.–Miami University, 1968
M.S.–Florida State University, 1973
C.A.G.S.–VPI & SU, 1980

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.
Assistant Professor, Sociology
A.S.–Virginia Western Community College, 1991
B.A.–Roanoke College, 1993
M.S.–VPI & SU, 1998

Wright, Barbara A.
Instructor, Physical Education
A.B.Ed.–Glenville State College, 1973
M.S.–West Virginia University, 1974

Yancey, Deborah A.
Assistant Professor, 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

Staff

Academic & Student Affairs

Lorry Conklin ..... Vice President's Secretary
Pam Conner ..... Admin. & Office Specialist
Kathy Holland ..... Admin. & Office Specialist

Admissions

Carolyn Baratta ..... PT Admin. & Office Specialist
Jennifer Bobbitt ..... Education Support Specialist
Karin Cole ..... Education Support Specialist
Phyllis Holdway ..... PT Admin. & Office Specialist
Rebecca Kraemer ..... PT Admin. & Office Specialist
Laura Overbay ..... Education Support Specialist
Meg Patterson ..... Admissions & Records Coordinator
Connie Venable Smith ..... PT Admin. & Office Specialist
Laura Stevens ..... Education Support Specialist
Felicia White ..... PT Admin. & Office Specialist

Alliance for Excellence and Retention Services

Desiree Frye ..... Admin. & Office Specialist
Cheryl Hilton ..... Retention Services Assistant
Natasha Taylor ..... Education Support Specialist

Bookstore

Mary Beth Cornett ..... Bookstore Manager
Kristi Kirby ..... Retail Specialist
Becky Lorton ..... Retail Specialist

Business, Engineering and Technology Division

Lacey Carey (Business) ..... Division Secretary
Carlton Mabe ..... Trainer/Instructor
Tammy Meador ..... PT Admin & Office Specialist
Lynn Painter (Engineering) ..... Division Secretary
Karen Rayl ..... Project Director/Outreach Coordinator
Sandy Shelton ..... Office Manager
Paul Coleman ..... PT Tech, Prep Career Coach
Jackie Scruggs ..... PT Tech, Prep Career Coach
Vicki Langford ..... PT Tech, Prep Career Coach

Business Office

Arletha Butler ..... Admin. & Office Specialist
Becky Chauncey ..... Procurement Officer
Pam Cunningham ..... Admin. & Office Specialist
Gene Harrison ..... Admin. & Office Specialist
Connie Houff ..... Procurement Officer
Cheri Lankford ..... Business Office Manager
Trish Price ..... Procurement Officer
Susan Quesenberry ..... Admin. & Office Specialist
Linda Sawyer ..... Admin. & Office Specialist
Sarah Sink ..... Financial Services Specialist
Joanie Spillman ..... Admin. & Office Specialist
Debbie Weiss ..... Admin. & Office Specialist
Marla Whiteside ..... Financial Services Specialist
Dorissa Williams ..... PT Admin. & Office Specialist
Gracie Wilson ..... Financial Services Specialist

Campus Police

David Blankenship ..... Law Enforcement Officer
Guy Gibson ..... Law Enforcement Officer
Craig Harris ..... Campus Police Chief
Charles Karr ..... Law Enforcement Officer
Nicole Nance ..... PT Security Officer
S. Kelly Panganiban ..... PT Security Officer

Career Services

Rhonda Perdue ..... Admin. & Office Specialist

Counseling

Lee Allen ..... Education Support Specialist
Kathy Falligant ..... Admin. & Office Specialist
Brooke Ferguson ..... Education Support Specialist
Kimberly French ..... Education Support Specialist
Gloria Martin ..... PT Admin. & Office Specialist

Dean of Student Services Office

Bonny Simpson ..... Admin. & Office Specialist
Sharlona Wimmer ..... Education Support Specialist

Distance Learning

Debbie Mayo ..... Admin. & Office Specialist
Carrie Cao ..... PT Trainer & Instructor

Facilities Management

George Bevilacqua ..... Project Manager
Joe Collins ..... Grounds Supervisor
Corvin Davis ..... Grounds Technician
Brian Duncan ..... Trades Technician
Christopher Hicks ..... PT Grounds Technician
Henry Johnson ..... Trades Technician
Robert Kester ..... Trades Technician
Judy Lienhardt ..... Division Secretary
Matthew Perretta ..... PT Grounds Technician
Tom Price ..... Grounds Technician
James Ramsdell ..... Trades Technician
Pat Rhodes ..... Trades Supervisor
Richard Skelley ..... PT Trades Technician
Robert Smith ..... Trades Technician
Chris Vaughn ..... Grounds Technician
Bobby Walker ..... Trades Technician
Terry Whorley ..... Grounds Technician
Lionel Woody ..... PT Grounds Technician

Financial Aid/Veterans Affairs

Betty Aker ..... Education Support Specialist
Michele Hilts ..... Admin. & Office Specialist
Elaine Michael ..... PT Admin. & Office Specialist
Janet Rathbun ..... Education Support Specialist
Marianne Repko ..... Education Support Specialist
Holly Woodson ..... Admin. & Office Specialist

Health Technology Division

Julia Andrews ..... Division Secretary
Susan Cain ..... PT Admin. & Office Specialist
Colleen Hailey ..... PT Trainer/Instructor
Shirley Long ..... Trainer & Instructor
Rose Peters ..... Admin. & Office Specialist
Debra Tyree ..... Admin. & Office Specialist
Pam Woody ..... Education Support Specialist

Honors Institute

Brenda Tilley ..... PT Admin. & Office Specialist

Horticulture/Arboretum

Clark BeCraft ..... Horticulture Trainer/Instructor

Human Resources

Faith Janney ..... Human Resources Analyst
Heidi McClintic ..... Human Resources Analyst
Nadine Roper ..... PT Admin. & Office Specialist
Mike Shelton ..... Human Resources Manager
Brenda Xeroteres ..... Human Resources Analyst

Humanities Division

Dana Asciolla ..... Admin. & Office Specialist
Sarah Grubb ..... Division Secretary
Ginny Manetta ..... PT Media Specialist
Ellen Munger ..... PT Photography Lab Staff

Institutional Advancement

Dori Cawley ..... Admin. & Office Specialist
Wanda DiMarco ..... Admin. & Office Specialist
Linda Fayed ..... PT Admin. & Office Specialist
Erik Williams ..... Alumni Relations & Marketing

Institutional Research

Alicia Hayth ..... PT Research Assistant

Learning Technology Center

Lois Beck ..... Admin. & Office Specialist
Norman Blake ..... PT Admin. & Office Specialist
Robert Carroll ..... PT Admin. & Office Specialist
Nancy Cook ..... Education Support Specialist
Leo Cullen ..... PT Trainer/Instructor
Nancy Francisco ..... Trainer/Instructor
Pat Gilbert ..... PT Admin. & Office Specialist
Deborah Gladden ..... PT Admin. & Office Specialist
Mike McCaskey ..... Trainer/Instructor
Jamie Spradlin ..... Education Support Specialist
Melissa Williams ..... PT Admin. & Office Specialist

Library

Edgar Anderson ..... Library Specialist
Joan Ayers ..... PT Admin. & Office Specialist
Sandra Holland ..... PT Admin. & Office Specialist
Judy Weller ..... Library Specialist

Mail Room

Amy Maiolo ..... Admin. & Office Specialist

Natural Sciences and Mathematics Division

Kenny Dyer ..... Trainer/Instructor
Brenda Morrison ..... PT Admin. & Office Specialist
Mary Perry ..... Division Secretary
Patty Prevo ..... Trainer/Instructor

President's Office

Amy Balzer ..... PT Admin. & Office Specialist
Tara Nepper ..... Assistant to the President

Printing Services

Robert Coleman ..... Printing Technician
Sylvia Foster ..... Printing Services Supervisor
Joyce Story ..... PT Printing Technician

Public Relations and Marketing

Margaret Boyes ..... Public Relations/Marketing Specialist
Debbie Weeks ..... Marketing/Media Coordinator

Records Office

Lyn Hursey ..... Education Support Specialist
Aaramina Maynard ..... PT Admin. & Support Specialist
Meg Patterson ..... Admissions & Records Coordinator
Claire Thomas ..... Education Support Specialist
Candice Tucker ..... PT Admin. & Office Specialist

Social Sciences Division

Susan Clark . . . . . Division Secretary

Student Activities

Natasha Taylor . . . . . Education Support Specialist

REACH/Student Support Services

John Elliott. . . . . Education Support Specialist
Teresa Sowers . . . . . Admin. & Office Specialist

Technical Support Services

Tommy Amos. . . . . Information Technology Specialist
Bathurst Bagby. . . . . Supervisor, Client & Media Services
Nicole Bell . . . . . Information Technology Specialist
Cameron Carroll . . . . . Information Technology Specialist
Dawn Cox . . . . . Information Technology Specialist
Bill East . . . . . Supervisor, Network Support
Sheila Haynes . . . . . Admin. & Office Specialist
David Harrison. . . . . Technical Support Services Director
Michael Lucas. . . . . Information Technology Specialist
Tony Maiolo. . . . . Information Technology Specialist
Doug Parsons . . . . . Information Technology Specialist
Tim Stockton . . . . . Information Technology Specialist
Cathy Swain . . . . . Information Technology Specialist
Natalie Talbott . . . . . Information Technology Specialist
Rick Via . . . . . Information Technology Specialist
Layne Compton . . . . . Supervisor, Application Support

Workforce Development

Adalina Allicott . . . . . (RHEC) PT Admin. & Office Spec
Debbie Gilbert. . . . . (Greenfield) PT Admin. & Office Spec
Nadine Ingram-Carson . (Greenfield) Admin. & Office Spec
Anne Koon. . . . . (RHEC) Admin. & Office Spec
Ann Layne . . . . (Franklin County) PT Admin. & Office Spec
Paulette Parkhill. . . . . (Greenfield) PT Admin. & Office Spec
John Price . . . . . (Greenfield) PT Admin. & Office Spec
Tina Trudeau . . . . . (Main) PT Admin. & Office Spec
Patty Willhite. . . . . (Main) Admin. & Office Spec

Curriculum Advisory Committees

Accounting

Melinda T. Chitwood
Director
Brown, Edwards & Company

Bruce M. Grant
Director of Finance and Administrative Services
Western Virginia Water Authority

Suzy Lawrence
Director of Accounting
Carilion Health System

Richard B. Lester
IT Supervisor
Steel Dynamics Inc.

Harry Schwarz
Partner in Charge
Goldman & Co., LLP

Administration of Justice

Honorable James P. Brice
Retired Roanoke Judge

Diane V. Brogan
Probation Supervisor
Department of Juvenile Justice

Chris Ann Bryant
Bureau of Forensic Science

J. R. Bryant
Chief of Police
City of Salem

Poe Cobb
Federal Probation Officer

A.L. "Joe" Gaskins
Chief of Police
City of Roanoke

Octavia Johnson
Sheriff
City of Roanoke

James R. Lavinder
Chief of Police
Roanoke County

Administrative Support Technology/ Health Information Technology

Janice Agee
Supervisor, Business/Marketing and Info Technology
Roanoke County Schools

Brenda Anderson
Practice Administrator
Physicians to Children

Katrina Baxley
CSC Manager/RIP Coordinator
MedQuist, Inc.

Karen Burton
Account Manager/Healthcare
SPI

Debbie Harless
Transcription Supervisor
Lewis-Gale Medical Center

Bruce Johannessen
Manager
Virginia Employment Commission

Sandra Laughon
Manager
CMC Transcription
Carilion Health Systems

Eva Lipscomb
Employment Specialist
Carilion Health System

Jeannie Minton
Training Instructor
MedQuist, Inc,

Jane O'Keeffe
Manager
Human Resources
Roanoke Gas Company

Ann H. Rickman, CPC, CRS
Practice Manager
Roanoke Neurological Associates

Elnora Tucker
Recruiter
Carilion Health System

Barbara Williams
Practice Manager
Cave Spring Family Practice

Jeanne Woodward, BSN
Medical Consultant
Roanoke, VA

Architectural/Civil Engineering Technology

Barry Baird
President
Avis Construction Co., Inc.

Byron Dickson
President
Byron Dickson Associates

Sherry F. Crickenberger
Architectural Designer
Virginia Western Community College

John Garland
President
Spectrum Design

David Hammond
Vice President
Hayes, Seay, Mattern and Mattern

Don Pritchard
Vice President
Sheretz, Franklin, Crawford, Shaffner, Inc.

Automotive Analysis and Repair

Norman Altizer
Instructor
Roanoke City Schools

Drew Daniels
Services and Parts Director
Dominion Dodge

Ronnie Love
Automotive Consultant
Roanoke, VA

Carlton Mabe
Trainer and Instructor I
Virginia Western Community College

J.D. McClure
Service and Parts Director
Hammersley Group

Ron Parker
Service and Parts Associate Director
Dave Sarmadi Mitsubishi

Scott Shrewsbury
Service Manager
Magic City Ford

Frank Zimmerman
Service Manager
Duncan Acura

Building Construction Trades

James H. Buck
President
James Buck Plumbing and Heating, Inc.

E.M. Clifton
Vice President
G.J. Hopkins, Inc.

Bane Compton
Combination Inspector
Roanoke City Planning, Building and Development

David W. Light
President/Sales Manager
Air Mechanical Sales, Inc.

Paul W. Monaghan
Vice President
Varney Electric Company, Inc.

Lawrence H. Vest
President
Templeton-Vest, Inc.

Larry Waldron
Combination Inspector
Roanoke County Building Dept.

Business Management

Fred Balmar
Corporate Training Manager
Carter Machinery

Patty A. Cundiff
Owner
P.A.C. Floor Fashions, Inc.

Carolyn Fittz
Human Resource Director
Elizabeth Arden

Richard Harris, Jr.
Plant Manager
Info Seal

Eddie Hill
Department Manager
Allstate Insurance

Bruce Johannessen
Manager
Virginia Employment Commission

Carolyn Kazner
Community Banker
Wachovia Bank, Tanglewood Branch

Jane O'Keeffe
Human Resources
Roanoke Gas Company

Joseph J. Sgroi
Director of Human Resources
Roanoke County

Communication Design

Heather Cash
R.R. Donnelley & Sons Co.

Matt Dillon
Director of Account Management and Planning
Coral Graphic Services, Inc.

Tony Pearman
Access

Katie Wallace
Wallace Agency

Computer and Electronics and Mechanical Engineering Technology

Bonnie Allen
Vice President
Customer Operations
Keltech Electronics Innovators

Dennis Frye
Coordinator of Library Media Services
Roanoke City Schools

Dennis Harris
Production Director
The Roanoke Times

Dan Johnson
Electronics Instructor
Franklin County High School

Deanna Marion
Program Manager
MA-Com Inc.

Roy Marsico
Manager of Human Resources
ITT Night Vision

Earl R. Smith
Senior HR Consultant
Human Resources
American Electric Power

Culinary Arts

Bev Allman
Chair, Culinary Arts Program
Salem High School

Ronnie Blankenship
Executive Chef
Holiday Inn-Roanoke

Charles Chang, CEC, AAC
Fiji Island Restaurant

Lloyd W. Enoch, Director
Career & Technical Education
Roanoke City Public Schools

C. J. King, CPA
Cole & King, LLC, Certified Public Accountants

Peter Kipp, CHA, CHSE, CHSP
Sales Manager
4-H Educational Conference Center

Roger Light
Executive Chef
Shenandoah Club

Jeff Shupe
Chair, Culinary Arts Program
Patrick Henry High School

Mary C. Slack
Chair, Culinary Arts Program
Craig County High School

William Webb
Owner
Famous Anthony's Corporate Office

Dental Hygiene

Laura Arnold, RDH
Dental Hygienist

Charles E. Conklin, DDS
Director of Dental Services
Roanoke Memorial Rehab Center

Mary Catherine Dean, RDH
Virginia Western Community College

William Deyerle, DDS
Dentist

Kris Enright, DDS
Dentist

Marie Gibbs, RDH
Dental Hygienist
Veterans Administration Medical Center

Colleen Hailey, RDH
Clinical Coordinator
Virginia Western Community College

Heather Harris, RDH
Virginia Western Community College

Richard Joachim, DDS
Dentist

Linda Meador, RDH
Dental Hygienist

Lee Jones, DDS
Dentist
Dental Services
Roanoke Memorial Rehab Center

Robert McClanahan, DDS
Dentist

R. Douglas Ross, DDS
Dentist

Becky Tinsley, RDH
Dental Hygienist

Steve W. Wallace, DDS
Director of Dental Services
Veterans Administration Medical Center

Kay Webster, RDH
Dental Hygienist

***Carrie Rogers**
Student Representative

*Student Representative Appointed Annually

VWCC-DCC Joint Venture Dental Hygiene

Michelle Bernard
Coordinator
George Washington High School
Dental Assisting Program (Danville)

Dr. Wade Davenport
Dean of Arts and Sciences
Danville Community College

Shelby Gastellum, RDH
Dental Hygienist

Pat Gobble, RDH
Dental Hygienist

F.T. Grogran, III, DDS
Dentist

Colleen Hailey, RDH
Clinical Coordinator
Virginia Western Community College

Greg D. Howard, DDS
Dentist

Robin Jennings, RDH
Dental Hygiene Instructor
DCC

Anne B. Kornegay, RDH, MS
Dean of Natural Science, Mathematics and Health Technology
Natural Science, Mathematics and Health Technology
Virginia Western Community College

Tina Layman, RDH
Dental Hygienist

Jim Muehleck, DDS
Dentist

Dr. Albert Payne, DDS
Dentist

Martha Roberson, RDH, MSHA
Dental Hygiene Program Head
Virginia Western Community College

Cathy Rutledge, RDH
Dental Hygienist

Lynn Turner, RDH
Site Coordinator
Danville Community College

VWCC-LFCC Joint Venture Dental Hygiene

Karen Avey, RDH
Dental Hygienist

Gerald Brown, DDS
Dentist

Mary Catherine Dean, RDH
Virginia Western Community College

Lori Ellington, RDH
Dental Hygienist

Clark Fortney, DDS
Dentist

Dr. Thomas Gromling, DDS
Dentist

Colleen Hailey, RDH
Clinical Coordinator
Virginia Western Community College

Heather Harris, RDH
Virginia Western Community College

Brenda Hatch, RDH
Dental Hygienist

Polly Hoveter, RDH
Front Royal, VA

Kathleen Kanter, RDH
Dental Hygienist

Willard Lutz, DDS
Dentist

Claudia Mazurkiewicz, RDH
Site Coordinator
Lord Fairfax Community College

Martha Roberson, RDH, MSHA
Program Head of Dental Hygiene
Virginia Western Community College

James Wiley, DDS
Dentist

Mark Zemanovich, DDS
Dentist

*Student Representative Appointed Annually

Early Childhood Development

Rachel Blanks
Director
Second Presbyterian Weekday School

Jennifer Bradshaw
Education Coordinator, Early Head Start
Head Start – Total Action Against Poverty

Phyllis Cundiff
Special Education Department
Roanoke City Schools

Rosemarie Dillon
Director
First Baptist Child Development Center

Monique Johnson
Licensing Specialist
Piedmont Regional Office
Department of Social Services

Cleo Sims
Director
Head Start–Total Action Against Poverty

Linda Wright
Principal
Penn Forest Elementary

Fire Science

Chief Richard E. Burch, Jr.
Roanoke County Fire and Rescue

Chief Pat Counts
Salem Fire/EMS

Tommy Fuqua
Retired Battalion Chief
Roanoke County Fire/EMS
VWCC Adjunct Faculty

Lt. John Prillaman
Salem Fire/EMS

Battalion Chief Daryell Sexton
Roanoke County Training Chief

Battalion Chief Billy Altman
Acting Assistant Chief
Roanoke City Fire/EMS

Deputy Chief David Hoback
Acting Chief
Roanoke City Fire/EMS

Mike Pruit
Franklin County Public Safety

James Armstrong
Roanoke City Training Chief

HVAC

Gary Click
Executive Vice President
Southern Refrigeration Corporation

Jim Glover
Operations Manager
A. Frank Woods and Sons

Jim Gray
Mechanical Service Manager
Newcomb Electric

David Light
President/Sales Manager
Air Mechanical Sales, Inc.

Tracy Moore
Technical Service Advisor
Southern Refrigeration Corporation

Jason M. Price
Manager
Mechanical Division
Newcomb Electric

Dan Reynolds
Service Solutions Manager
Virginia Trane

Horticulture Technology

Marilyn Arbogast
Roanoke City Horticulturist
Department of Parks and Recreation

Ray Bowman
Q.L.C., Inc.

Adam Braaten
Bartlett Tree Company

Sam Camp
Superintendent
Ashley Plantation Golf Course

Bill Garren
Owner
Green Acres, Inc.

Fredric Gray
Owner-Manager
Gray's Nursery

Janette Hendrickson
Horticulture Instructor
Botetourt Technical Education Center

Autumn Martin
Owner
Floral Expressions

Alan McDaniels, PhD
Horticulture Department
Virginia Tech

Tyler Palmer
Owner
Obenchain's Garden Center

Human Services (formerly Mental Health)

Pat Hill
Blue Ridge Behavioral Healthcare
Community Training Services

Robin Hubert
On Our Own of Roanoke Valley, Inc.

Sheila Lythgoe
Blue Ridge Behavioral Healthcare
Project Link

Barbara Maberry
Flora Counseling Services

Denise May
Presbyterian Community Center

Sherri Songer
The Turning Point/Salvation Army

Dee Wallace-Lupiya
TRUST

Information Systems Technology

Nicole Bird
Web Analyst
County of Roanoke Information Technology

Joe Chase, PhD
Associate Professor/Acting Dean
College of Information Science and Technology
Radford University

Kathy Cox
Technology Planning Administrator
City of Roanoke

Paul Moore
Vice President, Information Systems
Shenandoah Life Insurance Company

Vicki Riggins
Team Leader
Carilion Technology Services Group

Kim Roe
Education Consultant
Human Resources Department
Carilion Health System

Eric Secor
Manager, Business Systems
MW Manufacturers, Inc.

Mark Wilbourn
IT Director
Steel Dynamics Inc.

Integrated Environmental Studies Specialization

Dr. Antoinette Pepin
Assistant Professor, Biology
Virginia Western Community College

Tom Collins
Program Manager, Minerals and Geology
Forest Ecology Group
George Washington and Jefferson National Forest

Anne B. Kornegay
Dean of Natural Science, Mathematics and Health Technology
Natural Science, Mathematics and Health Technology
Virginia Western Community College

***Liz Rumsey**
Student Representative

*Student Representative Appointed Annually

Motorcycle

Brian Barlow
General Manager
Star City Power Sports

Bruce Biondo
Motorcycle Program Manager
Department of Motor Vehicles

Kip Coles
Sales Manager
Star City Power Sports

Roger Hamner
Instructor, Motorcycle Safety Program
Virginia Western Community College

Carlton Mabe
Coordinator, Motorcycle Safety Program
Virginia Western Community College

Dennis Phillips
Coordinator, Motorcycle Safety Program
Central Virginia Community College

Jeffrey Poore
Instructor, Motorcycle Safety Program
Virginia Western Community College

Nursing/Practical Nursing

Kathleen Baudreau, RN
Chief Nursing Offices
Lewis-Gale Medical Center

Dr. Karma Castleberry
Vice Provost for Academic Enhancement
Radford University

LaVern Davis, RN, MSN
Supervisor of Health Services
Roanoke County Schools

Brenda Divers-Wiley, RN, BSN, MA Ed
Director of Education/Medical Library
Lewis-Gale Hospital

Elizabeth Green, RN
Assistant Vice President, Director of Nursing
Friendship Manor Health Care Center

Dr. Marcella Griggs
Director of Radford School of Nursing

Jennifer Lytle, RN DON
Department of Veterans Services
Poff Federal Building

Bonnie Matthews, BSN
Program Coordinator
Dept. of Federal Occupational Health

Virginia Osting, RN, MSN
Clinical Instructor
VA Medical Center

Maxine Smith, RN
Director of Educational Services
Richfield Nursing Center

Darrell VanNess, RN
Director of Nursing
Carilion Franklin Memorial Hospital

Valli Viol
Director of Behaviroal Health
Lewis Gale Medical Health

Paralegal Studies

Susan Albert
Paralegal
Krasnow Law Firm

Diane Casola, Esq.
Attorney
Woods, Rogers and Hazlegrove, PLC

Charles O. Cornellison
Associate Director of Gift Planning
Virginia Tech, University Development Gift Planning

Roy V. Creasy, Esq.
Attorney at Law
Roanoke VA

Heather Hale
Paralegal
Woods, Rogers and Hazlegrove, PLC

Edith Prillaman
Paralegal
Carter, Osborne and Miller

Michael K. Quinn, Esq.
Director, State Taxes
Norfolk Southern Corporation

Radiation Oncology

Carole S. Graham, MSEd, RT-R(T)
Director, Radiation Oncology Program
Virginia Western Community College

Anne B. Kornegay, MS
Dean of Natural Science, Mathematics and Health Technology
Natural Science, Mathematics and Health Technology
Virginia Western Community College

Shirl Duke Lamanca, MSEd, RT-R
Assistant Dean of Health Technology and
Program Head of Radiologic Technology
Virginia Western Community College

Freda T. Carson, RT-R(T)
Director, Radiation Oncology
Centra Health System
Virginia Baptist Hospital, Radiation Oncology Center

Margaret Harvey, MBA, RT-R(T)
Director, Academic Alliances
Human Resources
Carilion Health System

Robert C. Heath, MD
Medical Director, Director Radiation Oncology
Carilion Health System

Scott Myers, BS, RT
Director, Radiation Oncology
Lewis-Gale Regional Cancer Center

Cathy Sargent, BS, RT (R) (T)
Team Leader
Carilion Cancer Center of Western Virginia

Joseph L. Surace, MS
Radiation Physics
Carilion Health System

***Jody Wohlford**
Student Representative

***Paul Layne**
Student Representative

*Student Representative Appointed Annually

Radiography

Lee Anthony, PhD
Physics Associates

Sylvia Dickerson, RT-R
Director, Diagnostic Imaging
Carilion Roanoke Community Hospital

Rose Durham, AAS, RT-R
Lead Technologist
Lewis-Gale Physicians

Andrea Flora, BS, RT-R, MN, M
Director of Imaging Services
Carilion Crystal Spring Imaging

Carole Graham, MS RT
Director
Radiation Oncology Program

Susan Haynes, MEd, RT-R
Radiography Program Faculty

Joann Hines, RT-R
Chief Technologist
Radiology Service (114)
Veterans Administration Medical Center

Robin Kelley, RT-R
Manager, Systems and Support Services
Carilion Roanoke Memorial Hospital

Becki Keyes, RT-R
Roanoke Orthopedic Center

Anne B. Kornegay, MS
Dean of Natural Science, Mathematics and Health Technology
Natural Science, Mathematics and Health Technology
Virginia Western Community College

Shirl Duke Lamanca, MS, RT-R
Assistant Dean of Health Technology and Program Head of Radiologic Technology
Virginia Western Community College

Lisa Mayo, RT-R
Lead Technologist
Carilion Crystal Spring Imaging

Abram Patterson, MD, Radiography
Program Advisor & Medical Director of Diagnostic Imaging Services
Carilion Roanoke Community Hospital

Jeff Rakes, BS, RT-R, Radiography
Program Faculty and Clinical Coordinator

Michael Stoots
Director, Diagnostic Imaging
Lewis-Gale Medical Center

Carla Wiley, RT-R
Lewis-Gale Medical Center

Pam Wingfield, RT-R, RD, MS
Radiology Service (114)
Veterans Administration Medical Center

Pam Woody, MS
Health Technology Student Information Specialist

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