2006 – 2007
COLLEGE CATALOG

Virginia Western Community College

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P.O. Box 14007	3093 Colonial Avenue
Roanoke, VA 24038-4007	Roanoke, VA 24015

http:\\www.virginiawestern.edu
TTY: (540) 857-6351

**General Information and
Registration System: (540) 857-8922**

VIRGINIA COMMUNITY COLLEGE SYSTEM

President's Welcome

On behalf of the entire faculty and staff, I would like to welcome you to Virginia Western. We hope your decision to join the 9,000 students who take classes at our main campus in Roanoke, our off-campus sites in Franklin and Craig 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 skills in your current occupation, make a career change, or just take classes for personal enrichment–Virginia Western is your educational partner.

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

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

I encourage you to seek the guidance of our faculty and staff, to visit our website at www.virginiawestern.edu, or to call our Information Center at (540) 857-VWCC. If you would like to schedule a tour of our campus, student ambassadors 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 2006-2007

SUMMER TERM 2006

10-Week Session
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 29
Last Day to Apply for Graduation This Term...........June 2
Break (no classes)...June 21-25
Last Day to Withdraw Without Grade Penalty ....July 3
Independence Day Holiday...July 4
Last Day of Classes ....July 31

First 5-Week Session
First Day of Classes ....May 16
Last Day to Register/Add a Class ....May 18
Last Day to Drop and Receive a Refund...................May 20
Memorial Day Holiday............................. ....May 29
Last Day to Withdraw Without Grade Pe alty ....June 5
Last Day to Apply for Graduation ....June 2
Last Day of Classes ....June 19

Second 5-Week Session
First Day of Classes ....June 26
Last Day to Register/Add a Class ....June 28
Last Day to Drop and Receive a Refund..................June 30
Independence Day Holiday..July 4
Last Day to Withdraw Without Grade Penalty ....July 17
Last Day of Classes ....July 31

FALL SEMESTER 2006

16-Week Session
First Day of Classes ....August 21
Last Day to Register/Add a Class ....August 27
Last Day to Drop and Receive Refund............. September 3
Labor Day Holiday...September 4
Last Day to Apply for Fall Graduation.................October 2
Last Day to Withdraw Without Grade Penalty October 26
Faculty In-Service Day, No Day or Night Classes
....November 21
Faculty Research Day – No Day or Night Classes
....November 22
Thanksgiving Holidays.............................. November 23-25
Last Day of Classes ....December 9
Final Examinations.......................................December 11-16

SPRING SEMESTER 2007

16-Week Session
First Day of Classes ....January 8
Last Day to Register/Add a Class* ....January 14
Last Day to Drop and Receive Refund................January 21
Last Day to Apply for Spring Graduation...........February 5
Makeup/Spring Break*...................................... March 5-10
Last Day to Withdraw Without Grade Penalty .... March 21
Last Day of Classes .... April 28
Final Examinations.......................................April 30-May 5
Commencement Ceremony..May 11

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

Inclement Weather

Consult the College website for information on inclement weather policies:
http://www.vw.vccs.edu/Pages/
Our%20Facilities/inclementweather.html

Location of Virginia Western Community College

VIRGINIA WESTERN COMMUNITY COLLEGE

NORTH CAMPUS

SOUTH CAMPUS

PARKING LOTS
1   STUDENTS
1E FACULTY, STAFF & HANDICAPPED
3   STUDENTS
4   FACULTY, STAFF, STUDENTS & HANDICAPPED
5   VISITORS & REGISTRATION
6   ASSIGNED
7   STUDENTS, FACULTY, VISITORS & HANDICAPPED
8   FACULTY, STAFF & HANDICAPPED
8E FACULTY, STAFF & STUDENTS
9   STUDENTS
10 FACULTY & STAFF ONLY
11 VISITORS, HANDICAPPED & 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

Administration

President ....Dr. Robert H. Sandel
Vice President of Financial & ....Dwight E. Blalock
  Administrative Services
Vice President of Academic & ....Dr. John S. Capps
  Student Affairs
Vice President of Institutional .....Dr. Mark Q. Emick, Sr.
  Advancement
Vice President of Workforce .... Dr. Charles D. Terrell
  Development & Lifelong Learning
Administrative Officer for ....Kay Strickland
  Development
Administrative Officer for ....Ruth Z. Hendrick
  Workforce Development
Coordinator of Retention .... Dr. Gloria A. Lindsay
  Services and Student Life
Coordinator of Counseling............ Michael C. Henderson
Coordinator of Distance Learning .... Dr. Inez H. Farrell
  and Instructional Technology
Coordinator of Dual Enrollment... William A. Salyers, Jr.
Coordinator of Facilities Management.........Kevin Witter
Coordinator of Library .... David L. Hillman
Dean of Student Services...........................Lori C. Baker
Dean of Business, Engineering &..... James W. Poythress
  Technology
Dean of Humanities..........................Elizabeth C. Wilmer
Dean of Science, Mathematics............ Anne B. Kornegay
  & Health Technology
Dean of Social Sciences................... Dr. James E. Sargent
Dean of Workforce Development..........Carroll L. Gentry
  & Lifelong Learning,
Director of Continuing Education ..... Ronald L. Coleman
Director of Institutional ....Dr. David C. Hanson
  Research & Planning
Financial Aid & Veterans ....Dr. Larry E. Ewing
  Affairs Officer

Campus Telephone Numbers

Admissions Office & Registration 857-7231
Alliance for Excellence 857-7583
Bookstore 857-7334
Business Office 857-7201
Business Division 857-7272
Campus Police 857-7979
Career & Placement Services...........................857-7298
Continuing Education Department 767-6123
Counseling 857-7237
Vice President of Academic & Student Affairs 857-7313
Dental Clinic 857-7221
Distance Learning...857-6202
Engineering & Technology 857-7275
Financial Aid 857-7331
Greenfield Center...966-3984
Gymnasium Office 857-6068
Health Technology Division 857-7306
Human Resources 857-7282
Humanities Division 857-7385
International Education 857-6021
Learning Technology Center 857-7250
Library 857-7303
Math Center 857-7250
President's Office..857-7311
Records Office 857-7236
Retention Services..857-7583
Science and Mathematics Division 857-7273
Social Sciences Division 857-7276
Student Activities 857-6328
Student Services (Dean's Office) 857-6348
Student Support Services 857-7286
Veterans' Affairs 857-7395
Workforce Development (Higher Ed. Center) ...767-6120
Writing Center 857-7250

Emergency 857-7979
Information/Registration.................................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 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 VWCC 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, healthcare, 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 financial aid, career services, student activities, counseling, developmental courses, international education, cultural programming, and quality instruction.
- Promote productive and mutually beneficial relationships with local governments, local school divisions, and transfer institutions.

02/02

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 National League for Nursing, Accreditation Committee, 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, Financial Aid and Veterans Affairs and the Student Services Division Office.

Craig Hall contains the College Bookstore, faculty offices, and general classrooms.

Duncan Hall contains classrooms and faculty offices.

Webber Hall houses the laboratories for Welding, Automated Manufacturing, Construction Engineering, Drafting, Electrical, Microcomputer Systems, CAD, engineering microcomputers, classrooms, and faculty offices.

The Humanities Building on the South Campus opened in November 1994. The 30,000 square-foot building houses studio, gallery, lecture, and computer graphics lab space for the Art Department, photography darkroom and laboratory space, a large multipurpose room, and two general classrooms.

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 surrounded by a courtyard planted with shrubs selected to accent the 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, Cashier's Office, Human Resources, and Payroll Office.

Opposite Fishburn Hall is the Science and Mathematics building, Anderson Hall. Anderson Hall contains facilities for the Health Technology programs: Nursing, Dental Hygiene, and Radiography. 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 also houses the Learning Technology Center (which has an open computer lab), Graphic Arts, Math Center, and the Child Care Media Center.

The Business Science Building, alongside Colonial Avenue, contains Technical Support Services, Printing Services, classrooms and laboratories for the Administrative Support Technology, Information Systems Technology, Management and Accounting curriculums, as well as faculty and staff offices. The open computer laboratory is located in room M-302, and the hours of operation are Monday through Friday, 8:00 a.m. to 9:00 p.m., and Sundays 10:00 a.m. to 6:00 p.m. A cafeteria, drama and speech classroom, theater workshop, and the Whitman Auditorium are also located in this building.

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 the road.

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, along with a Physical Education building that contains classrooms and faculty offices.

Workforce Development Services/Lifelong Learning

The College's Workforce Development Services/Life Long 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 Center, Rocky Mount, Virginia
- Greenfield Education and Training Center, Daleville, Virginia
- Roanoke Higher Education, 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.
- Provide Work Keys 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 high skills training.
- development of comprehensive curriculums for non-traditional training and educational programs that incorporate technology and manufacturing standards.
- promote continuous improvement of workforce development programs and services in an effort to increase participation of underemployed and underrepresented population.
- advance 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.

The **Greenfield Education and Training Center,** located in Daleville, Virginia, is a 40,000-sq. ft. "high skills" 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 located in downtown Roanoke, Virginia. The space is dedicated to serving workforce development needs through its advanced computer and health related laboratories. This center also houses the program's central administrative functions.

Franklin County Workforce Development Center located in Rocky Mount, Virginia. The Center 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 that 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 college Admissions Office.

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:

- Complete a Virginia Western Application for Admission and application for Virginia Domicile for students requesting in-state tuition.
- Submit a completed High School/Home School Enrollment Approval Form to the College Admissions Office.
- Complete an on-campus academic assessment prior to enrollment in classes.
- 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.

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:

- Complete a Virginia Western Application for Admission and application for Virginia Domicile for students requesting in-state tuition.
- Parent must submit written authorization to enroll their child/applicant at the college.
- Complete an on-campus academic assessment prior to enrollment in classes.
- 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.

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 for admission and should have transcripts from all previous institutions attended sent to the college 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, 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**.

If these preliminary scores are acceptable, the applicant must also demonstrate proficiency in speaking and understanding the English language.

Current policies of the U.S. Immigration Department 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 credit courses 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 non-credit 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 or courses desired
   b. The goal or curriculum which 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 changes 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 courses(s) the applicant wishes to take
2. The curriculum the applicant wishes to enter and the goal concerning education

3. A statement on why the applicant has 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.

Noncurricular: (1) A student auditing course(s) for no credit; (2) High school or home school students who are 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 from admission to the following curricula: Dental Hygiene, Nursing, Practical Nursing, Radiation Oncology, and Radiography.

Applicants seeking admission to one of the Health Technology programs (Dental Hygiene, Nursing, Practical Nursing, Radiation Oncology, and Radiography) 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
Individuals who are at least 18 years of age seeking admission to one of the College's curricular programs and who lack a high school diploma or the recognized equivalent (General Equivalency Diploma or Home School Completion Certificate) will be instructed to take an ability-to-benefit (ATB) test. Individuals who pass the ability-to-benefit test may be admitted to the College as either noncurricular or curricular students, provided they have also satisfied other admission requirements. Students who fail the ability-to-benefit test may enroll as non-curricular students, until they satisfy curricular admission requirements.

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/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. 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 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 their academic pursuits 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.

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 parent or 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 #, 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 to the Admissions and Records Coordinator/Registrar, in writing, within the first two weeks of the semester.

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.

FREQUENTLY ASKED QUESTIONS....AND ANSWERS

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 on-line or by telephone if they prefer to do so. 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 term 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 857-8922.

Can I register and pay my tuition without coming to campus? Eligible students can register and pay tuition by telephone (857-7827) or on-line at https://vw.my.vccs.edu. Students may also mail a check (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 (857-7827) or on-line at https://vw.my.vccs.edu. Students may also drop in person during the refund/drop period by submitting an add/drop form to the Admissions Office. The refund/drop deadline for regular session classes is published in the Schedule of Classes. The refund/drop deadline for all other session classes is available by calling 857-8922. Students who wish to drop a class in person must do so during normal operating hours. For hours of operation, please call 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 (nor 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-serve 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? They are sold at the cashiers' window on the first floor (not the ground floor) of Fishburn Hall and in the Bookstore located in Craig Hall. Catalogs also can be obtained by mail. The cost is $2.

How can I get a transcripts sent to....? A student may simply send a written request (just 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 they can stop by the Records Office in person and complete a form. They may also request a transcript on-line 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).

Expenses

Tuition

Current tuition information can be obtained from the Admissions Office and will be 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 Dropping a Course

Students who enroll for courses after the official last date to pay for the term must pay their tuition at the time of enrollment. Failure to pay tuition does not guarantee that the student will be automatically dropped from the course. It is the student's responsibility to officially drop all unpaid courses prior to the beginning date of the course. 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 (857-7827) or on-line at https://vw.my.vccs.edu. Students may also drop in person during the refund/drop period by submitting an add/drop form to the Admissions Office. The refund/drop deadline for regular session classes is published in the Schedule of Classes. The refund/drop deadline for all other session classes is available by calling 857-8922. If the refund/drop deadline for a class falls on a non-business day and the student prefers to drop the class in person, the drop must be submitted to the Admissions Office during normal operating hours prior to the refund/ drop deadline. For hours of operation, call 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.

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 per semester for the full-time student. This cost can vary with the curriculum and is subject to change since it is based on publishers' and suppliers' listed prices.

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

Rules for Bookstore Refunds

The Bookstore Managers are the only authorized person who can accept books for refund. Books returned for refund are subject to inspection and must be in mint condition. If the books were purchased with shrink-wrap, the books must still be in the unopened original wrap with no markings or other damage. The book 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 of Tuition and Fees, College Loans, College Fines, or Other Debts Owed the College

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 will be expected to pay charges for such losses.

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

Financial Aid

How and When to Apply

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

Since most financial aid programs and grants have limited funding, except the Pell Grant, the date of application is a critical factor. An application can be submitted as early as January 1 (e.g., January 1, 2007, for the 2007-2008 academic year). Primary consideration is given to those 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 - 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 2005-2006 academic year, received at least small Pell Grant awards (approximately $200-$250 per semester as full-time students):

(a) a single independent student with no dependents of her own, filer of a Form 1040A, prior-year taxable income of $15,103, no prior-year untaxed income;
(b) a married independent student with no children, filer of a Form 1040A, prior-year taxable income of $19,814 (student) and $ 6,296 (wife), no prior-year untaxed income, reportable student assets of $23,157.
(c) a dependent student from a household containing two parents and one other child, prior-year parental income of $42,153 (all taxable), reportable parental assets of $24,396, prior-year student income of $ 4,060.

(d)æ married independent student with three children, filer of a Form 1040, prior-year taxable income of a $47,446 (husband) and $5,375 (student); reportable student assets of $4,845.

(e)æ dependent student from a household containing just a student and father, prior-year taxable incomes of $22,106 (father) and $8,125 (student), no prior-year untaxed income.a

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 2005-2006 academic year received maximum Pell Grant awards of $2,025 per semester as full-time students:

(a)ª a dependent student from a household containing two parents and three other children, prior-year parental income of $30,608 (all taxable), reportable parental assets of $10,205, prior-year student income of $4,058,a no reportable student assets;

(b)æ married independent student with two children, filer of a Form 1040, prior-year taxable income of $7,377 (student) and $26,802 (husband), reportable student assets of $3455;

(c)æ dependent student whose parents filed a Form a 1040A and had an adjusted gross income of less than or equal to $15,000. In this case, the student's income was inconsequential;

(d)æ single independent student with no dependents of her own, filer of a Form 1040A, prior-year taxable income of $6,251, no prior-year untaxed income;

(e)æ single independent student with no children, prior-year Social Security benefits of $5,884, no other prior-year income.a

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.

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 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. An application form, common to all programs, must be completed and forwarded to the Foundation Office. The following were the 2005-2006 scholarships:

Access, Inc., Scholarship
Alice Becker Hinchcliffe Williams 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
Brenda Shepherd Honorary Scholarship
Bridging the Gap Scholarship
Brown & Sons Farm Scholarship
Continental Societies Scholarship
David L. Nickerson Honorary Scholarship
Dental Hygiene Class of 1999 Scholarship
Down Syndrome Association of Roanoke Scholarship
Dr. and Mrs. Abe Jacobson Scholarship
Edward G. Magruder Honorary Scholarship
Elizabeth Wright Painter Memorial Scholarship
Ellie Knisely Teacher Education Scholarship
Fred Whitaker Company Scholarship
Friendship Scholarship
Gerry Montgomery Meador Scholarship
HCA Nursing Scholarship
Hall Associates Scholarship
James Mark Mitchell Memorial Art Scholarship
John C. Dillon Memorial 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
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
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, Fishburn Hall, Room 005, on the Virginia Western campus. The telephone number is 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......AND ANSWERS

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 (1,996 students received over $3.6 million in Pell Grant funds last year). The average cost of tuition and books for a full-time student at Virginia Western is around $1,500 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, which have been processed by May 31, will 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 6 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 6 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 & 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 which 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 website.

Counseling Services

Potential students and newly enrolled students should contact the Counseling Office, located in Chapman Hall, 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 are 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 website. Students may access college websites and Transfer Guides for Virginia Public Colleges and Universities through this link. Hard copy catalogs of many Virginia Colleges are maintained in the office, and 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 by reason of educational, cultural, economic background, or disability, 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, 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 Phase I of the program includes the following components: (1) through contacts that reflect genuine concern, faculty identify and use resources to assist students in accomplishing their educational goals; (2) one-on-one tutoring; and (3) a series of special topic workshops. 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 the 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 Chapman Hall (113). The phone number is 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.

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

   B. 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, will provide a listing of available housing, roommates, and other pertinent information within the community. (204 Student Center -857-6328).

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
ID Cards distributed to students, staff, and faculty may be obtained in the Student Activities Office, S200. 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.

I.D. 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 VWCC 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 will identify the individual by name and will bear a photo and a semester validation sticker, in the case of students and part-time employees. Each semester, the student and part-time employees must visit the ID Card Office to receive a current semester validation sticker. The sticker will be placed on the current ID Card. This sticker verifies current enrollment or employment. Without this sticker, the card is invalid. There will be 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, 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 a 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:

INSTRUCTOR	COUNSELOR
↓	↓
PROGRAM HEAD	DEAN
↓	OF STUDENT
DIVISION DEAN	SERVICES
	↓

VICE PRESIDENT OF ACADEMIC AND STUDENT AFFAIRS
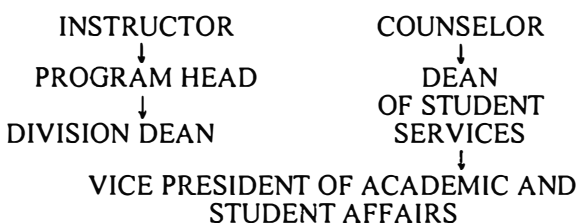
In the event that the grievance cannot be resolved satisfactorily following either of the above channels, an ad hoc grievance committee may be convened by the President of the College to review the case and make recommendations to the President. The President's decision shall be final. The ad hoc committee shall consist of at least one administrator, two teachers, and two students. Members from the division shall not be involved. The student filing the grievance may select one student and one teacher. The appointed administrator shall be chairman of the committee and will be responsible for calling the meeting and keeping a record of the proceedings. A complete statement of student rights, responsibilities, and conduct is included in the Student Handbook.

Policies/Procedures Relating to Sexual Misconduct

Sexual misconduct is a violation of the values and behavioral expectations of the College and will 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; or
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 Fishburn Hall 027, telephone number 857-6348. Students' allegations involving College employees may be reported to the appropriate supervisor, the Human Resources Manager, Fishburn Hall 204, telephone number 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 interferes with clear thinking and performance and imperils 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, switch-blades, 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:

1. 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.
2. 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.

Computer Guidelines

VIRGINIA COMMUNITY COLLEGE SYSTEM

Information Technology Student/
Patron Ethics Agreement

As a user of the Virginia Community College System's local and wide area computer systems, 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 Information Security Policy and the Computer Ethics Guideline. I will follow all the security procedures of the VCCS computer systems and protect the data contained therein.

If I observe any incidents of non-compliance 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 VCCNet administration, 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 network computing facilities.

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.

Computer Ethics Guideline

Thousands of users share VCCNet computing 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 VCCNet 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), unauthorized examination (18.2-152.5), or unauthorized use (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' internal procedures for enforcement of its policy are independent of possible prosecution under the law.

Definition

VCCNet resources include mainframe computers, minicomputers, microcomputers, networks, software, data, facilities and related supplies.

Guidelines

The following guidelines shall govern the use of all VCCNet 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 VCCNet 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. 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 VCCNet must comply with the policies and 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 VCCNet data trustee, security officer, appropriate College official or other responsible party may grant authorization to use electronically sorted 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 free-ware, 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 Officer or the Internal Audit Department.

Enforcement Procedure

1. Faculty, staff and students at the College or VCCNet facility should immediately report violations of information security policies to the local Chief Information Officer (CIO).

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 Office 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.

   c. Disciplinary action for faculty and classified staff, in accordance with the guidelines established in the State Standards of Conduct Policy.

3. In the event that a student is the offender, the accuser should notify the Vice President of Student Services. The Vice President, 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. Retribution for damages, materials consumed, machine time, etc. on an actual cost basis. Such restitution may include the costs 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.

Approval

This guideline shall remain in effect from March 31, 1995, until superseded or suspended. This guideline was approved and signed by the Chancellor of the Virginia Community College System.

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.

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.

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

A. Students with a course load of 19 credits in the fall and spring semester and 13 credits in the summer semester including College Survival Skills (SDV 108);
B. 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;
C. 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;
D. 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:

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

Grading System

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

A Excellent - 4 grade points per credit
B Good - 3 grade points per credit
C Average - 2 grade points per credit
D Poor - 1 grade point per credit
F Failure - 0 grade points per credit

I Incomplete - No 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 non-developmental studies courses, noncredit courses, orientation, and specialized courses and seminars at the discretion of the College. Up to seven (7) 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. 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 during the term in which the discontinuation of attendance occurs. Students must be making satisfactory progress in the course at the time of the 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 will be 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:

A. The course is a developmental course and the last grade is either a W or an R.
B. The first two attempts in the course include one or more W grades.
C. The course is a non-developmental course and the last grade earned is a D.

Except under the conditions cited above, a student will not be allowed to enroll in a course more than two times without the approval of the 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. Courses taken prior to summer 1990 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 re-enrollment will be excluded from the student's grade point average. Excluded grades will still be shown on the student's transcript, and the notation of "Academic Renewal" will be printed on the transcript. Academic Renewal petition forms may be obtained from the Records Office and must be approved by the Admissions and Records Coordinator/Registrar. Students should be aware that any grade that has been forgiven will not count toward graduation requirements.

Attendance

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

The student is responsible for making up all work due to absence. If a student cannot take a test or final examination at the scheduled time, he should contact the instructor prior to the test period. If 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.e Instructors will provide students with a statement of theire attendance policy during the first class meeting. When the number of unexcused absences reaches a sume equivalent to 30 percent of the total instructional time (e.g., 5 weeks in a 15-week course), the instructor wille drop the student from class. (See explanation under "Grading System".) There will be no refund ofetuitione or reinstatement in the course when an instructor hase dropped a student for non-attendance.e

Final Examinations

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

Grade Reports

Final grades can be accessed via My VWCC at thee Virginia Western website (www.virginiawestern.edu) after the end of each semester. Final grades are a part ofe 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 pointe 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 Certificatee from Virginia Western are eligible for graduatione honors. However, students who earn a Career Studiese certificate are not eligible for graduation honors. Appropriate honors based on the overall academic achievement (cumulative grade point average) ate Virginia Western Community College are as follows:e

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 pointe 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 1.50 will be on academic probation until such time as their cumulative average is 1.50 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 1.50 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 re-entry.

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 1.50 grade point average in each subsequent semester of attendance. Students remain on probation until their cumulative grade point average is raised to a minimum of 1.50. Failure to attain a cumulative 1.50 grade point average in each subsequent semester until the cumulative GPA reaches 1.50 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 re-entry. 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 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.

Required Term (Catalog Year) for Graduation

The Requirement Term (Catalog Year) to be 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 will be 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 nongraduates.

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 in Arts (AA) and Associate in 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 which 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 in 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 Counseling, and Nursing.

Transfer Courses

Senior colleges readily accept Virginia Western courses, which 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 websites and universities through the Virginia Western website.

Transfer Module

Most students will find that it is 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, which 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 can apply and be guaranteed junior level admission at Ferrum College, Virginia Commonwealth University and Virginia State University provided they complete an Associate in Arts or Associate in Science degree program at Virginia Western with a GPA of 2.0 or higher.

Hollins University offers VWCC students guaranteed admission at the junior level provided they complete an Associate in Arts or Associate in Science degree program at Virginia Western with a GPA of 2.5 or higher.

Old Dominion University offers VWCC students guaranteed admission at the junior level provided they complete an Associate in Arts or Associate in 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, Nursing Degree Program, Organizational Management, and Social Work Degree Program.

Roanoke College offers VWCC students guaranteed admission at the junior level provided they complete an Associate in Arts or Associate in 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.

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.

1. **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 **Tracks,** 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 in 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 in 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 in 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.

2. **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.

3. **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 in Arts (AA)
Liberal Arts Major
    Fine Arts Specialization

Associate in Science (AS)
Business Administration Major
Engineering Major
General Studies Major
Science Major
    Computer Science Specialization
    Health Sciences Specialization
    Integrated Environmental Studies Specialization
    Mathematics Specialization
Social Sciences Major
    Education Track
    Fire Science Specialization

Associate in Applied Science (AAS)
Accounting Major
Administration of Justice Major
    Career Track and Transfer Track
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
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
Paralegal Studies Major
Radiography Major
Technical Studies Major
Veterinary Technology Major

Certificate Programs
Air Conditioning and Refrigeration
Child Care
Clerical Studies
Geographical Information Systems
Geographical Information Systems Career Exploration
Interior Design
Medical Office Records Management
Medical Transcriptionist
Practical Nursing
Radiation Oncology
Welding

Career Studies Programs
- Air Conditioning and Refrigeration
- Architectural/Civil Engineering Aide
- Art Foundations
- Building Construction Trades
  - Building Construction Option
  - Electrical Option
  - HVAC Option
  - Plumbing Option
- Business Industrial Supervision
- CISCO CCNA Networking
- Computer Graphics and Internet Programming
- Culinary Arts
- E-Commerce Computer Application Development
- Electrical Wiring
- Emergency Medical Technology Basic Technician
- Firefighting and Prevention
- Geographical Information Systems Career Exploration
- Health Records Coding
- Health Technology
  - Pre-Dental Hygiene Option
  - Pre-Nursing Option
  - Pre-Radiography Option
  - Pre-Practical Nursing Option
  - Pre-Radiation Oncology Option
  - Pre-Surgical Technology Option
  - Pre-Veterinary Technology Option
- Help Desk Technician
- Homeland Security
- Horticulture
  - Floral Design and Indoor Plant Care
  - Landscaping and Outdoor Plant Care
  - Plant Propagation and Production
  - Urban Tree Management
- Industrial Technology
  - Electrical Option
  - Electronics Option
  - Electromechanical Option
  - Maintenance Option
  - Metal Processing and Welding Option
- Medical Office Specialist
- Microcomputer Systems Technology
- .NET and Database Administration
- Network and Database Administration
- Office Assistant
- Office Technology
- Pharmacy Technician

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:

A. have 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;
B. have been certified by an appropriate college official for graduation;
C. have earned a grade point average of at least 2.0 in all studies attempted that are applicable toward graduation in their curricula;
D. have filed an application for graduation in the Records Office;

E. have resolved all financial obligations to the College and returned all library and College materials.

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

A. fulfilled all of the course and credit hour requirements of the curriculum as specified in the College catalog with 25 percent of the credits acquired at Virginia Western;
B. been certified by an appropriate College official for graduation;
C. earned a grade point average of 2.0 in all studies attempted that are applicable toward graduation in their curricula;
D. filed an application for graduation in the Records Office;
E. resolved all financial obligations to the College and returned all library and other College materials.

Career Studies. 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.

Multiple Degrees

Although students may be eligible to graduate in multiple plans (curriculums) at Virginia Western, they are not eligible to earn more than one degree in the same plan. If a student has earned a degree in a plan with a "Track", (i.e., Social Sciences in the Education Track), they will not be allowed to receive a subsequent degree within the same plan (e.g., 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 which support life-long 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 which 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 life-long 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 insure that graduates are computer competent. Prior to graduation students will:

A. be able to demonstrate a working knowledge of computing concepts, components, and operations to accomplish educational and career tasks;
B. be able to use appropriate components of an integrated productivity software package involving word processing, spreadsheet, database, presentation, and/or communication applications;
C. be able to access, retrieve, assess, and apply networked information resources, e.g. on-line catalog, virtual libraries, the Internet and world wide web;

D. be able to 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 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 which 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.

The *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 skills and knowledge 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.

The *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 minimal 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.

The *career studies programs* are designed to prepare students for direct entry into the job market in occupational fields that require minimal 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. minimal 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 pre-recorded 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 A.S. 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 857-7385.

Honors Institute

The goal of the Honors Institute of Virginia Western Community College is to offer academic, cultural, and practical opportunities for the 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 but are not limited to: 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; and strong academic and social relationships with other highly motivated students.

Admission to the Honors Institute is by application requiring 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
Virginia Western Community College
P.O. Box 14007
Roanoke, Virginia 24038
540-857-6240
ledmonds@vw.vccs.edu
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 Freshman Orientation	1 cr.	ART 100 Art History & Appreciation or	
ENG 111-112 College Composition I-II	6 cr.	MUS 121-122 Music Appreciation I-II	6 cr.
ITE 115 Basic Computer Competency	3 cr.	Social Science Electives (any two):	
HLT 110 Personal & Community Health	2 cr.	ECO 202-201 Principles of Economics I-II	
BIO 101-102 General Biology I-II*	8 cr.	PSY 200 Principles of Psychology	
MTH 151 Mathematics for Liberal Arts I	3 cr.	PSY 215 Abnormal Psychology	
MTH 157 Elementary Statistics (or elective)	3 cr.	SOC 200 Principles of Sociology	6 cr.
ENG 241-242 Survey of American Literature I-II	6 cr.	SPD 100 Public Speaking	3 cr.
HIS 121-122 U.S. History I-II or		General Transfer Electives	9 cr.
HIS 101-102 History of Western Civilization I-II	6 cr.	Total credits for A.S. in General Studies	62 cr.

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

TOP TEN REASONS
FOR ATTENDING
VIRGINIA WESTERN COMMUNITY COLLEGE

1. **Teaching is the 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.

Minimum Requirements for Associate Degrees
TABLE 5-1

		Minimum Number of Semester Hour Credits			
	General Education:	(1) AA	(2) AS	(3) AA&S	(4) AAA/AAS
I.	English Composition	6	6	6	3
II.	Humanities/Fine Arts	6	6	6	3
	Foreign Language (Intermediate Level)	6	0	0	0
III.	Social/Behavioral Sciences	12	9[b]	12	6[a]
IV.	Natural Sciences	8	8	8	0 }3[a]
	Mathematics	6	6[c]	6[c]	0
V.	Wellness	2[d]	2[d]	2[d]	2[d]
	Other Requirements for Associate Degrees:				
VI.	Student Development	1	1	1	1
VII.	Major field courses and electives (columns 1-3) Occupational/technical courses (column 4)	13	22	19	47[e]
	Total for Degree =	**60-63**	**60-63**	**60-63**	**65-69[f]**

Notes: The VCCS Policy Manual, Section 2-IV-C, defines general education within the VCCS. Accreditation eligibility criteria of the Southern Association of Colleges and Schools (SACS) specify general education requirements and provide additional guidance regarding reading, writing, oral communication, and fundamental mathematical skills. Within the framework of Table 5-1 above, Section 2-IV-C, and SACS criteria, colleges must provide "...means by which students may acquire basic competencies in the use of computers." In addition to meeting the semester hour requirements listed above, each college must develop goal statements which include the eight elements found in the General Education statement in Section 2-IV-C of the VCCS Policy Manual.

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

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

d Health, physical education, or recreation courses that promote physical and emotional well being.

e AAA/AAS degree students should plan to take at least 30 hours in the major; the remaining hours will be appropriate to the major.

f Credit range for programs in the Health Technologies - 65-72 semester hour credits, for nursing the credit range is 65-69 semester hour credits.

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

Approved List of Transfer Courses
A.A. and A.S. Degrees

The purpose of this list of courses is to assist students in scheduling classes leading to an Associate in Arts (AA) or Associate in 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

(Any of the courses listed on this page can also be used as a General Elective.)

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

Computer Science Courses
CSC 201-202   Computer Science I-II

General Elective Course
ENG 111-112   College Composition I-II
SPD 100   Principles of Public Speaking

Health and Physical Education Courses
HLT 110   Concepts of Personal and Community Health
HLT 230   Principles of Nutrition & Human Development
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

Math 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   Introductory 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 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   Introduction to Environmental Compliance
ENV 162   Environmental Principles in Public Health
ENV 221   Natural Resource Management
*GOL 105   Physical Geology
*GOL 106   Historical Geology
GOL 225   Environmental 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 and the Land: An Introduction to Cultural Geography
*HIS 101-102   History of Western Civilization I-II
*HIS 121-122   United States History I-II
*PLS 211-212   U.S. 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

AA - Associate in Arts Degree
AS - Associate in Science Degree
AAS - Associate in Applied Science Degree
C - Certificate
CS - Career Studies

Accounting
Associate in 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 in 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

Course	Title	Credits
ACC 211-212	Principles of Accounting 1-11	6
ACC 213-214	Principles of Accounting Lab 1-11	2
ACC 215	Computerized Accounting	3
ACC 221-222	Intermediate Accounting 1-11	8
ACC 231	Cost Accounting I	3
ACC 261	Principles of Federal Taxation	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	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	Intro Computer Applications and Concepts	3
MKT 100	Principles of Marketing (or BUS 100 or BUS 200)	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SDV 108	College Survival Skills (or SDV 100)	1
SPD 105	Oral Communication (or SPD 100)	3
E[2]	Humanities/Fine Arts Elective	3

Total Minimum Credits for Degree　　　　67

[1]*Two credits of health (HLT) or physical education (PED) are required of all students. Consult approved health courses in the Description of Courses for selection. Veterans with an honorable discharge will be awarded HLT/PED credit based on military service.*
[2]*Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39.*

Suggested Course Sequence

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

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

Fall
ACC 221
ACC 231
ACC 261
BUS 225
BUS 241

Spring
ACC 215
ACC 222
AST 205
FIN 215
Humanities/Fine Arts Elective

Administration of Justice
Associate in 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. Two distinct track requirements are offered so the student can emphasize one or the other purpose as his or her primary goal.

Occupational Objectives: Both tracks are 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: Both tracks are 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. Though both tracks are designed to meet both objectives, the Career Track emphasizes occupational objectives, the Transfer Track emphasizes educational objectives. Of special note--though the transfer track 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 below.

ADMINISTRATION OF JUSTICE CAREER TRACK (01)

CURRICULUM AND OTHER REQUIREMENTS

		Credits
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 120	Introduction to Mathematics (or MTH 157)	3
PLS 211-212	United States Government I-II	6
PSY 120	Human Relations (or PSY 200)	3
SDV 108	College Survival Skills (or SDV 100)	1
SPD 100	Principles of Public Speaking	3
E[3]	Humanities/Fine Arts Elective	3
E[4]	General Elective	11
E[5]	Administration of Justice Elective	12

Total Minimum Credits for Career Track Degree   **65**

[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] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39.*
[4] *While any 100 level course or higher may be used for general elective credit, the "Approved List of Transfer Courses" on page 39 provides good suggestions for general elective credit.*
[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 courses, 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 only offered in the fall semester and classes such as ADJ 227 and ADJ 229 are only offered in the spring semester.

Suggested Course Sequence

Fall	Spring
ADJ 100	ADJ 107
ADJ 105	ADJ 120
ADJ 236 (Fall only)	ADJ 229 (Spring only)
ENG 111	ENG 112
HLT/PED	MTH 120
ITE 115	SPD 100
SDV 108 or SDV 100	Elective

Fall	Spring
ADJ 130 (Fall only)	ADJ 227 (Spring only)
PLS 211	PLS 212
PSY 120	ADJ Elective
AJD Elective	ADJ Elective
Humanities/Fine Arts Elective	Elective

Radford University Bachelor Degree Program: Any student who completes the transfer track coursework requirements having "C" grade or above in all courses will be granted admission to the Radford University "Two-Plus-Two" Bachelor of Science degree program in Criminal Justice. This program is particularly attractive since a maximum of 87 semester-hour credits will transfer to Radford from Virginia Western and the remaining 33 semester-hour credits of Radford courses are offered on the Virginia Western campus; thus both the A.A.S. and B.S. 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, corrections, etc.) consult with the program head about such crediting.

Curriculum Admission Guidelines: Proficiency in high school English for both tracks; Algebra I for the Career Track; Algebra I, Algebra II, and Geometry for the Transfer Track. 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.

ADMINISTRATION OF JUSTICE TRANSFER TRACK

CURRICULUM AND OTHER REQUIREMENTS · Credits

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	U.S. Government I	3
PSY 200	Principles of Psychology	3
SOC 200	Principles of Sociology	3
SDV 108	College Survival Skills (or SDV 100)	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 Track 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 these hours 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] *In Transfer Track, the Radford "Two-Plus-Two" program requires 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 39.*
[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 only offered in the fall semester and classes such as ADJ 227 and ADJ 229 are only offered in the spring semester.

Suggested Course Sequence

Fall	Spring
ADJ 100	ADJ 120
ENG 111	ENG 112
ITE 115	HLT/PED
PLS 211	MTH 157
SDV 108 (or SDV 100)	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 in Applied Science (298)

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.

ADMINISTRATIVE SUPPORT TECHNOLOGY
ADMINISTRATIVE ASSISTANT SPECIALIZATION (05)

CURRICULUM AND OTHER REQUIREMENTS

		Credits
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 & Accuracy	1
AST 140	Introduction to Windows	1
AST 141	Word Processing I (Microsoft Word)	3
AST 201	Keyboarding III-Office Simulation	3
AST 205	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 108	College Survival Skills (or SDV 100)	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.*
[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 39.*
[4] *Prerequisites: AST 102 and 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 108 or SDV 100	

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
LEGAL ADMINISTRATIVE ASSISTANT
SPECIALIZATION (02)

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 Windows	1
AST 141	Word Processing I (Microsoft Word)	3
AST 205	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	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 108	College Survival Skills (or SDV 100)	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.*
[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 39.*
[4] *Prerequisites: AST 102 and 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 108 (or SDV 100)	

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	

ADMINISTRATIVE SUPPORT TECHNOLOGY
MEDICAL ADMINISTRATIVE ASSISTANT
SPECIALIZATION (03)

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 Windows	1
AST 141	Word Processing I (Microsoft Word)	3
AST 205	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 108	College Survival Skills (or SDV 100)	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.*
[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 39.*
[4] *Prerequisites: AST 102, AST 107 and HLT 143.*

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 108 (or SDV 100)	

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 AIRC 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 121-122-123	Air Conditioning and Refrigeration I-II-III	9
AIR 165-166	Air Conditioning Systems I-11	6
BLD 159	Mechanical Code and Certification Preparation	3
ELE 133-134	Practical Electricity I-II	6
WEL 120	Fundamentals of Welding	3

Total Minimum Credits for Certificate   27

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 121-122-123	Air Conditioning and Refrigeration I-II-III	9
AIR 165-166	Air Conditioning Systems I-II	6
BLD 159	Mechanical Code and Certification Preparation	3
ELE 133-134	Practical Electricity I-II	6
SDV 108	College Survival Skills (or SDV 100)	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	Social Science Elective	3

Total Minimum Credits for Certificate   **37**

Suggested Course Sequence

Fall	Spring
AIR 121	AIR 122
ELE 133	ELE 134
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 & Procedures I	3
ARC 221	Architectural CAD Applications Software I	3
CIV 135	Construction Management & Estimating	3
CIV 171	Surveying I	3
DRF 201-202[1]	Computer Aided Drafting and Design I-II	6
DRF 238	Computer Aided Modeling & Rendering	3
MTH 115	Technical Mathematics I	3

Total Minimum Credits for Certificate   24

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

Suggested Course Sequence

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

Fall	Spring
ARC 221	CIV 171

Architectural/Civil Engineering Technology
Associate in 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 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 3 units of mathematics (2 units of algebra and 1 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 & 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 & Rendering	3
EGR 216	Computer Methods in Engineering & Technology	3
ENG 111	College Composition I	3
GEO 200[2]	Introduction to Physical Geography	3
GIS 200-201	Geographical Information Sys. 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 Mat's for Engin. Tech.	3
MTH 115-116	Technical Mathematics I-II	6
PHY 201[4]	General College Physics I	4
SDV 101	Orientation to Engineering and Engineering Tech.	1
SPD 100	Prin. 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 39. 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 Humanities Transfer Courses" on page 39.*

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

Old Dominion University Bachelor Degree Program: As a result of an articulation agreement with Old Dominion University, students receiving an Associate in 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.

PENDING APPROVAL

GEOGRAPHIC INFORMATION SYSTEMS SPECIALIZATION (01)

CURRICULUM AND OTHER REQUIREMENTS

		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 Tech.	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
E[5]	Humanities/Fine Arts Elective	3
E[2]	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 39. 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 39.*

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	Intro to Computer Graphics	3
ART 250[2]	History of Design	3
PHT 101	Photography I	3
SDV 101	Visual Arts Orientation	1
Total Minimum Credits for Degree		**28**

[1]*Students interested in a transfer art program other than Communication Design should substitute ART 241 or 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

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**

PLUMBING OPTION (03)

BLD 20	Introduction to Plumbing	2
BLD 25	Analysis & 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 in 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 the counseling office of the community college 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: 4 units of high school English; 3 units of mathematics (algebra and geometry); 1 unit of laboratory science; and 1 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 202	Microeconomics	3
ECO 201	Macroeconomics	3
ENG 111-112	College Composition I-II	6
ENG 241	Survey of American Literature (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 108	College Survival Skills (or SDV 100)	1
SPD 100	Principles of Public Speaking	3
E[1]	Science Sequence	8
E[2]	Elective	6

Total Minimum Credits for Degree $\qquad$ **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 39.*
[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 108 or SDV 100
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 would be 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	English Composition	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	Spring
BUS 100	BUS 111
PSY 200	BUS 205

Fall
ENG 111
ITE 115
SAF 126
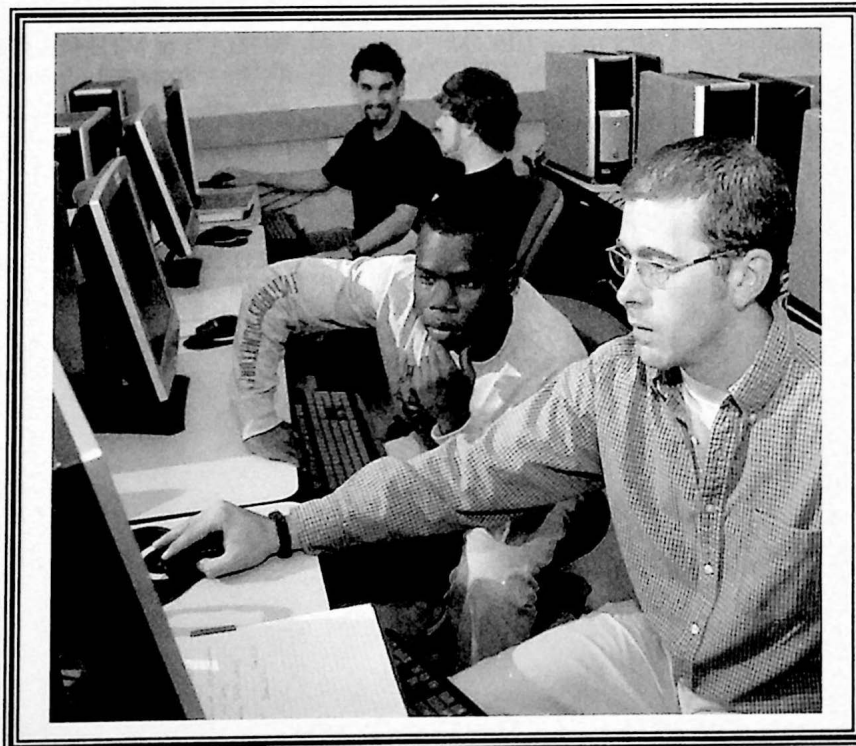
Child Care
Certificate (634)

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, A.A.S. 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 Dev. II (or CHD 120)	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	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 108	College Survival Skills (or SDV 100)	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 course work must be taken to fulfill the credit hours requirement.

Suggested Course Sequence

Fall	**Spring**
CHD 121 (Fall only)	CHD 122 or CHD 120 (Spring only)
CHD 125 (Fall only)	CHD 216 (Spring only)
CHD 210	ENG 112 or ENG 102
CHD 270 (Fall only)	HLT 135
ENG 111	PSY 120
HLT 106	PSY 235
SDV 108 or SDV 100	

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 Academy program 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 Windows	1
AST 141	Word Processing 1 (Microsoft Word)	3
AST 201	Keyboarding III-Office Simulation	3
AST 205	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 108	College Survival Skills (or SDV 100)	1

Total Minimum Credits for Certificate   36

[1] *Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test.*
[2] *Prerequisites: AST 102 and AST 107.*

Suggested Course Sequence

Fall	Spring
AST 102	AST 201
AST 107	AST 232
AST 113	AST 238
AST 140	AST 244
AST 141	
AST 243	
SDV 108 or SDV 100	

Fall
AST 205
AST 240
ENG 111

Communication Design
Associate in 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 publishing page design, and related occupations.

Curriculum Admission Guidelines: A satisfactory aptitude for drawing is desirable. Proficiency in high school English and 1 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[1,2]	Introduction to Computer Graphics	3
ART 221[6]	Drawing III (Figure Drawing)	3
ART 243[6]	Watercolor I (or ART 241)	3
ART 247	Painting Technique for Illustrators	3
ART 250[1]	History of Design	3
ART 251-252	Communication Design I-II	6
ART 281	Graphic Techniques I	3
ART 283[6]	Computer Graphics I (PhotoShop)	3
ART 284[6]	Computer Graphics II (Digital Illustration)	3
ART 287	Portfolio & Resume Preparation	3
ENG 111[1]	College Composition I	3
HLT/PED[3]	Health or Physical Education	2
MTH 120[4]	Introduction to Mathematics	3
PHT 101[1]	Photography I	3
SDV 101[1]	Visual Arts Orientation	1
SPD 105[6]	Oral Communication (or SPD 100)	3
E[5,6]	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] *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.*
[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.*
[4] *For students who plan to transfer, MTH 151 or MTH 163 is recommended.*
[5] *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.*
[6] *These classes may be taken prior to admission to the program.*

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-serve basis to those who have completed the prerequisites for those classes.

Suggested Course Sequence

These courses are required prior to admission.	These courses are recommended prior to admission.	Summer
ART 121-122	ART 250	HLT/PED
ART 131-132	ENG 111	MTH 120
ART 141	PHT 101	Social Sciences Elective
ART 180		
SDV 101		

Fall	Spring	Summer
ART 221	ART 247	Social Science Elective
ART 241 or ART 243	ART 252	
ART 251	ART 284	
ART 281	ART 287	
ART 283	SPD 105 or SPD 100	

Computer and Electronics Technology
Associate in 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 and 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 3 units of mathematics (2 units of algebra and 1 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 in 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 & Technology	3
ELE 147	Electrical Power and Control Systems	3
ELE 239	Programmable Controllers	2
ENG 111	College Composition I	3
ETR 113-114	D.C. and A.C. 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 Tech.	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	3-4
E[3]	Social Science Electives	6

Total Minimum Credits for Degree   68-69

[1] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39.*
[2] *Students may choose from DRF 201, ETR 285, TEL 250 or TEL 251. Students may be 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 38." 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 Day Course Sequence

Fall	Spring
EGR 216	ELE 147
ENG 111	ETR 114
ETR 113	MTH 116
MTH 115	TEL 151
SDV 101	Humanities/Fine Arts Elective
TEL 150	

Fall	Spring
ETR 255	ELE 239
ETR 281	ETR 261
PHY 201	HLT/PED
Technical Elective	PHY 202
Social Science Elective	SPD 100 or SPD 105
	Social Science Elective

Computer Graphics and Internet Programming
Career Studies Certificate (072)

Purpose: This program is designed to provide proficiency in computer graphics, web page design, and internet/intranet programming for either the first-time professional or returning professional. Graduates will be qualified for jobs requiring skills in graphics software, web page design software, languages, and databases. A student needs to decide whether they want to specialize on the Microsoft or Sun Java platform when they begin the program.

This career studies will help prepare the individual for CIW (Certified Internet Web professional) associate and site designer.

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 110	Web Page Design I	3
ITD 112	Designing Web Page Graphics	3
ITD 136	Database Management Software	4
ITD 210	Web Page Design II	3
ITP 100	Software Design	3
ITP 112 or ITP 120	Visual Basic .Net I or Java Programming I	4
ITP 212 or ITP 220	Visual Basic .Net II or Java Programming II	4
ITP 244 or ITP 246	ASP .Net Server-Side Programming or Server-Side Java	4

Total Minimum Credits for Certificate 28

Note: Java: choose ITP 120, 220, and 246
VB.NET: choose ITP 112, 212 and 244

Suggested Course Sequence

Fall
ITD 110
ITD 136
ITP 100

Spring
ITD 210
ITP 112 or ITP 120

Fall
ITD 112
ITP 212 or ITP 220

Spring
ITP 244 or ITP 246

Culinary Arts
Career Studies Certificate (091)

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

Course	Title	Credits
HLT 106	First Aid & Safety	2
HRI 128	Principles of Baking	3
HRI 154	Principles of Hospitality Management	3
HRI 158	Sanitation and Safety	3
ITE 115	Basic Computer Literacy	3
SDV 108	College Survival Skills	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 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 108	HRI Elective	HLT 106
Social Science	Humanities Elective	
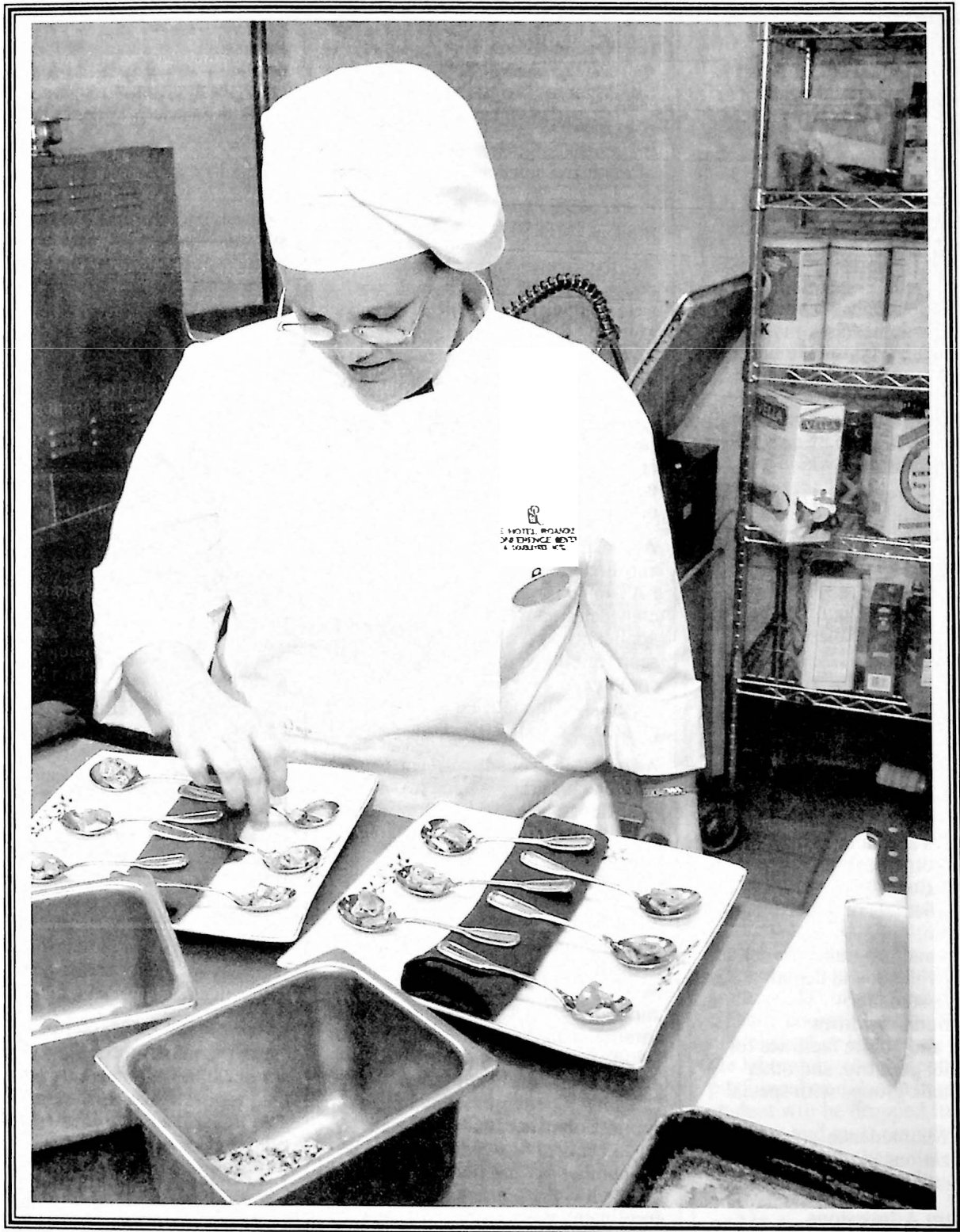
Dental Hygiene
Associate in Applied Science Degree (118)

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 (R.D.H.)

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:

(a) One unit each of high school or college biology and chemistry;
(b) Algebra II or college equivalent.

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

Prerequisites need to be completed prior to Fall 2007.

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. 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 late Spring (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, 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 **all** official college transcripts in one envelope to the VWCC Health Technology Information Office along with the VWCC application. The Dental Hygiene Admissions Advising Form will be completed upon receipt of the completed academic file by letter or office visit. Qualified applicants must complete the HOBET (Health Occupation Basic Entrance Test) at their own expense, which is non-refundable, 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.

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 applicants 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 cardio-pulmonary 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 non-refundable. 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 non-refundable.

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.

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, 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's 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 May 15 for the following spring semester, and no later than August 15th 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	3
ITE 102	Computers and Information Systems	1
NAS 185	Microbiology	4
PSY 230	Developmental Psychology	3
SDV 108	College Survival Skills (or SDV 100)	1
SPD 100[3]	Principles of Public Speaking	3
E[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 39.*

Required Course Sequence*

Fall – First Year
BIO 141
DNH 111
DNH 115
DNH 120
DNH 141
SDV 108 or SDV 100

Spring – First Year
DNH 142
DNH 145
DNH 146
DNH 216
ENG 111
NAS 185

Summer
BIO 142
DNH 130
DNH 150
DNH 190

Fall – Second Year
DNH 214
DNH 226
DNH 244
PSY 230

Spring – Second Year
DNH 227
DNH 230
DNH 245
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 if they were completed more than five years from the date of admission into the program.

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

Purpose: This program is designed to provide proficiency 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 2003, and DB2. A student needs to decide whether they want to specialize on the Microsoft or Sun Java platform when they begin the program. This certification will help prepare the individual for the Sun Certified Programmer and Sun Certified 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 or ITP 248	Introduction to E-Commerce or E-Commerce Application Integration	3
ITP 100	Software Design	3
ITP 112 or ITP 120	Visual Basic .Net I or Java Programming I	4
ITP 212 or ITP 220	Visual Basic .Net II or Java Programming II	4
ITP 244 or ITP 246	ASP .Net Server-Side Programming or Server-Side Java Programming	4
ITP 298	Capstone	3

Total Minimum Credits for Certificate   28

Note: Java: choose ITP 120, 220 and 246
VB.NET: choose ITP 112, 212, and 244

Suggested Course Sequence

Fall	Spring
ITD 136	ITE 160 or ITP 248
ITP 100	ITP 112 or ITP 120

Fall	Spring
ITP 212 or ITP 220	ITD 220
	ITP 244 or ITP 246
	ITP 298

Early Childhood Development
Associate in 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 childcare 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.

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

CURRICULUM AND OTHER REQUIREMENTS | Credits

Course	Title	Credits
CHD 121	Childhood Educational Development I	3
CHD 122	Childhood Educational Development II (or CHD 120)	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[2]	Guiding the Behavior of Young Children	3
CHD 210	Introduction to Exceptional Children	3
CHD 216	Early Childhood Programs, School, & Social Change	3
CHD 265[2]	Observation & Participation in Early Childhood Settings	3
CHD 270[3]	Administration of Early Childhood Educational Programs	3
ENG 111-112[4]	College Composition I	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 108	College Survival Skills (or SDV 100)	1
SPD 100	Principles of Public Speaking	3
E[5]	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] *May be taken only after completing CHD 121, CHD 122 or with departmental approval.*
[4] *Students planning to transfer should take English 111-112.*
[5] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39.*

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 108 or SDV 100

Spring
CHD 122 or CHD 120 (Spring only)
CHD 166 or CHD 118 (Spring only)
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 Elective

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	Practical Electricity I-11	6
ELE 138	National Electrical Code	2

Total Minimum Credits for Certificate   14

Suggested Course Sequence

Fall	Spring
BLD 111	ELE 110
ELE 133	ELE 134

Fall
ELE 138
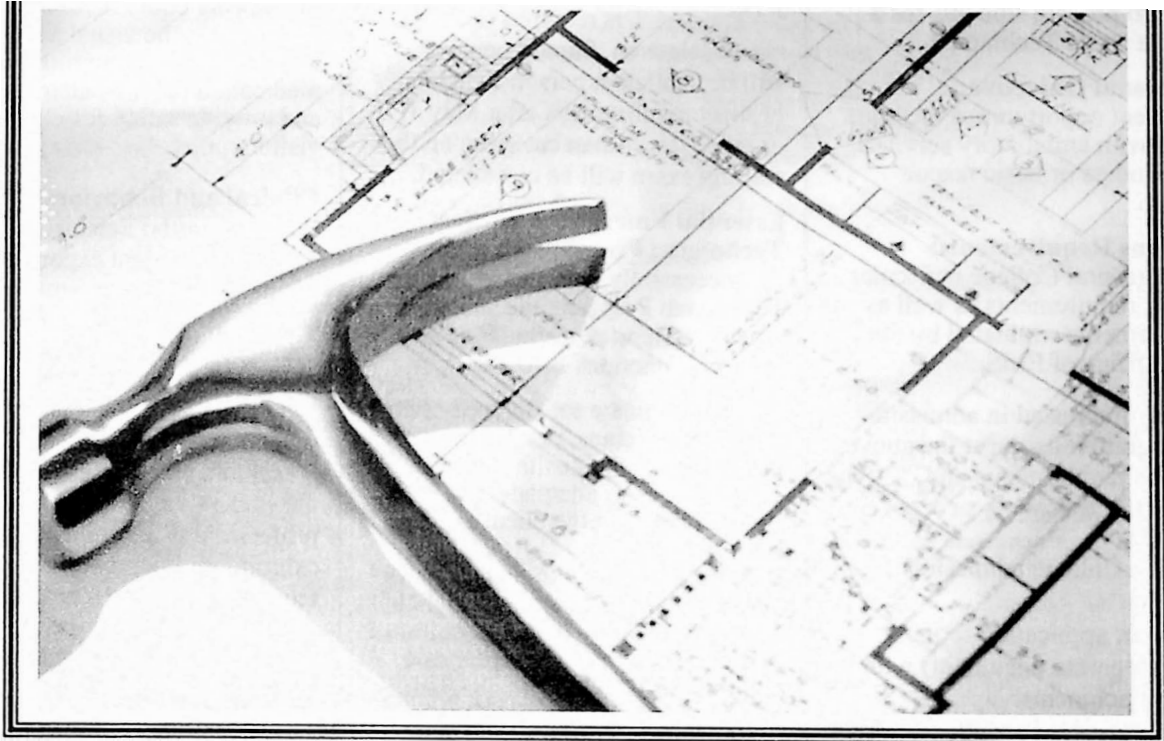
Emergency Medical Technology – Basic Technician
Career Studies Certificate (089)

Purpose: The certificate program in Emergency Medical Technology 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 1O, or score lower than cut score on the reading exam will be considered.

Essential Emergency Medical Technician Program Functions: To successfully complete the Basic Technician Program, the student must be able to perform all of the essential functions listed below:

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 (6) to eight (8) hours/day.
6. Walk rapidly for a prolonged period from one area to another.
7. Bend or squat frequently.
8. Climbing stairs.
9. Assist in lifting or moving clients of all age groups and weights (at least 125 lbs.).
10. Demonstrate adequate eye/hand coordination for dexterity in manipulation of equipment.
11. Use hands for grasping, pushing, pulling and fine manipulation.
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.

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 might be asked to withdraw from the program.

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 should include 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.

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. 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.

Program Contact:
Ron Coleman, Dean of Continuing Education, Workforce Development

CURRICULUM AND OTHER REQUIREMENTS

		Credits
BIO 101	General Biology	4
EMT 111	Emergency Medical Technology	3
EMT 112[1]	Emergency Medical Technology	3
EMT 215	Principles of Extrication	4
ENG 111	College Composition 1	3
PSY 200	Principles of Psychology	3
SDV 108	College Survival Skills (or SDV 100)	1
SPD 100	Public Speaking (or SPD 105)	3
E	Emergency Medical Technology Elective	1
E[2]	Mathematics Elective	3

Total Minimum Credits for the Certificate   28

[1] *EMT 111 is a prerequisite for EMT 112.*
[2] *MTH 151 for transfer or MTH 120 for non-transfer are recommended.*

Required Course Sequence*

Fall	Spring
BIO 101	EMT 112
EMT 111	PSY 200
ENG 111	SPD 100
STD 108	Math Elective –
	MTH 151 for transfer or
	MTH 120 non-transfer

Summer
EMT 215
EMT Elective

Engineering
Associate in 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 human-kind. These problems typically are multifaceted and involve the interplay of technological, economic, environ-mental, 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 in 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 the community college 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 the community college in planning their program and selecting electives.

Curriculum Admission Guidelines:
4 units English, 4 units mathematics (2 units algebra, 1 unit geometry, and 1 unit advanced math or trigonometry); 1 unit laboratory science; and 1 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 will be deemed eligible and given special consideration on a space available basis for admission to the College of Engineering 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 & Engineering Methods	3
EGR 126	Computer Programming for Engineers [C++]	3
EGR 140	Engineering Mechanics - Statics	3
ENG 111-112	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 & Engineering Tech.	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	6

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 39. 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 insure transferability. Recommended electives: HUM 201-202, ENG 241-242, and ENG 243-244. Additional transfer electives may be chosen from the list on page 38. However, students should consult with an advisor before making any selections.*
[4] *The following are suggested courses for various engineering majors: EGR 206, EGR 245/246, EGR 251/252, EGR 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
MTH 277	MTH 291
PHY 241	PHY 242
Engineering Science Elective	SPD 100
Humanities/Fine Arts Elective	Engineering Science Elective
Social Science Elective	Social Science Elective
HLT/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
EMT 111-112	Emergency Medical Technology I-II	6
ENG 111	English Composition	3
FST 105	Fire Suppression Operations	3
FST 111	Fundamentals of Hazardous Materials	3
FST 135	Fire Instructor I	3
FST 140	Fire Officer I	4
ITE 115	Intro Computer Applications and Concepts	3
PSY 200	Principles of Psychology	3
Total Minimum Credits for Certificate		**28**

Suggested Course Sequence

Fall	Spring
EMT 111	EMT 112
FST 105	FST 140
FST 111	ITE 115

Fall
ENG 111
FST 135
PSY 200

General Studies
Associate in 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: 4 units of English; Algebra I, Geometry, and Algebra II; 1 unit of laboratory science; and 1 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 108	College Survival Skills (or SDV 100)	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 39. 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] *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 39. 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 39. 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 39. 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 108 or 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 & Design 1-1l	6
EGR 216	Computer Methods in Engineering & 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 & Engineering Tech.	I
E[2]	Mathematics Electives	3

Total 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, 120, 163 or 166. See advisor for limitations.

Suggested Course Sequence

Fall	Spring
EGR 216	DRF 202
DRF 201[1]	GEO 200
SDV 101	ENG 111
Math 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 expose 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 & Design I	3
EGR 216	Computer Methods in Engineering and Engineering Technology (or ITE 115)	3
GEO 200	Introduction to Physical Geography	3
GIS 200	Geographical Information Systems I	3-4

Total Credits for Certificate   12-13

High School Sequence:

*Students should complete Algebra I-II and Geometry

Junior
DRF 201
EGR 216

Senior
GEO 200
GIS 200

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 and accuracy requirements.

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
E[5]	Facilities Coding Elective	3

Total Credits for Certificate   29

[1] *Prerequisite: AST 101 or 35 wpm on Keyboarding Proficiency Test.*
[2] *Prerequisite: HLT 143.*
[3] *Prerequisite: HIT 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 **

*Offered only in Fall Semester
**Offered only in Spring Semester
***AST 113 Keyboarding for Speed and Accuracy is strongly recommended as a co-requisite.

Health Technology
Career Studies Certificate (059)

Purpose: The curriculum is designed to provide students with a course of study that will help prepare them for admission to and success in health technology AAS degree and Certificate programs. Graduates from the program will have completed prerequisites and support courses that are required in Virginia Western's Associate Degree programs in Nursing, Dental Hygiene, and Radiography and the Certificates in Practical Nursing and Radiation Oncology. Students preparing for admission to the AAS degree distance program in Veterinary Technology through Blue Ridge Community College or the distance Certificate in Surgical Technology through Piedmont Virginia Community College may enroll in the course plans below to complete prerequisites and support courses for those programs. 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 either the Veterinary Technology program or the Surgical Technology program must apply to BRCC or PVCC respectively for admission to these programs.

Curriculum Admissions Requirements: High school diploma or GED; four units of high school English; one unit each of high school (or college) biology and chemistry; Algebra I, Geometry, and Algebra II for Radiography applicants; Algebra I and Algebra II for Dental Hygiene applicants; Algebra I and either Geometry or Algebra II for Nursing applicants. High school diploma or GED or a rising senior in high school; one unit of biology and one unit of Algebra I for Practical Nursing applicants. High school diploma or GED; four units of high school English; two units of high school (or college) biology, chemistry, or physics (preferred); and one unit of high school Algebra I, Geometry, and Algebra II for Radiation Oncology applicants. Science and mathematics prerequisites must be completed with a grade of "C" or better. Developmental courses may be taken to replace high school requirements.

CURRICULUM AND OTHER REQUIREMENTS Credits

HEALTH TECHNOLOGY CORE FOR AAS DEGREE PROGRAMS
(Dental Hygiene, Nursing, and Radiography)

ENG 111	College Composition I	3
HLT 143[1]	Medical Terminology I	3
ITE 102[3]	Computer and Info. Systems	
PSY 230[4]	Developmental Psychology	3
SDV 108	College Survival Skills (or SDV 100)	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 & Physiology I	4
BIO 142	Human Anatomy & Physiology II	4
NAS 185	Microbiology	4
Total		12
Total Credits for Certificate		**29**

PRE-NURSING OPTION (02)

BIO 141	Human Anatomy & Physiology I	4
BIO 142	Human Anatomy & 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 & Physiology I	4
BIO 142[2]	Human Anatomy & 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 Info. Systems	1
SPD 100	Principles of Public Speaking	3
SDV 108	College Survival Skills (or SDV 100)	1
Total Credits for Certificate		**17**

PRE-RADIATION ONCOLOGY OPTION (05)

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

DISTANCE LEARNING OPTIONS

PRE-SURGICAL TECHNOLOGY OPTION (07)
for the
CERTIFICATE OFFERED BY PVCC

ENG 111	College Composition I	3
HLT 143	Medical Terminology I	3
BIO 141-142	Anatomy & Physiology I & II	8
NAS 185	Microbiology	4
HLT 106	Safety & First Aid	2
SDV 100	Orientation	1
Total Credits for Certificate		**21**

PRE-VETERINARY TECHNOLOGY OPTION (06)
for the
AAS DEGREE OFFERED BY BRCC

CHM 111	College Chemistry I	4
ENG 111	College Composition I	3
HLT/PED	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
PSY 200	Introduction to Psychology	3
SDV 108	College Survival Skills (or SDV 100)	1
E[5]	Social Science Elective	3
E[5]	Humanities/Fine Arts Elective	3
Total Credits for Certificate		**22**

[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 39; however, PSY 200 is the preferred choice for Radiography
[5] Social science and Humanities/Fine Arts electives must be selected from the "Approve of Transfer Courses" on page 39.

Help Desk Technician
Career Studies Certificate (092)

Purpose:. This 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

Homeland Security
Career Studies Certificate (090)

Purpose: This curriculum is designed to prepare business and industry officials, schools, citizens and first responders for public safety.

Occupational Objectives: Training for positions in emergency services, security and preventions of terrorism.

Admission Requirements: General college curricular admission.

CURRICULUM AND OTHER REQUIREMENTS

		Credits
ADJ 227	Constitution Law for Justice Personal	3
ENG 111	English Composition	3
EMT 111	Emergency Medical Tech. I	3
EMT 112	Emergency Medical Tech. II	3
FIR 112	Hazardous Materials	3
FIR 238	Emergency Services Administration	3
PSY 200	Principles of Psychology	3
E	Elective	3
E	Elective	3

Total Minimum Credits for Certificate   27

Suggested Course Sequence

Fall
ENG 111
EMT 111
PSY 200

Spring
EMT 112
FIR 112
FIR 238

Fall
ADJ 227
Elective
Elective

Horticulture Technology
Associate in 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 the college'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 108	College Survival Skills (or SDV 100)	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 39.*

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 108 (or SDV 100)	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)

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 1 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	Intro Computer Applications and Concepts	3
MKT 100	Principles of Marketing (or MKT 110)	3
MTH 120	Introduction to Mathematics	3
SDV 108	College Survival Skills (or SDV 100)	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 231.*
[3] *Social Science electives must be selected from the "Approved List of Transfer Courses" on page 39.*

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 108 (or SDV 100)	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
HRT 207 (Fall only)
HRT 247 (Fall only)
HRT 260 (Fall only)
HRT 267 (Fall only)

Spring
HRT 236 (Spring only)
HRT 265 (Spring only)
Horticultural Elective

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
HRT 201 (Fall only)
HRT 207 (Fall only)
HRT 231 (Fall only)

Spring
HRT 202 (Spring only)
HRT 232 (or HRT 269) (Spring 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 in 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 in 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 in 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

Course	Title	Credits
BIO 101-102[1]	General Biology I-II	8
ENG 111-112	College Composition I-II	6
HLT 110[2]	Concepts of Personal and Community Health (or PED)	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 108	College Survival Skills (or SDV 100)	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 39.*
[6] *Students enrolling at Radford University should select a Sociology elective.*
[7] *Select one of the following: PSY 230, PSY 235 or PSY 236.*

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
ENG 111
MEN 100 (Fall only)
MEN 101 (Fall only)
PSY 200
PSY 220 (Fall only)
SDV 108 or SDV 100

Fall
BIO 101
HLT 110 or PED
MEN 221 (Fall only)
MTH 157
Humanities/Fine Arts Elective
Elective

Spring
ENG 112
MEN 102 (Spring only)
MEN 225 (Spring only)
MEN 290
PSY 215

Spring
BIO 102
ITE 115
MEN 222 (Spring only)
SPD 100
Elective

Industrial Technology
Career Studies Certificate (058)

Purpose: The curriculum is designed to upgrade the technical skills or expand the technical knowledge of existing employees; retrain employees whose job skills have become obsolete, or prepare potential employees for entry-level positions.

Occupational Objectives: Entry level or advancement opportunities in a broad range of technical trades. Typical job titles include Electronic Service Technician, Industrial Electrician, Maintenance Mechanic, Machine Tool Operator, or Welder and Cutter.

Curriculum Admission Guidelines: Proficiency in high school English and mathematics (1 unit of Algebra).

CURRICULUM AND OTHER REQUIREMENTS

Credits

ELECTRICAL OPTION (01)

BLD 111	Blueprint Reading and the Building Code	3
ELE 133-134	Practical Electricity I-II	6
ELE 138	National Electrical Code	2
ELE 295	Programmable Controllers	2
HLT 106	First Aid and Safety	2
ITE 102	Computer and Information Systems	1

Total Minimum Credits for Certificate   **16**

ELECTRONICS OPTION (02)

ETR 113	D.C. & A.C. Fundamentals I	4
ETR 123-124	Electronics Applications I-II	2
ETR 141-142	Electronics I-II	6
ETR 285	Fundamentals of Microcomputer Repair	4

Total Minimum Credits for Certificate   **16**

ELECTROMECHANICAL OPTION (05)

EGR 195	Microcomputer Systems Applications	1
ELE 195	Electrical Power and Control Systems	3
ETR 113	D.C. & A.C. Fundamentals I	4
ETR 123	Electrical Applications I	1
ETR 141	Electronics I	3
MEC 162	Fluid Mechanics Hydraulics/Pneumatics	3

Total Minimum Credits for Certificate   **15**

MAINTENANCE OPTION (03)

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**

METAL PROCESSING AND WELDING OPTION (04)

DRF 161	Blueprint Reading I	2
HLT 106	First Aid and Safety	2
MEC 119	Introduction to Basic CNC and CAM	3
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**
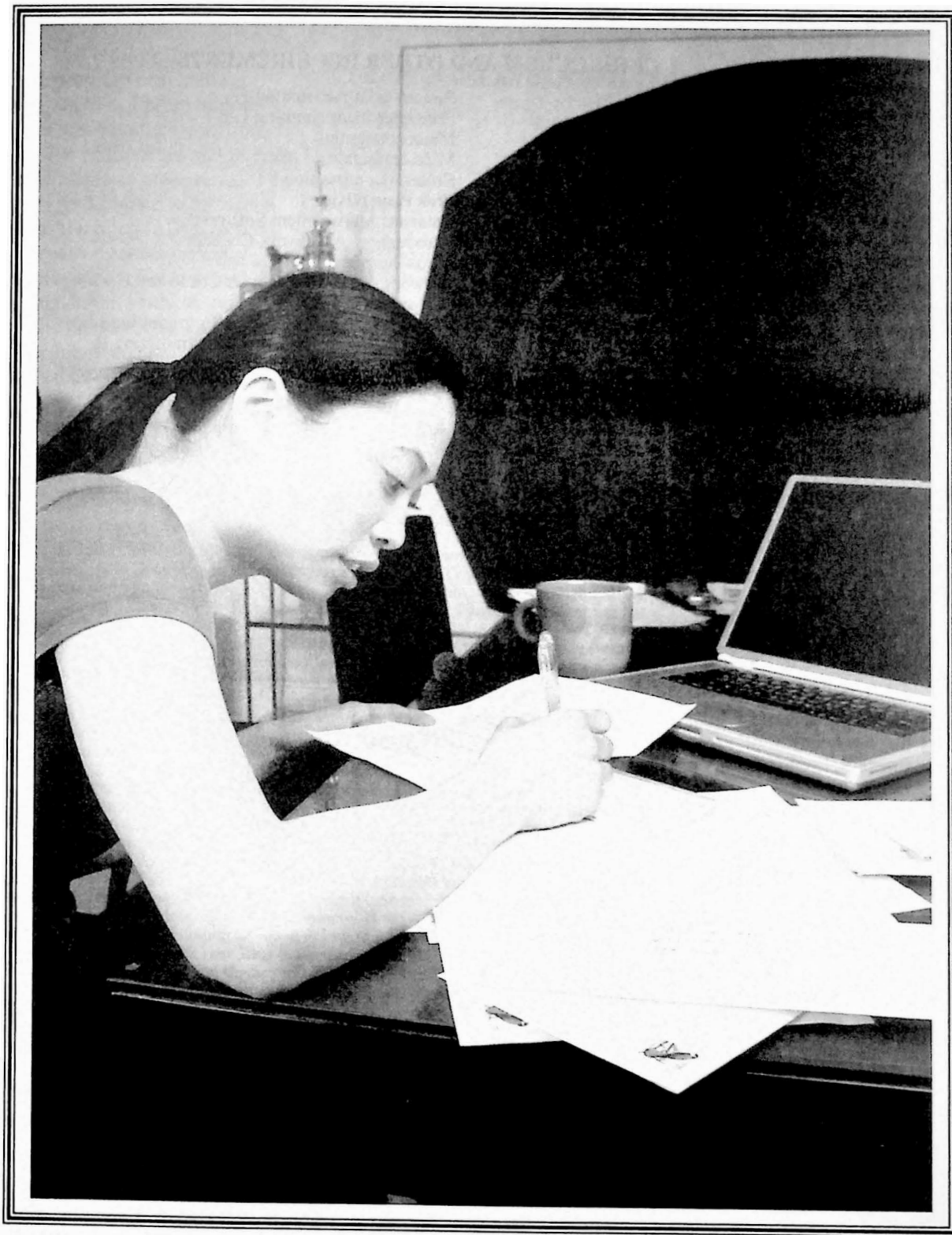
Information Systems Technology
Associate in Applied Science Degree (299)

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]	Macroeconomics	3
ECO 202	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 or ITP 120[7]	Visual Basic .NET I or Java Programming I	4
ITP 212 or ITP 220[7]	Visual Basic .Net II or Java Programming II	4
ITP 298	Capstone	3
MTH 141	Business Mathematics	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.*
[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] *For 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 .Net and Database Administration 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, .NET and Database Administration, Network and Database Administration, 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. NOTE: Students must have a strong foundation in microcomputer applications, including word processing, spreadsheet, database, internet, e-mail, and 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.*

Suggested Course Sequence

Fall
ECO 202
ENG 111
ITN 101
ITP 100
MTH 141
SDV 101

Spring
ACC 211
ACC 213
ECO 201
ITD 110
ITD 136
ITP 112 or ITP 120

Fall
ITN 170
ITN 261
ITP 212 or ITP 220
IT Electives

Spring
ITP 298
SPD 105
Humanities/Fine Arts Elective
IT Electives
HLT/PED

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 (2 units of algebra, 1 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 & Rendering I	3
ENG 111	College Composition I	3
IDS 100	Theory & Techniques of Interior Design	3
IDS 105	Architecture Drafting for Interior Design	3
IDS 109	Historical Styles of Furniture & Interiors	3
IDS 116	Period Residential Design	4
IDS 205	Materials and Sources	3
IDS 206	Lighting and Furnishings	3
IDS 225	Business Procedures	3
IDS 245	Computer Aided Drafting for Interior Designers	3
MTH 120	Introduction to Mathematics	3
E[1]	IDS Elective	3

Total Minimum Credits for Certificate　　37

[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 Elective	IDS 206
	IDS 225
	IDS 245

Liberal Arts
Associate in 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 the 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: 4 units of English; Algebra I, Geometry, and Algebra II; 1 unit of laboratory science; and 1 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

Course	Title	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	Intro 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 108	College Survival Skills (or SDV 100)	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 39. 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 39. 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 108 or SDV 100
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
Associate in 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 4 units of English; Algebra I, Geometry and Algebra II; 1 unit of laboratory science; and 1 unit of social science. Developmental courses may be recommended for students with deficiencies in English, reading, and/or mathematics.

FINE ARTS SPECIALIZATION (01)

CURRICULUM AND OTHER REQUIREMENTS $\qquad$ Credits

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	Visual Arts Orientation	1
SPD 100	Prin. of Public Speaking (or SPD 105)	3
E[2]	Foreign Language Elective	6-8
E[3]	Social Science Elective	6
E[4]	Natural Science Sequence	8

Total Minimum Credits for Degree $\qquad$ **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 39. 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 a t 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	**Spring**
ART 121	ART 122
ENG 111	ENG 112
ITE 101	SPD 100 or SPD 105
SDV 101	Foreign Language Elective
Foreign Language Elective	Social Science Elective
Social Science Elective	

Fall	**Spring**
ART 131	ART 132 or Foreign Language
ENG 241 or Foreign Language	Elective
Elective	HIS 102 or HIS 122
HIS 101 or HIS 121	HLT/PED
MTH 151 or MTH 163	MTH 152 or MTH 271
Natural Science Sequence	Natural Science Sequence

Management
Associate in 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 in 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.

MANAGEMENT MAJOR

CURRICULUM AND OTHER REQUIREMENTS   **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 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	Macroeconomics	3
ECO 202	Microeconomics	3
ENG 111	College Composition I	3
FIN 215	Financial Management	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MKT 100	Principles of Marketing	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SDV 108	College Survival Skills (or SDV 100)	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 39.*

Suggested Course Sequence

Fall
ACC 211
ACC 213
BUS 100
ENG 111
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 165
HLT/PED
MKT 100
SPD 105

Fall
ACC 261
BUS 205
BUS 225
BUS 241
ECO 202

Spring
ACC 215
AST 205
BUS 202
ECO 201
FIN 215
Humanities/Fine Arts Elective

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 students with deficiencies in English and mathematics.

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

BANKING AND FINANCE SPECIALIZATION (04)

CURRICULUM AND OTHER REQUIREMENTS   Credits

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	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	Intro Computer Applications and Concepts	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SDV 108	College Survival Skills (or SDV 100)	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 39.*

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 165
ITE 115	HLT/PED
MTH 120 or MTH 163	FIN 256 or MKT 100
SDV 108 or SDV 100	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

MARKETING SPECIALIZATION (05)

CURRICULUM AND OTHER REQUIREMENTS		Credits
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	Macroeconomics	3
ECO 202	Microeconomics	3
ENG 111	College Composition I	3
FIN 215	Financial Management	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro Computer Applications & 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 Survival Skills (or SDV 100)	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 39.*

Suggested Course Sequence

Fall	Spring
ACC 211	ACC 212
ACC 213	ACC 214
BUS 100	AST 205
ENG 111	BUS 125 or MTH 271
HLT/PED	HLT/PED
ITE 115	MKT 100
MTH 120 or MTH 163	MKT 216 or BUS 165
SDV 108 or SDV 100	or BUS 200

Fall	Spring
ACC 261	BUS 202
BUS 225	ECO 201
BUS 241	FIN 215
ECO 202	MKT 220
MKT 110	Humanities/Fine Arts
SPD 105	Elective

REAL ESTATE SPECIALIZATION (03)

CURRICULUM AND OTHER REQUIREMENTS		Credits
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 Math (or MTH 271)	3
BUS 200	Principles of Management (or BUS 111 or 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	Intro Computer Applications & 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 108	College Survival Skills (or SDV 100)	1
SPD 105	Oral Communication	3
E[2]	Humanities/Fine Arts Elective	3

Total Minimum Credits for Degree   69

[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 39.*

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 165
HLT/PED	HLT/PED
ITE 115	MKT 100
MTH 120 or MTH 163	REA 100
SDV 108 or SDV 100	

Fall	Spring
ACC 261	AST 205
BUS 225	ECO 201
BUS 241	REA 217 or FIN 215
ECO 202	REA 245 or LGL 115
REA 216	Humanities/Fine Arts
SPD 105	Elective

Mechanical Engineering Technology
(Automated Manufacturing Emphasis)
Associate in 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 3 units of mathematics (2 units of algebra and 1 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 in 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

Course	Title	Credits
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 & Technology	3
ENG 111	College Composition I	3
ETR 113	D.C. & A.C. 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 Tech.	1
SPD 100	Principles of Public Speaking or SPD 105	3
E[1]	Social Science Elective	6
E[4]	Technical Elective	3
E[5]	Humanities/Fine Arts Elective	3

Total Minimum Credits for Degree   65

[1] *Social science electives must be selected from the "Approved List of Transfer Courses" on page 39. 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 39.*
[6] *Students may substitute MTH 166 and MTH 175. See advisor for details.*

Suggested Course Sequence

Fall
DRF 201
EGR 216
ENG 111
MEC 119
MTH 115
SDV 101

Spring
DRF 202
DRF 226
MEC 113
MEC 131
MTH 116
Humanities/Fine Arts Elective

Fall
DRF 203
ETR 113
HLT/PED
MEC 132
PHY 201
Social Science Elective

Spring
DRF 238
HLT/PED
SPD 100
Social Science Elective
Technical Elective

Medical Office Specialist
Career Studies Certificate (087)

Purpose: This 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 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. 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	Business Communications	3
AST 232	Microcomputer Office Applications	3
HIT 149	Intro. 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 Degree		**29**

[1] *Prerequisite HLT 143.*
[2] *Prerequisite HIT 253.*

Suggested Course Sequence

Fall	Spring
AST 141	AST 205**
HIT 149*	AST 232
HIT 226	HIT 253
HLT 143	HLT 144

Fall
HIT 196*
HIT 254*

Offered only in Fall semester
**AST 107 Editing and Proofreading Skills is strongly recommended as a prerequisite.*

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	Business Communications	3
AST 232	Microcomputer Office Applications	3
ENG 111	College Composition I	3
HIT 130	Healthcare Information Systems	3
HIT 149	Intro. 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
E	Student Development Elective	1

Total Minimum Credits for Degree   **44**

[1]*Prerequisite HLT 143.*
[2]*Prerequisite HIT 253.*
[3]*Must be taken in final term or with instructor's or departmental approval.*

Suggested Course Sequence

Fall	Spring
AST 141	AST 205**
AST 232	ENG 111
HIT 149*	HIT 130
HLT 143	HIT 253
PSY 120	HLT 144
Student Development Elective	

Fall
ACC 211
ACC 213
HIT 226*
HIT 254*
HIT 290

Offered only in Fall semester
**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 Counseling Department and medical transcriptionist faculty is part of the admission process. Considering the limited available slots, early application is highly advisable. Upon notification of acceptance to the curriculum, 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 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 108	College Survival Skills (or SDV 100)	1
SPD 105	Oral Communications	3

Total Minimum Credits for Degree   **44**

[1] *Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test.*
[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	Spring
AST 102	AST 141
AST 107	AST 245
AST 113	ENG 111
AST 140	SPD 105
HLT 143	HLT 144
NAS 171	
SDV 108 or SDV 100	

Summer	Fall
HIT 125*	HIT 121**
	HIT 196**
	PSY 120

Offered only in Summer Semester
**Offered only in Fall Semester*

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	D.C. & A.C. Fundamentals I	4
ETR 123-124	Electronic Applications 1-11	2
ETR 141-142	Electronics 1-11	6
ETR 285	Fundamentals of Microcomputer Repair	4
TEL 150-151	Internetworking 1-11	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	

.NET and Database Administration

Career Studies Certificate (079)

Purpose: The .NET and database administration career studies provide an individual with a broad background in two critical administration areas of information systems technology on the Microsoft platform: namely .NET and database. This program will prepare the individual for the CompTIA Network+ certification, the MCAD (Microsoft Certified Application Developer) and the MCDBA (Microsoft Certified Database Administrator) credentials as well as providing a broad background in network and database concepts.

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 250	Database Architecture and Administration	3
ITD 258	Database Performance and Tuning	3
ITN 101	Introduction to Network Concepts	4
ITN 115	Windows 2003 Server	3
ITP 112	Visual Basic .NET I	4
ITP 215	XML Web Services	3
ITP 244	ASP.NET- Server-Side Programming	4
Total Minimum Credits for Certificate		**28**

Suggested Course Sequence

Fall	Spring
ITD 136	ITD 250
ITN 101	ITN 115
ITP 112	ITP 244

Fall
ITD 258
ITP 215

Network and Database Administration
Career Studies Certificate (081)

Purpose: The network and database administration career studies provide 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 MCDBA (Microsoft Certified Database Administrator) credentials as well as providing a broad background in network and database concepts.

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

		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 117	Windows 2003 Infrastructure Planning	3
ITN 170 or ITN 171	Linux System Administration or Unix I	3

Total Minimum Credits for Certificate 29

Suggested Course Sequence

Fall	Spring
ITD 136	ITD 250
ITN 101	ITN 115
ITN 114	ITN 170

Fall
ITD 258
ITN 116
ITN 117
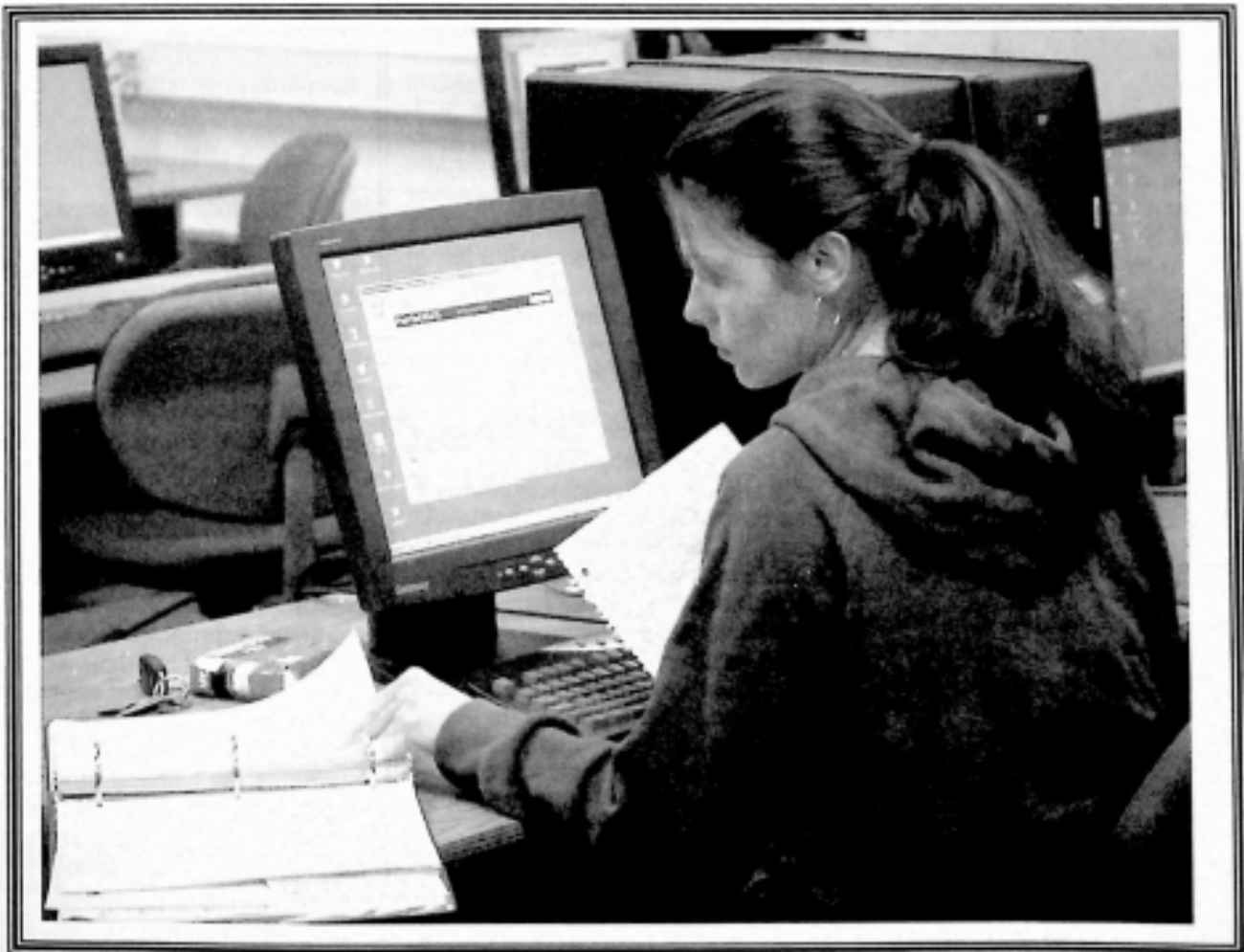
Nursing
Associate in Applied Science (156)
Also see: Practical Nursing

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 Program Head at (540) 857-6283.

Accreditation: This program is fully accredited by the National League for Nursing Accrediting Commission (NLNAC) located at 61 Broadway, NY, NY 10006, and approved by the Virginia Board of Nursing.

Occupational Objectives: Employment opportunities for the Registered Nurse include staff positions in hospitals, nursing homes, health departments, physicians' offices, clinics, day care centers, home health agencies and armed forces.

Radford University Bachelor Degree Program: As a result of an articulation agreement with Radford University, any student who completes the Associate in Applied Science (AAS) degree in Nursing, with a cumulative grade point average of 2.5 or higher will be granted admission to the Radford University's School of Nursing, RN to BSN tract.

Curriculum Admission Guidelines and Procedure for the Class of 2007:

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, and one unit of either Algebra II, geometry, or the equivalent. 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. 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 twelve-month period.
4. Applications for the 2007 class will be accepted beginning May 1, 2006 and must be completed no later than March 1, 2007. Should spaces be available, later applications will be considered. A complete application includes: an application to the College, official transcripts from all colleges attended, 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 and is non-refundable, a 2007 Nursing Application Form,

and a Nursing Admissions Advising Form. The Nursing Admissions Advising Form will be completed upon receipt of the completed academic file by letter or office visit to the Health Technology Information Office. 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. This test is at the student's expense and is non-refundable. Upon receipt of the results, the applicant may be contacted for an interview with the Program Head. It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts in one envelope to the VWCC Health Technology Information Office with the VWCC 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. All applicants will receive a letter to notify them of their status in the program in late Spring (May).

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 2007.

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 psychology, microbiology, and anatomy and physiology 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.

Please note BIO 141, BIO 142, and NAS 185 must be repeated if they were completed more than five years from 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 (6) to eight (8) 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. 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. All students admitted to the Nursing program must attend a two-day nursing orientation during the summer semester. 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. To keep Nursing program acceptance in good standing, students must maintain a C in Natural Science Program requirements (NAS 185, BIO 141 and BIO 142).

4. NUR 135 (Drug Dosage) is strongly recommended in the summer session preceding admission to increase the potential for success in the program.
5. Provide transportation to and from agencies utilized for clinical experience.
6. Purchase required lab supplies, uniforms and accessories.
7. Membership in the professional organization for two years.
8. Be prepared to attend classes and/or clinicals on day or evening shift.

Advanced Placement for LPNs: For LPNs seeking the AAS in Nursing, please note the application deadline is May 1, 2006 for the 2007 transition course.

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 non refundable.

The LPN will be awarded credit for NUR 121 and 122 upon completion of the following courses: BIO 141, BIO 142, NAS 185, ENG 111, NUR 115, NUR 135, and NUR 238.

Readmission:

1. 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 Program Head of Nursing 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.
2. 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.

Transfer to Baccalaureate Degree Program:

1. Graduates of the VWCC Nursing Program may be eligible to apply for admission with advanced placement to Radford University, Jefferson College of Health Sciences, or other colleges offering a baccalaureate degree in nursing.
2. Students who are planning to transfer to a baccalaureate degree program following the AAS degree are advised to take appropriate college transfer courses.

CURRICULUM AND OTHER REQUIREMENTS

		Credits
BIO 141-142	Human Anatomy and Physiology I-II	8
ENG 111	College Composition I	3
ITE 102	Computers & 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 108	College Survival Skills (or SDV 100)	1
SPD 100	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 39.*

Required Course Sequence*

Fall – First Year
BIO 141
ENG 111
NUR 121
SDV 108 or SDV 100

Spring – First Year
BIO 142
NAS 185
NUR 122

Fall – Second Year
ITE 102
NUR 238
PSY 200
SPD 100 or SPD 105

Spring – Second Year
NUR 239
PSY 230
Humanities/Fine Arts Elective

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

NOTE:

BIO 141, 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 from 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.

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 VWCC 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	Proofreading and Editing	3
AST 113[2]	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Windows	1
AST 141	Word Processing I (Microsoft Word)	3
AST 154	Intro. to Voice Recognition Software	1
AST 205	Business Communications	3
AST 232	Microcomputer Office Applications	3
AST 238	Advanced Word Processing	3
E	AST elective	3
Total Minimum Credits for Career Studies 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.*
[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.*

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	3
AST 140	Introduction to Windows	1
AST 141	Word Processing I (Microsoft Word)	3
AST 205	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.*

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

EDUCATION PAYS

HISTORICAL FAMILY INCOME BY EDUCATIONAL ATTAINMENT

(25 YEARS OLD AND OVER)

Education Level	Average Annual Earnings
Doctorate	$147,529
Professional	$165,079
Master's	$119,559
Bachelor's	$ 99,070
Associate of Arts	$ 72,097
Some College	$ 66,919
High School	$ 55,729
9th to 12th Grade (no diploma)	$ 37,194
Less than 9th Grade	$ 32,324

(Source: U.S. Census Bureau 2004)

Paralegal Studies
Associate in Applied Science Degree (260)

Purpose: The curriculum is designed to provide an individual with a sufficient level of knowledge, understanding, and proficiency to perform tasks in meeting the needs of clients that can be performed by a trained paraprofessional working under the direction and supervision of a lawyer. 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 in private, 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	Prin. of Accounting I	3
ACC 213	Prin. of Accounting Lab I	1
ENG 111	College Composition	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
LGL 110	Introduction to Law & the Legal Assistant	3
LGL 115	Real Estate Law for Legal Assistants	3
LGL 117	Family Law	3
LGL 125	Legal Research	3
LGL 126	Legal Writing	3
LGL 200	Ethics for the Legal Assistant	1
LGL 216	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 108	College Survival Skills (or SDV 100)	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 39.*

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 108 or SDV 100	

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 convictions or charges pending a felony, 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	PSY 120
HLT 143	HLT 262
HLT 250	HLT 264
HLT 261	HLT 190
HLT 263	HLT 190
ITE 102	
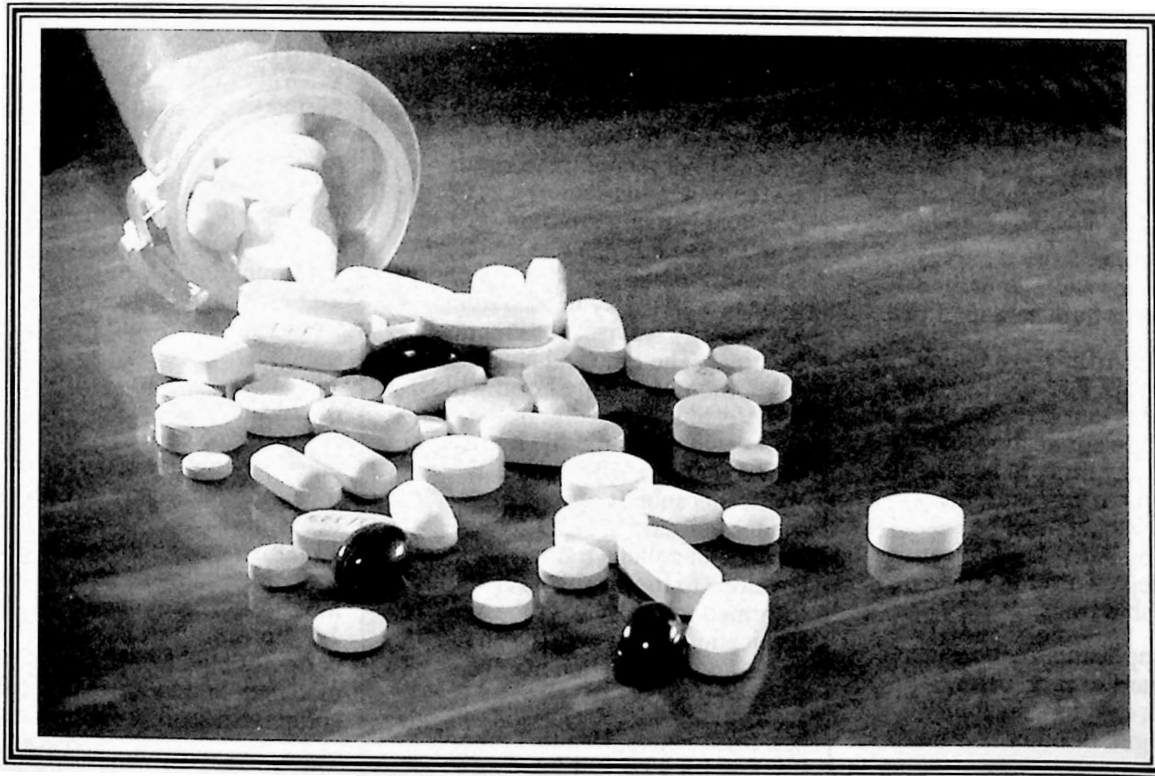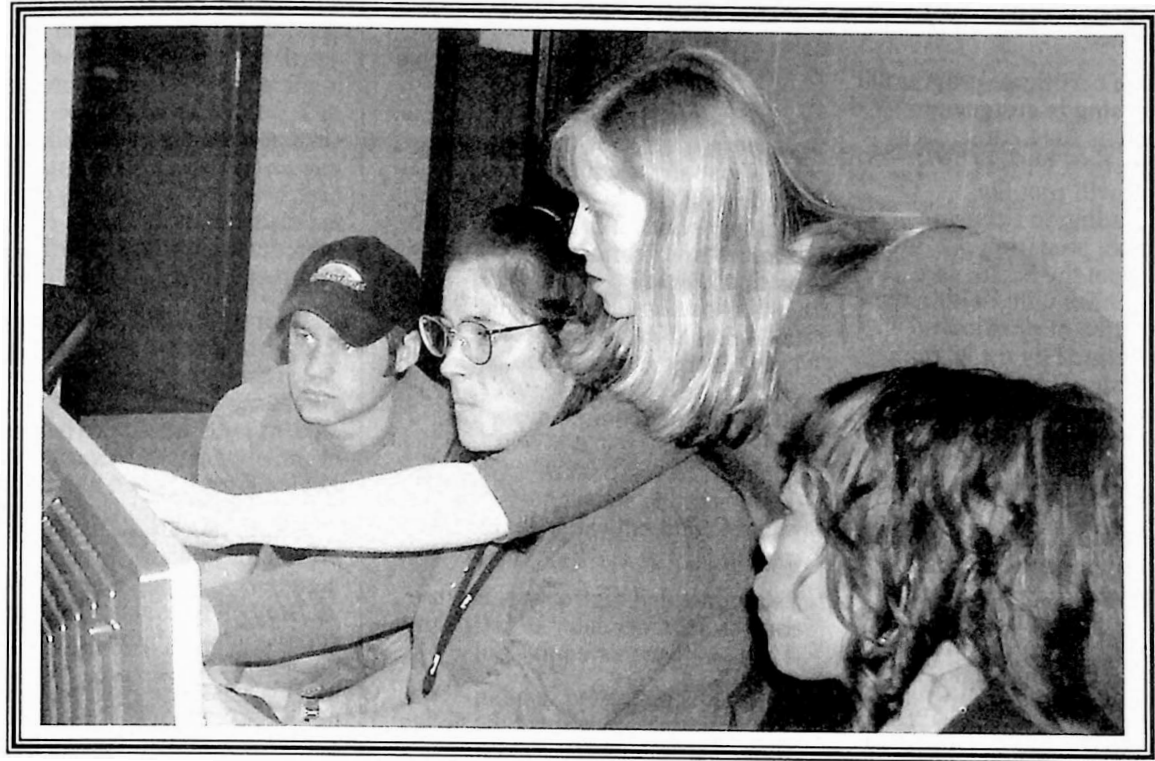
Practical Nursing
Certificate (157)

Also See: Nursing, Associate of Applied Science

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.i

Approved: 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.i

Curriculum Admission Guidelines and Procedure For the Class of 2007 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.i The applicant must be:
　a)ia rising high school senior ori

　b) a graduate from an accreditedi high school or
　c)iholder of a GED (battery scorei average equal to or greateri than 450).i

2.i Have completed the followingi high school prerequisites with ai grade of "C" or better: one unit of biology, one unit of Algebra I, andi demonstrate proficiency in basic math and reading skills.i

3.i Have a cumulative scholastic ori collegiate GPA of 2.0 based on ati least 12 credit hours of collegei credit.

4.i Complete required evaluative tests administered at VWCC.i

5.i Attend a personal interviewi demonstrating satisfactory oral andi written communication skills, if required.

Recommended high school elective courses are Chemistry and Algebra II or Geometry, or equivalent.

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 alli colleges attended; and officiali transcripts showing completion of ai high school diploma, GED, ori official high school transcript if i currently a rising senior; a 2007i Practical Nursing Programi Application Form, and a Practicali Nursing Admissions Advising Formi to be completed by the Healthi Technology Advisor for Practicali Nursing. The Practical Nursing Admissions Advising Form will be completed upon receipt of the completed academic file by letter or office visit. It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts in one envelope to the Health Technology Information Office with the VWCC 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. Phone (540) 857-7314.

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 2007.

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.i Communicate satisfactorily with clients, physicians, peers, familyi members and the health care team.i
2.i See and hear adequately to note slight changes in the client's condition.i
3.i Hear adequately to perceive andi interpret various equipment signals.i
4.i See adequately to read monitors in order to correctly interpret data on monitor.
5.i Stand and/or walk six (6) toi eight (8) hours/day.
6.i Walk rapidly for a prolonged period from one area to another.
7.i Bend or squat frequently.
8.i Assist in lifting or moving clientsi of all age groups and weights.
9.i Demonstrate adequate eye/hand coordination for dexterity in manipulation of equipment.
10. Use hands for grasping, pushing, pulling and fine manipulation.i
11.i Work with arms fully extendedi overhead for short periods.i
12.i Manage care of a client in ani elevated hospital bed or stretcher, including one-man CPR when necessary.
13.iDifferentiate the color spectrumi for color coding of charts andi monitoring equipment.i
14.i Possess the visual acuity toi correctly read handwritten orders,i medication records, chart contents, and provide safety for clients andi visitors. Despite the foregoing, ai qualified person with a disabilityi who can perform these essentiali 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.
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. 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.

CURRICULUM AND OTHER REQUIREMENTS   Credits

ENG 111	College Composition	3
ITE 102	Computers & Information Systems	1
PNE 116	Normal Nutrition	1
PNE 120	Introduction to Nursing Process	1
PNE 135	Maternal & 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 108[2]	College Survival Skills (or SDV 100)	1
SPD 100	Public Speaking (or SPD 105)	3

Total Minimum Credits for the Certificate   49

[1] *Includes Gerontological Nursing.*
[2] *Students who have not previously completed SDV 108 must enroll in SDV 108 during the first semester of the Practical Nursing Program.*

Required Course Sequence*

Fall – First Year
ENG 111
PNE 116
PNE 120
PNE 141
PNE 145
PNE 155
SDV108

Spring – First Year
PNE 142
PNE 156
PNE 174
PNE 195

Fall – Second Year
ITE 102
PNE 158
PNE 181
SPD 100

Spring – Second Year
PNE 135
PNE 182

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

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, 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 RT's 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:
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.
8. 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 2007 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 in one envelope to the VWCC Health Technology Information Office with the VWCC 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 VWCC, P.O. Box 14007, Roanoke, VA 24038. Applicants must also take the math COMPASS evaluation at VWCC. Additional information regarding the math COMPASS evaluation procedures will be mailed to applicants upon receipt of the completed academic file. The Radiation Oncology Admissions Advising Form will be completed upon receipt of the completed academic file by letter or office visit. 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. 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:
1. All students admitted to the Radiation Oncology program must attend orientation, register for all classes, and pay tuition prior to August 1. Final admission is contingent upon a satisfactory medical examination. Results must be returned to the Radiation Oncology Program Director 30 days before fall classes begin. This medical examination must include evidence of rubella (German measles) screening and/or vaccine, tuberculin skin test (or chest x-ray), and Hepatitis B vaccination.
2. The student is responsible for transportation to and from agencies utilized for clinical experience and the purchase of student uniforms and accessories. Malpractice insurance coverage is required. Insurance is available for purchase after admission to the program. This policy is non-refundable.
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. Verification of current CPR certification will be required prior to the beginning of classes and must be kept current through enrollment in the program.

Retention Policies: Successful completion of the program requires students to maintain a C or better in all Radiation Oncology courses and MTH 163. A complete statement of the above policies is outlined in the Radiation Oncology Student Handbook, which is available in the Health Technology Division Office.

CURRICULUM AND OTHER REQUIREMENTS — Credits

ENG 111	English Composition	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	3
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 108	College Survival Skills	1

Total Minimum Credits for Degree — 49

[1] *Health and Wellness are an integral part of the Radiation Oncology Curriculum.*

Required Course Sequence*

Fall – First Year
ENG 111
MTH 163
ROC 110
ROC 120
ROC 131
ROC 142
SDV 108

Spring – First Year
ITE 102
ROC 121
ROC 132
ROC 141
ROC 145
ROC 151

Summer
ROC 231

Fall – Second Year
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 (A & P I), BIO 142 (A & P II) within five years prior to beginning the program is strongly recommended.

Radiography
Associate in 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, 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 along with other qualified applicants.

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 2007 Radiography Application, students seeking admission to the Radiography program must have official transcripts from all schools and colleges attended forwarded to the College including transcripts showing completion of a high school diploma or GED. It is **required** that applicants submit official high school transcripts, GED scores, and **all** official college transcripts in one envelope to the VWCC Health Technology Information Office with the VWCC application. The Radiography Admissions Advising Form will be completed upon receipt of the completed academic file by letter or office visit. Applicants are encouraged to see the Health Technology Information Specialist for information, evaluation, and advising regarding the program.

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. Early application is encouraged. 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.

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. 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.

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. 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 bachelors 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
ITE 102	Computers and Information Systems	1
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 131-132	Elementary Clinical Procedures I-II	6
RAD 190	Coordinated Practice	3
RAD 205	Radiation Protection & Radiobiology	3
RAD 215	Correlated Radiographic Theory	2
RAD 221[1]	Radiographic Procedures II	4
RAD 225	Specialized Patient Care Procedures	2
RAD 231-232	Advanced Clinical Procedures I-II	10
RAD 240	Radiographic Pathology	3
RAD 290	Coordinated Internship	4
SDV 108	College Survival Skills (or SDV 100)	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 39.
[3] Includes instruction in fundamental mathematics skills.
[4] ENG 111-112 (College Composition I-II) with SPD 100 is recommended for studer planning to transfer to a baccalaureate degree program.

Required Course Sequence

Fall – First Year
HLT 143
NAS 171
RAD 121
RAD 131
SDV 108

Spring – First Year
RAD 106
RAD 132
RAD 221
RAD 225
Social Science Elective

Summer – First Year
RAD 190
RAD 205

Fall – Second Year
ENG 111
RAD 111
RAD 231
RAD 240

Spring – Second Year
ITE 102
SPD 100
RAD 112
RAD 232
Humanities/Fine Arts Elective

Summer – Second Year
RAD 215
RAD 290

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

Science

Associate in Science (880)

Purpose: The AS degree in Science contains five curricular options: Science, Science with a Specialization in Computer Science, Specialization in Health Science, Specialization in Mathematics, and the Integrated Environmental Studies Specialization. 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 in the college/university where transfer is contemplated and consult with their faculty advisor in planning their program and selecting electives.

Curriculum Admission Guidelines: 4 units of English; 3 units of college preparatory mathematics (Algebra I, Geometry and Algebra II) for science degree (4 units for Computer Science specialization); 1 unit of laboratory science; and 1 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	U. S. History (or HIS 101)	3
HLT/PED[1]	Health or Physical Education	2
ITE 115	Intro 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 108	College Survival Skills (or SDV 100)	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 39, "Approved List of Transfer Courses."*
[3] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39.*
[4] *Electives must be chosen from the "Approved List of Transfer Courses" on page 39.*
[5] *Students who complete MTH 175-176 and 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 39. If the student is transferring to a four-year institution, the student should select the social science courses at VWCC that will satisfy the social science requirements at the four-year institution.*
[7] *Students taking MTH 175-176 should consider taking MTH 177-178 as electives.*

Suggested Course Sequence

Fall
ENG 111
HLT/PED
ITE 115 or CSC 201
MTH 163 or MTH 175
SDV 108 or SDV 100
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

Sciences 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 216 Animal Life of Virginia*
CHM 111-112 College Chemistry I & II	*BIO 270 General Ecology*
CHM 241 & 245 Organic Chemistry I (lecture and lab)	*BIO 271 Introduction to Ecological Systems*
CHM 242 & 246 Organic Chemistry II (lecture and lab)	*BIO 285 Biological Problems in Contemporary*
GOL 105 Physical Geology	*Society*
GOL 106 Historical Geology	*ENV 161 Introduction to Environmental Compliance*
NAS 131-132 Astronomy I & II	*ENV 162 Environmental Principles in Public Health*
NAS 185 Microbiology	*ENV 221 Natural Resource Management*
PHY 201-202 General College Physics I & II	*GOL 225 Environmental Geology*
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 the required 16 credits of Science Elective with Lab. It is strongly recommended that PHY 201-202 General College Physics be taken to fulfill the Science Elective and Transfer Elective requirements. Many pre-professional programs also require Organic Chemistry; 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 sciences 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, or NAS 131-132 to fulfill the required 16 credits of Science Elective with Lab. Consultation with the transfer institution and a faculty advisor to select the sequence and Science electives based on the major is **strongly advised.**

Students preparing for a major in **environmental science, ecology, or forestry** should pursue the Integrated Environmental Studies Specialization **or** follow the Science curriculum and select BIO 101-102 and CHM 111-112 to fulfill the required 16 credits of Science Elective with Lab; and BIO 215, 270, and 285 for the Science and transfer electives. Consultation with the transfer institution and a faculty advisor to select the sequence and Science electives based on the major is **strongly advised**.

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

Students preparing for a major in **computer science** should pursue the Specialization in Computer Science.

Students preparing for a major in a health field such as **Nursing or other allied health field** and who desire a BS degree, should pursue the Specialization Health Sciences.

Purpose: The computer science specialization 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: 4 units of English; 3 units of college preparatory mathematics (Algebra I, Geometry and Algebra II) for science degree (4 units for Computer Science specialization); 1 unit of laboratory science; and 1 unit of social science. Developmental courses may be recommended for students with deficiencies in English and mathematics.

SPECIALIZATION IN COMPUTER SCIENCE (01)

CURRICULUM AND OTHER REQUIREMENTS   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 108	College Survival Skills (or SDV 100)	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 39. 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] *Electives must be chosen from the "Approved List of Transfer Courses" on page 39.*
[4] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39.*

Suggested Course Sequence

Fall
CSC 201
ENG 111
HLT/PED
MTH 175
MTH 177
SDV 108 or SDV 100
Social Science Elective

Spring
CSC 202
ENG 112
MTH 176
MTH 178
Social Science Elective

Fall
HIS 101 or HIS 121
MTH 241
MTH 277
PHY 241 or CHM 111

Spring
PHY 242 or CHM 112
SPD 100
Elective
Humanities/Fine Arts Elective

Purpose: The Health Sciences Specialization 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 on attending 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 VWCC graduates will be accepted into Radford University's upper division Nursing degree program. If the cumulative grade point average at VWCC 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 another college besides Radford University should check that college's degree requirements to determine if substitutions in VWCC's course requirements need to 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, Geometry, and Algebra II). Developmental courses may be recommended for students with deficiencies in English and mathematics.

SPECIALIZATION IN HEALTH SCIENCES (02)

CURRICULUM AND OTHER REQUIREMENTS

		Credits
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	American Literature (or ENG 243)	3
HIS 121	U.S. History (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 (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 108	College Survival Skills (or SDV 100)	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
CHM 111
ENG 111
HIS 121 or HIS 101
MTH 151
PSY 200
SDV 108 or SDV 100

Spring
CHM 112
ENG 112
HLT 230
ITE 115
MTH 152 or MTH 157

Fall
BIO 141
ENG 241 or ENG 243
PLS 211 or ECO 201
SOC 200

Spring
BIO 142
NAS 185
PSY 230 or PSY 231
SPD 100

Purpose: The curriculum 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 in the college/university where transfer is contemplated, and consult with their faculty advisor.

Curriculum Admission Guidelines: 4 units of English; 3 units of college preparatory mathematics (Algebra I, Algebra II, and Geometry); 1 unit of laboratory science; and 1 unit of social science. Developmental courses may be recommended for students with deficiencies in English and Mathematics.

Career Opportunities: Graduates may chose 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 chose to pursue employment at the technical level may be employed as natural resource technicians, agricultural technicians, land resources technicians, or water management technicians.

SPECIALIZATION IN INTEGRATED ENVIRONMENTAL STUDIES (05)

CURRICULUM AND OTHER REQUIREMENTS   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 108	College Survival Skills (or SDV 100)	1
SPD 100	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 201-202 may 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 VWCC 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 108	

Fall	Spring
BIO 271	BIO 285
CHM 111	ENV 221
HUM 202	HLT/PED
MTH 157	MTH 163
SPD 100	

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 of 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: 4 units of English; 4 units of college preparatory mathematics (Algebra I, Geometry, Algebra II; and Precalculus with Trigonometry); 1 unit of laboratory science; and 1 unit of social science.

SPECIALIZATION IN MATHEMATICS (04)

CURRICULUM AND OTHER REQUIREMENTS   Credits

CHM 111-112	College Chemistry I-II	8
CSC 201	Computer Science I	4
ENG 111-112	College Composition I-II	6
HIS 121	U.S. History (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 108	College Survival Skills	1
SPD 100	Public Speaking	3
E[2]	Social Science Electives	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 VWCC that will satisfy the social science requirements at the four-year institution.*
[3] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39.*

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 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

Social Sciences
Associate in 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 special Education Track is provided in the program 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: 4 units of English, 3 units of college preparatory mathematics (Algebra I, Geometry and Algebra II), 1 unit of laboratory science, and 1 unit of social science. Developmental courses may be recommended for students with deficiencies in English and mathematics.

CURRICULUM AND OTHER REQUIREMENTS   Credits

ENG 111-112	College Composition I-II	6
ENG 241-242	Survey of American Literature (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	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 108	College Survival Skills (or SDV 100)	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	6
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.*
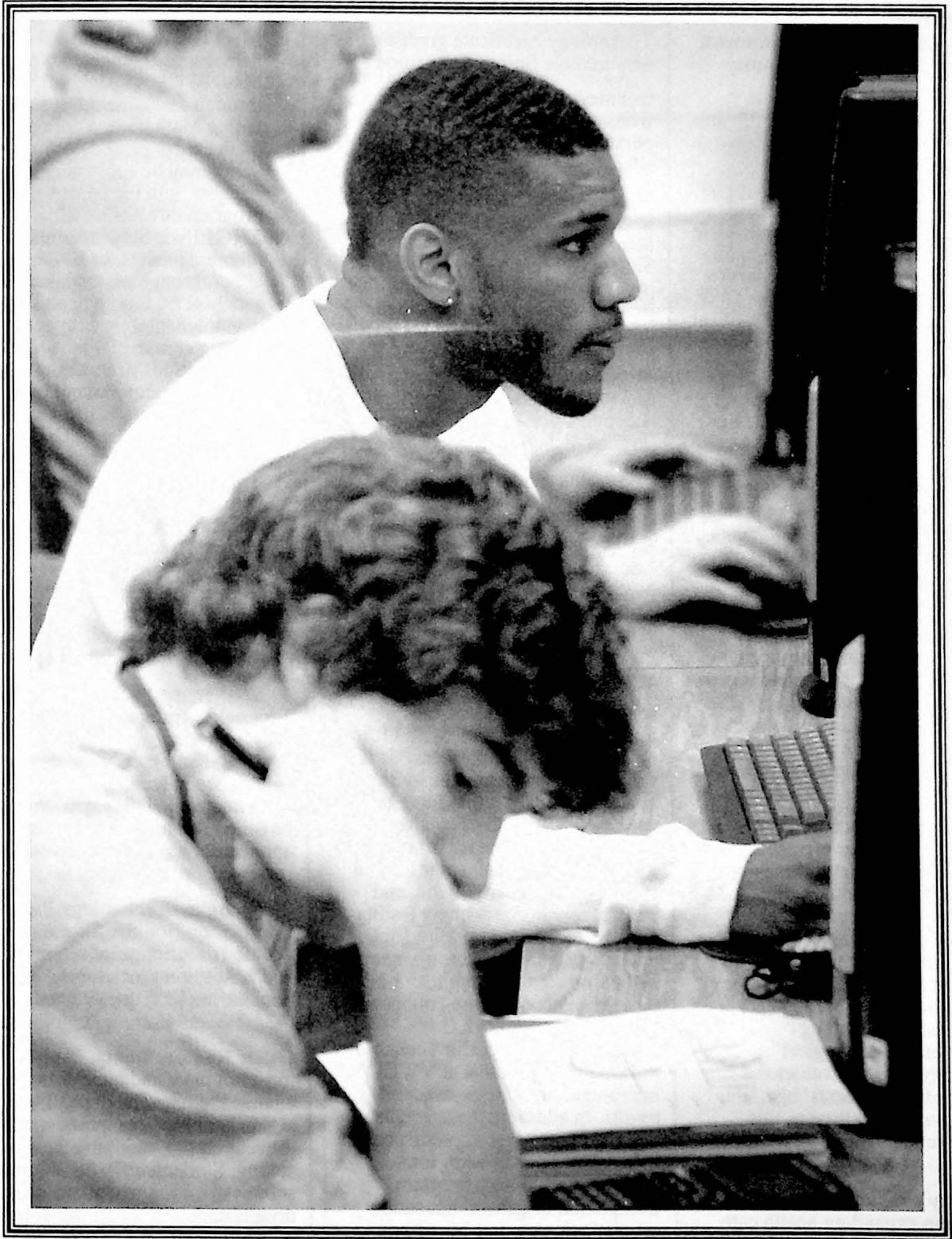[2] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39. A two-semester sequence of the same course is recommended for transfer to most four-year institutions.*
[3] *A two-semester sequence selected from BIO 101-102, CHM 111-112, GOL 105-106 or PHY 201-202 must be completed.*
[4] *Social science electives must be selected from the "Approved List of Transfer Courses" on page 39. 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.*
[5] *Electives must be selected from the "Approved List of Transfer Courses" on page 39.*

Suggested Course Sequence

Fall
ENG 111
HIS 121
MTH 151 or MTH 163
SDV 108 or SDV 100
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
ENG 241 or ENG 243
ITE 115
PSY 200
Social Science Elective
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 857-7288 or Dr. Annemarie Carroll at 857-6178.

Purpose: While this is a Social Sciences degree, the Education Track 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 at 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.

EDUCATION TRACK (01)

CURRICULUM AND OTHER REQUIREMENTS   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	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[5]	Health or Physical Education	2
ITE 115	Intro Computer Applications and Concepts	3
MTH 151	Math. 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 202)	3
PSY 200	Principles of Psychology	3
SDV 108	College Survival Skills (or SDV 100)	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 language instead of HIS 101 and HIS 102.*
[4] *Students transferring to Roanoke College should take PSY 236 instead of MUS 121.*
[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. Students transferring to Roanoke College should take two different PED courses instead of HLT 110.*

Suggested Course Sequence

Fall
BIO 101
ENG 111
HIS 121
MTH 151 or MTH 163
PSY 200
SDV 108 or SDV 100

Spring
BIO 102
EDU 100
ENG 112
HIS 122
MTH 157 or MTH 152 or
   MTH 271
PHI 101

Fall
ENG 241
HIS 101
ITE 115
GEO 210
MUS 121

Spring
ART 101
HLT/PED
PLS 211 or ECO 202
SPD 100
HIS 102

Students preparing for future careers in mental health, psychology, or social work should contact immediately Richard Gaynor at 857-7288 or Dr. Annemarie Carroll at 857-6178.

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.

Curriculum Admission Guidelines: 4 units of English, 3 units of college preparatory mathematics (Algebra I, Geometry and Algebra II), 1 unit of laboratory science, and 1 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.

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.

FIRE SCIENCE SPECIALIZATION (02)

CURRICULUM AND OTHER REQUIREMENTS

		Credits
ENG 111-112	College Composition I-II	6
ENG 241-242	Survey of American Literature (or ENG 243-244)	6
FST 110	Fire Behavior and Combustion	3
FST 140[1]	Fire Officer I	4
FST 220	Building Construction for Fire Protection	3
HIS 121-122	United States History I-II (or HIS 101-102)	6
HLT/PED[2]	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 108	College Survival Skills (or SDV 100)	1
SPD 100[3]	Principles of Public Speaking	3
E[4]	Humanities/Fine Arts Elective	6
E[5]	Laboratory Science Sequence	8

Total Minimum Credits for Degree   **63**

[1] *There are no prerequisites for students taking the class for academic credit only. For students seeking NFPA 1021 certification as a Fire Officer I, the prerequisites are FIR 105 or Firefighter II certification and FIR 135 or Fire Instructor I certification.*
[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. EMT certification may be substituted for this requirement.*
[3] *FST 135 or Fire Instructor I Certification and FST 136 may be substituted for this requirement.*
[4] *Humanities/Fine Arts elective must be chosen from the "Approved List of Humanities Transfer Courses" on page 39. A two-semester sequence of the same course is recommended for transfer to most four-year institutions.*
[5] *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
ENG 111
FST 110
HIS 121
MTH 151 or MTH 163
SDV 108 or SDV 100
Natural Science Sequence

Spring
ENG 112
FST 220
HIS 122
MTH 157 or MTH 152 or
   MTH 271
Natural Science Sequence

Fall
ENG 241 or ENG 243
ITE 115
PSY 200
Humanities/Fine Arts Elective
SPD 100 or FST 135

Spring
ENG 242 or ENG 244
HLT/PED
SOC 200
Humanities/Fine Arts Elective
FST 140

Surgical Technology
Distance Learning Program
Certificate

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 VWCC. Surgical technology courses are offered through PVCC at VWCC 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 life span.

Surgical technology education is a balance of 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, information expanding health care system, students must develop skills and appreciation for life-long 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 VWCC 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 <u>all</u> other college transcripts sent to the PVCC Office of Admissions and Records. **It is the <u>student's</u> 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 <u>May 1</u> 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 VWCC 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. Completion of all necessary prerequisite courses:

a. **MATH**: Students must demonstrate competency through Math 03 (Basic Algebra) either through assessment test scores, taking Math 03 or a college level math course passed with a C or better may be substituted for Algebra with the approval of the program director.
b. **ENGLISH**: Students must satisfy all prerequisites for ENG 111 either through assessment test scores or by taking necessary developmental reading and writing courses.
c. **CHEMISTRY**: Students can satisfy this requirement by taking a developmental chemistry course (CHEM 01 or CHEM 05), 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 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 which would prevent employment in a healthcare setting. Students may be required to submit to a background check or drug test.

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 which may include withdrawal from the program for any student engaging in unprofessional or disruptive behavior in the classroom or clinical setting.

Students are responsible for transportation to and from the College and assigned clinical agencies used for laboratory and clinical instruction. Additional costs include, but may not be limited to: lab coat, books, standardized testing fees.

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	Anatomy & Physiology I & II	8
ENG 111	College Composition I	3
HLT 106	First Aid & 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 Degree 45

Suggested Course Sequence

Fall	Spring
BIO 141	BIO 142
HLT 106	SDV 100
HLT 143	SUR 210
SUR 140	SUR 250
SUR 145	

Fall
ENG 111
NAS 185
SUR 254
SUR 260

NOTE:
Surgical technology classes will be completed at VWCC through web-based conferencing technology from PVCC.

Technical Studies
Associate in 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 1	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 Prin. Elective	4
ITE 115	Intro Computer Applications and Concepts	3
MTH	Mathematics (120/151/166)	3-5
SDV 108	College Survival Skills (or SDV 100)	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 Degree   **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 108 or SDV 100
Content Skills Elective
Technical Elective

Spring
SPD 100
Content Skill Elective
Science/Technical Prin.
  Elective
Humanities/Fine Arts Elective
Technical Elective

Fall
ENG 115
HLT/PED
IND 190
IND 230
Content Skills Elective
Social Science Elective

Spring
HLT/PED
IND 290
Content Skills Elective
Content Skills Elective
Social Science Elective
Technical Elective
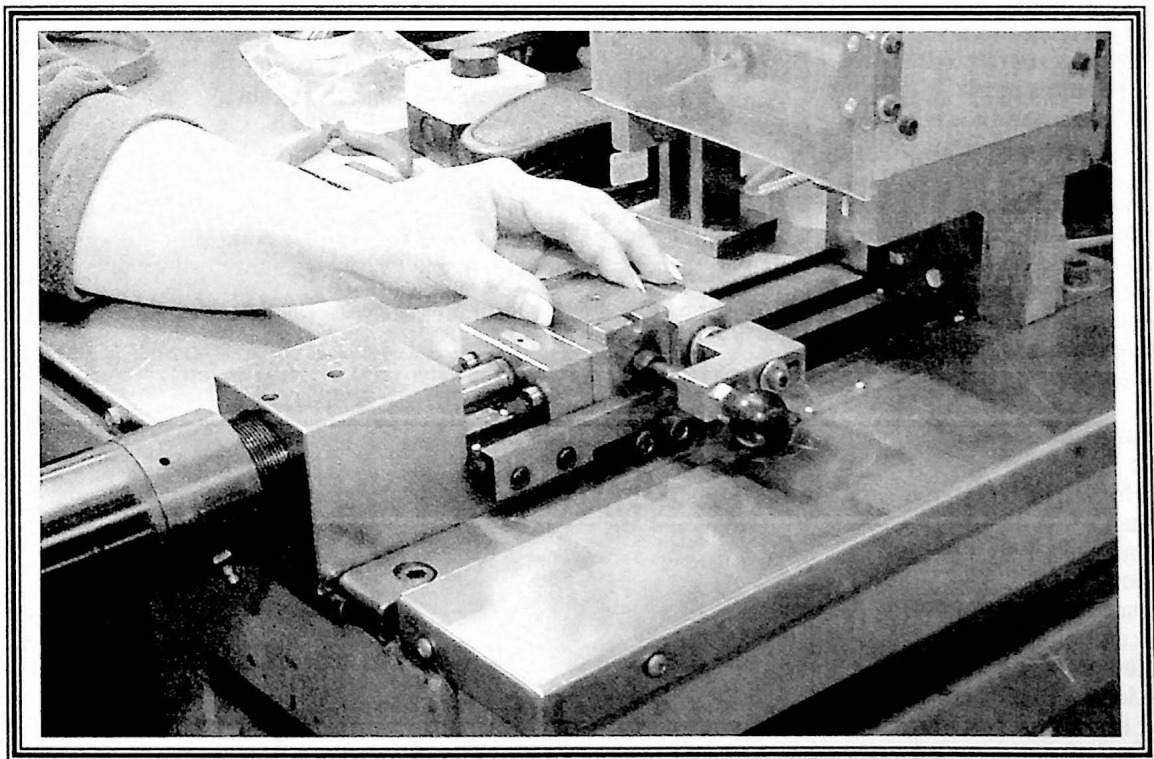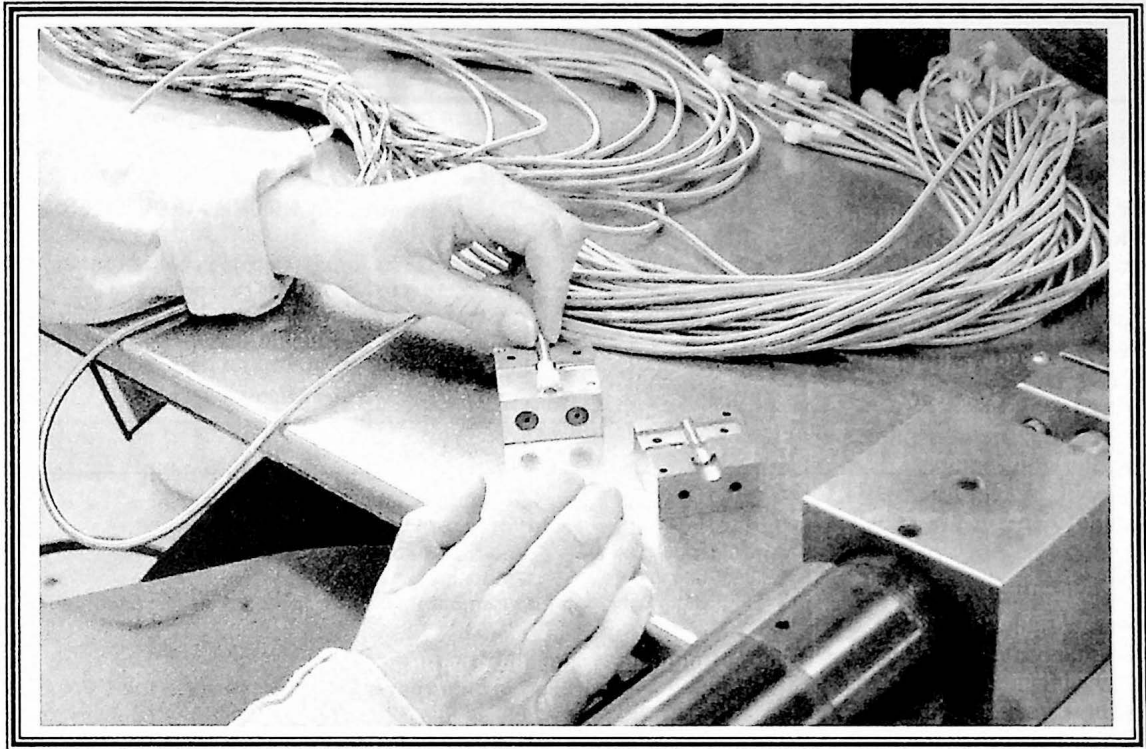
Veterinary Technology
Distance Learning Program
Associate in Applied Science

Offered through partnership with Blue Ridge Community College

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 VWCC 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 VWCC 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
	Humanities/Fine Arts Elective[1]	3
	Social Science Elective[1]	3
	Psychology Elective	3
ITE 115	Fundamentals of Computer Information Systems	3

Total Minimum Credits for Degree   73

[1] *Humanities/Fine Arts and Social Science electives must be selected from the "Approved List of Transfer Courses" on page 39.*

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.

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 108	College Survival Skills (or SDV 100)	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 108 or SDV 100	WEL 121
WEL 120	

Fall	Spring
ELE 133	WEL 135
WEL 130	WEL 145

Description of Courses

Continuing Education and Community Services Programs

In order to provide the widest possible diversification of educational opportunity, Virginia Western Community College schedules credit and noncredit courses and programs to meet educational and training needs outside the realm of traditional college studies. These include classes, institutes, forums, workshops, lectures, and courses to provide: (1) individual cultural enrichment; (2) individual job skill improvement; (3) hobby and leisure-time activity training; (4) service to business and industry in upgrading employee skills; and (5) special services focused on societal and community development.

State general-fund tax dollars are not used to support noncredit community service programs.

General Course Information

COURSE NUMBERS

Courses numbered 01-09 are developmental studies courses. These courses are designed to prepare students for college-level courses (primarily in the areas of English and mathematics). The credits earned in these courses are not applicable toward associate degree programs. These courses are graded on a Satisfactory/Unsatisfactory basis and they do not affect students' grade point average. Students enrolled in developmental courses who do not achieve a Satisfactory (S) grade should re-enroll in order to complete all course objectives. Students ordinarily may repeat a course only once (refer to the policy on Repeating a Course).

Courses numbered 10-99 are basic occupational courses for certificate programs. The credits earned in these courses are applicable toward diploma and certificate programs but are not applicable toward an associate degree.

Courses numbered 100-199 are freshman courses applicable toward an associate degree or certificate, and courses numbered 200-299 are sophomore courses applicable toward an associate degree or certificate.

COURSE CREDITS

The credit for each course is indicated after the title in the course description. One credit is equivalent to one collegiate semester hour.

COURSE HOURS

The number of lecture hours in class each week (including lecture, seminar, and discussion hours) and/or the number of laboratory hours in class each week (including laboratory, shop, supervised study, and cooperative work experiences) are indicated for each course in the course description. The number of lecture and laboratory hours in class each week are also "contact" hours because it is time spent under the direct supervision of a faculty member.

COURSE PREREQUISITES

If any prerequisites are required before enrolling in a course, these prerequisites will be identified in the course description. Courses in special sequences (usually listed as I-II-III) require that prior courses or their equivalent be completed before enrolling in the advanced courses in that sequence. When corequisites are required for a course, usually the corequisites must be taken at the same time. The prerequisites or their equivalent must be completed satisfactorily before enrolling in a course unless special permission is obtained from the 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 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.) 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 (1 CR.) 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.) Prerequisite: ACC 212 or equivalent. Introduces the computer in solving accounting problems. Focuses on operation of computers. Presents the accounting cycle and financial statement preparation in a computerized system and other applications for financial and managerial accounting. Lecture 3 hours per week.

ACC 221 INTERMEDIATE ACCOUNTING I
(4 CR.) Prerequisite: ACC 212 or equivalent. 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 222 INTERMEDIATE ACCOUNTING II
(4 CR.) Prerequisite: ACC 221 or equivalent. Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. 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 INVESTI-GATION (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. 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. 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 123-124 AIR CONDITIONING AND REFRIGERATION III-IV (3 CR.) (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 SYSEMS 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 & 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, prerequisites are ART 121 and ART 132 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, prerequisites are ART 121 and ART 132 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 281-282 GRAPHIC TECHNIQUES I-II (3 CR.)
(3 CR.) Prerequisites: For ART 281: ART 180, ART 132, and ART 141; for ART 282: ART 281. Focuses on using drawing instruments and materials. Introduces printing processes and mechanics of reproduction. Focuses on production and pre-press 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 LANDGUAGE 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 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 (MS 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 COMMUNICATIONS (3 CR.) Prerequisite: AST 114 or equivalent. 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 APPLICATIONS (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 (MS OFFICE FRONTPAGE, MS 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.

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 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.

BIO 298 TOPICS IN BIOTECHNOLOGY I –II (2 CR.) (2 CR.)
Topics in Biotechnology I - Extends a basic laboratory skill beyond what is required for a typical science laboratory. Students will be responsible for ordering supplies, preparing all necessary reagents and solutions, keeping a laboratory notebook, and writing up their data in a report format. Techniques and topics covered will include spectroscopy, molecular identification and quantitation, enzymes, chromatography, Western blotting and protein gel electrophoresis. Applications to multiple scientific areas will be discussed. Lecture 1 hour per week. Laboratory 3 hours per week.
Topics in Biotechnology II - This is a continuation of Topics in Biotechnology I. Techniques and topics to be covered include restriction enzymes, gel electrophoresis of DNA, polymerase chain reaction (PCR), microbial media preparation, dilution and counting techniques in microbiology, synthesis of organic compounds and solubility analysis, ecology, and GIS applications to the health field. Laboratory 4 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 us 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.) Prerequisites: CHD 121, CHD 122, CHD 165 or departmental approval. 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.) Prerequisites: CHD 121, CHD 122 or departmental approval. 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 05 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 05 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 THE 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 hours per week.

DRF 161 BLUEPRINT READING I (2 CR.) Teaches the application of basic principles, visualization, orthographic projection, detail of drafting shop process and terminology, assembly drawings and exploded views. Considers dimensioning, changes, and corrections, classes of fits, tolerances and allowances, sections and convention in blueprint reading. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**DRF 201 COMPUTER AIDED DRAFTING AND
DESIGN I (3 CR.)** Prerequisite: Basic computer

knowledge including file management, mouse usage, and keyboarding skills. 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 1 hour 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.)
Prerequisite: MTH 271 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 literacy. MTH 115 or equivalent. 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 MTH 115 and 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
(2 CR.) Prerequisite: ELE 147 and ETR 281 or department approval. Deals with installation, programming, interfacing, and concepts of troubleshooting programmable controllers. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EMT – EMERGENCY MEDICAL TECHNICIAN

EMT 111 EMERGENCY MEDICAL TECHNOLOGY I (3 CR.)
Provides instruction in basic life support, physical assessment. Introduces role and responsibilities of the emergency medical technician/ambulance. Includes emergency operations, anatomy and physiology, bleeding, shock, MASTrousers, cardio-pulmonary resuscitation, soft tissue injuries, fractures and dislocations, abdominal and chest injuries. Required for certification as a Virginia EMT/B. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMT 112 EMERGENCY MEDICAL TECHNOLOGY II (3 CR.)
Continues material begun in EMT 112. Includes major trauma and medical emergencies, emergency childbirth procedures, lifting and moving patients, vehicle extrication, pediatric and environmental emergencies, and mass casualty situations. Required for certification as a Virginia EMT/B. Prerequisite EMT 111. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMT 133 INTRODUCTION TO TECHNICAL RESCUE - ROPE RESCUE (1 CR.)
Prepares the student to understand the intricacy of vertical rescue as used in an emergency situation. Includes ropes and knots, rigging, and rappelling. Prerequisite: EMT. Lecture 1 hour per week.

EMT 215 PRINCIPLES OF EXTRICATION
(4 CR.) Focuses on the practical evolutions utilized for vehicle extrication, basic and light duty rescue. Includes techniques of vehicle, water, vertical, and trench rescue, as well as electrical emergencies, bus, aircraft, and subway crashes, radiation hazards, and elevator accidents. Prerequisite EMT/B certification. Lecture 2 hours. Laboratory 4 hours. Total 6 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 (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 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 contend may be planned jointly by faculty in English and related discipline. Variable hours per week.

ENG 07 WRITING AND READING IMPROVEMENT I (6-8 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 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 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 INTRODUTION 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 D.C. AND A.C. FUNDAMENTALS I-II (4 CR.) (4 CR.) Prerequisite for ETR 113: Algebra I. Prerequisite for ETR 114: ETR 113. Co-requisite: MTH 116. Studies D.C. and A.C. 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 wk.

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 MICRO-COMPUTER 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.

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 105 FIRE SUPPRESSION OPERATIONS
(3 CR.) Introduces the fundamentals of fire suppression. Explores fire behavior and basic physical and chemical laws of fire dynamics. The student will understand the need for quick operational decisions made on the fireground, including emergency incident management. Lecture 3 hours per week.

FST 111 HAZARDOUS MATERIALS RESPONSE
(3 CR.) Studies hazardous materials storage, standards, and applicable laws designed to protect the public and emergency personnel. Discusses specific methods and techniques used by the emergency worker in the abatement of hazardous materials incidents. Lecture 3 hours per week.

FST 135 METHODS OF INSTRUCTION (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, IST 117 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 GEOGRAPHICAL 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.

GOL 225 ENVIRONMENTAL GEOLOGY (4 CR.)
Prerequisite: GOL 105. Explores the interaction between man and his physical environment. Stresses geological hazards and environmental pollution utilizing case histories. Lecture 3 hours. Laboratory 3 hours. Total 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 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. 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 3 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 (3 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 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.)
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. Total 4 hours per week.

HIT 254 ADVANCED CODING AND REIMBURSEMENT (4 CR.)
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. Total 4 hours per week.

HIT 290 COORDINATED INTERNSHIP (1-5 CR.)
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 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 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 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.

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 I (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 INDOOR 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 hours. 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 A 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.) 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 Auto Cad 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.)
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). Prerequisite: Recommended ITD 110. Lecture 3-4 hours. Laboratory 0-2 hours. Total 3-5 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 (4 CR.)
Provides an introduction to relational database theory and how to administer and query databases using multiple commercial database systems. Lecture 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 220 E-COMMERCE ADMINISTRATION (3 CR.)
Prerequisite: ITD 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 250 DATABASE ARCHITECTURE AND ADMINISTRATION (3 CR.)
Co-requisite: ITD 136 or instructor approval. Provides in-depth knowledge about the underlying architecture of databases and the handling of database administration. Maps to Microsoft test 70-228. 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 101 INTRODUCTION TO MICROCOMPUTERS (1 CR.)
Examines concepts and terminology related to microcomputers. Introduces the specific use of microcomputers. Includes the study of computer information systems, hardware, software, functions, capabilities and limitations of computer systems. Exposes students to techniques used in programming and system development. Lecture 1 hour per week.

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 INTRO 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. Lecture 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 WINDOW 2003 SERVER (SER) (3 CR.) 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 118 WINDOWS 2003 ACTIVE DIRECTORY INFRASTRUCTURE PLANNING, IMPLEMENTATION, AND MAINTENANCE (ADI-PIM) (3 CR.) Prerequisite: ITN 115. This course teaches the student how to plan, implement, and maintain a Microsoft Windows Server 2003 Active Directory infrastructure. Maps to Microsoft Test 70-294. Lecture 3 hours per week.

ITN 170 LINUX SYSTEM ADMINISTRATION (3 CR.) 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.) 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 240 WINDOWS 2003 ACTIVE DIRECTORY AND NETWORK INFRASTRUCTURE DESIGN (AD-NID) (3 CR.) Prerequisite: ITN 118. This course teaches the student how to design a Microsoft Windows Server 2003 Active Directory and network infrastructure. Maps to Microsoft Test 70-297. Lecture 3 hours per week.

ITN 241 WINDOWS 2003 SECURITY DESIGN (SD) (3 CR.) Prerequisite: ITN 118. This course teaches the student how to gather and analyze business requirements for a secure network infrastructure and design a security solution that meets those requirements. Maps to Microsoft Test 70-298. Lecture 3 hours per week.

ITN 243 WINDOWS 2003 SECURITY IMPLEMENTATION AND ADMINISTRATION (S-IA) (3 CR.) Prerequisite: ITN 118. This course teaches the student how to implement, manage, maintain, and troubleshoot security in a Windows Server 2003 network infrastructure and also plan and configure a Windows Server 2003 PKI. Maps to Microsoft Test 70-299. Lecture 3 hours per week.

ITN 261 NETWORK ATTACKS, COMPUTER CRIME AND HACKING (3 CR.) 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.) 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.) 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. Prerequisite: Recommended pre- or co-requisite is high school algebra. Lecture 3 hours per week.

ITP 112 VISUAL BASIC .NET I (4 CR.)

Prerequisite: (or Co-requisite) ITE 101 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. Maps to Microsoft test 70-306. Lecture 4 hours per week.

ITP 120 JAVA PROGRAMMING I (4 CR.)

Prerequisite: (or Co-requisite) ITE 101 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 120. 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 152 RPG PROGRAMMING I (4 CR.)

Prerequisite: ITP 155 or instructor's permission. Provides instruction in fundamentals of structured programming using RPG. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of console applications. Lecture 4 hours per week.

ITP 155 OPERATIONS OF MID-RANGE COMPUTERS (4 CR.)

Provides an introduction to the architecture and operation of a mid-range computer system. Course content includes workstation access, displays, system support, work management, initialization, and database access and configuration. Course content also includes copy file functions, save/restore, journalizing and security. Lecture 4 hours per week.

ITP 159 CONTROL LANGUAGE I (3 CR.)

Prerequisite: ITP 155 (can be a Co-requisite). Provides an introduction to Control Language (CL). Course content includes the discussion of the advantages of CL, structure of CL programs, working with CL variables, program flow commands, basic error handling, passing parameters, and commands to work with files and data areas. Lecture 3 hours per week.

ITP 170 PROJECT MANAGEMENT (3 CR.)

Prerequisite: Working knowledge of Project Management or the instructor's permission. This course is designed to introduce students to the concepts of project management as defined within pmi.org, the accreditation body for project management. Lecture 3 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 215 XML WEB SERVICES (3 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. Maps to Microsoft test 70-310. Lecture 3 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 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. Maps to Microsoft test 70-305. Lecture 4 hours per week.

ITP 246 SERVER-SIDE JAVA (4 CR.)

Prerequisite: ITD 110, ITP 220. 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 non-bankruptcy alternatives and the laws of bankruptcy including Chapters 7, 11, 12 and 13 of the Bankruptcy Code. Emphasis will be placed on preparing petitions, schedules, statements and other forms. Lecture 3 hours per week.

LGL 290 COORDINATED INTERNSHIP IN LEGAL ASSISTING (3 CR.) 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. 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 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 SKILL 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 international and domestic marketing strategies. Lecture 3 hours per week.

MKT 276 INTERNATIONAL MARKETING MANAGEMENT (3 CR.)

Presents the process of marketing and management and applies it to the marketing of products within the global marketplace. Introduces the student to activities involving the gathering and analyzing of information in the

development and implementation of an international marketing plan. Lecture 3 hours per week.

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 02 ARITHMETIC (3 CR.) Covers arithmetic principles and computations including whole numbers, fractions, decimals, percents, measurement, graph interpretation, geometric forms, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable towards graduation. Lecture 3 hours per week.

MTH 03 ALGEBRA I (4 CR.) Prerequisites: Arithmetic or equivalent and a placement recommendation for MTH 03. 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 04 ALGEBRA II (4 CR.) Prerequisites: Algebra I or equivalent and a placement recommendation for MTH 04. 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 06 DEVELOPMENTAL GEOMETRY (3 CR.) Prerequisites: Algebra I or equivalent and placement recommendation for MTH 06. Covers topics in Euclidean geometry including similarity and congruency, plane and solid figures, right triangles, parallel and perpendicular lines, constructions, proofs, and applications. Develops the mathematical proficiency necessary for selected 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.) 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. Prerequisites: a placement recommendation for MTH 141 and one unit of high school mathematics or equivalent. 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 eigenvalues. 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 EQUATIONS (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 mixdown 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 & 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 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 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 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 1 hour per week.

PNE 155 BODY STRUCTURE AND FUNCTION (4 CR.) Studies the structure and function of the body. Lecture 4 hours per week.

PNE 156 NURSING ACROSS THE LIFE SPAN (4 CR.) Focuses on the principles of nursing relevant to assisting the individual during the growth and development process across the life span. Lecture 4 hours per week.

PNE 158 MENTAL HEALTH AND PSYCHIATRIC NURSING (2 CR.) Recognizes emotional needs of patients. Provides knowledge of the role that emotions play. Enables students to understand their own behavior as well as patient behavior. Lecture 2 hours per week.

PNE 174 APPLIED PHARMACOLOGY FOR PRACTICAL NURSES (2 CR.) Applies problem solving skills in preparing and administering medications. 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 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 225 SPECIALIZED PATIENT CARE PROCEDURES (2 CR.) Focuses on specific nursing procedures associated with routine and emergency conditions encountered in the performance of radiographic examinations. Teaches medication preparation and administration principles. Lecture 2 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 245 REAL ESTATE LAW (3 CR.) Prerequisite: REA 215. 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 (3 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 15 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 brachy-therapy 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.

SDV – STUDENT DEVELOPMENT

SDV 100 ORIENTATION (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, to services offered at the College and to the discipline in which they are enrolled. 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 (1-3 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 2 hours 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.

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.

SPD 241 INTRODUCTION TO DIRECTING I
(3 CR.) Prerequisite: SPD 131-132. Introduces theory and practice of stage direction through the study of directing methods as well as the execution and discussion of directing exercises. Lecture 2 hours. Laboratory 2 hours. Total 4 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.

TEL 295 CISCO INTERNETWORKING V (4 CR.)
Prerequisite: TEL 251, CCNA certification, or departmental approval. Covers objectives for the Cisco Routing 2.0 exam (640-503), applicable toward CCNP/CCDP 2.0 certifications. Topics include implementation of advanced routing protocols like OSPF, EIGRP, and BGP in large, scalable Internet works. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

WEL – WELDING

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 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.

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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

Strom, Jeffrey D.
Associate Professor, Business Management
B.B.A.-Radford University, 1992
M.B.A.-VPI & SU, 1993

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Associate Professor, Accounting
B.B.A.-Florida International University, 1975
M.S.-Florida International University, 1977
C.P.A.-Virginia, 1984

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Instructor, Industrial Technology
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

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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 Tech.
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

Wright, Barbara A.
Instructor, Physical Education
A.B.Ed. – Glenville State College, 1973
M.S. – West Virginia University, 1974

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A.S. – Virginia Western Community College, 1998
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M.B.A. – Averett University, 2003

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Instructor, Air Conditioning & Refrigeration
Air Conditioning & Refrigeration Certificate,
Virginia Western, 1997
Electrical Wiring Certificate, Virginia Western, 1999

Staff

Academic & Student Affairs
Lorry Conklin ....Vice President's Secretary
Pam Conner .... Admin. & Office Specialist
Kathy Holland..Class Scheduler

Admissions
Dana Asciolla ....PT Admission Support Staff
Carolyn Baratta....................PT Admissions Support Staff
Jennifer Bobbitt ....Education Support Specialist
Karin Cole.......................... Enrollment Services Specialist
Laura Overbay ....Education Support Specialist
Meg Patterson........Admissions & Records Coordinator
Lorna Poole..........................PT Admissions Support Staff
Christopher Shaver ....Education Support Specialist

Alliance for Excellence and Retention Services
Desiree Frye............................ Admin. & Office Specialist

Bookstore
Mary Beth Cornett.............................Bookstore Manager
Kristi Kirby.. Retail Specialist
Becky Lorton .... Retail Specialist
Nicole Owens ....PT Retail Specialist

Business, Engineering and Technology Division
Ann Layne .... PT Admin. & Office Specialist
Carlton Mabe .... Trainer/Instructor
Tammy Meador........... PT Admin & Office Specialist
Lynn Painter (Engineering).................Division Secretary
Karen Rayl .... Trainer/Instructor
Sandy Shelton (Business).....................Division Secretary

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 .... Admin. & Office Specialist
Wanda Poff.................................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
Marla Whiteside .... Financial Services Specialist
Gracie Wilson .... Financial Services Specialist

Campus Police
Lennie Atwood .... Campus Police
Mark Bennardo... Campus Police
David Blankenship .... Campus Police
Guy Gibson... Campus Police
Craig Harris .... Campus Police Chief
Suzanne Panganiban..........................PT Security Officer
Greg Roseberry... Campus Police

Career Services
Sharon Jones ....PT Education Support Specialist

Counseling
Lee Allen..............................Education Support Specialist
Kathy Falligant .... Admin. & Office Specialist
Kimberly French...................Education Support Specialist
Gloria Martin .... PT Admin. & Office Specialist

Dean of Student Services Office
Bonny Simpson...Secretary
Sharlona Wimmer....................................Student Services
....Functional Specialist

Distance Learning
Debbie Mayo .... Admin. & Office Specialist

Facilities Management
George Bevilacqua ....Project Manager
Joe Collins................................Bldg./Grounds Supervisor
Corvin Davis.............................Bldg./Grounds Technician
Brian Duncan ....PT Bldg./Grounds Technician
Henry Johnson ....Trades Technician
Bob Kester .... Carpentry Technician
Judy Lienhardt ....Admin. & Office Specialist
Tom Price.................................Bldg./Grounds Technician
James Ramsdell .... HVAC Technician
Pat Rhodes ....Trades Group Supervisor
Richard Skelley...........................PT Trades Technician
Robert Smith...Trades Technician
Chris Vaughn...........................Bldg./Grounds Technician
Bobby Walker................................ Electrical Technician
Terry Whorley ....Trades Technician
Kevin Witter ..... Director of Facilities Planning & Devel.

Financial Aid/Veterans Affairs
Betty Aker....................Education Programs Practitioner
Amy Foutz ....PT Education Programs Practitioner
Michele Hilts .... Admin. & Office Specialist
Rhonda Perdue......................Admin. & Office Specialist
Janet Rathbun................Education Programs Practitioner
Holly Woodson.......................Admin. & Office Specialist

Health Technology Division
Julia Andrews... Division Secretary
Colleen Hailey .... PT Dental Hygiene Clinical Coord.
Shirley Long .... Trainer & Instructor Nursing Lab
Rose Peters............................Admin. & Office Specialist
Debra Tyree .... Admin. & Office Specialist
Pam Woody ....Education Programs Practitioner

Horticulture/Arboretum
Kenny Dyer .... Horticulture Trainer/Instructor

Human Resources
Susan Clark.............................Human Resources Analyst
Faith Janney...................... Human Resources Practitioner
Nadine Roper.......................... Admin. & Office Specialist
Mike Shelton ....Human Resources Manager

Humanities Division
Arlaine Bryant................. PT Admin. & Office Specialist
Deborah Gilbert .... PT Admin. & Office Specialist
Sarah Grubb..Division Secretary
Ginny Manetta..................................PT Media Specialist
Ellen Munger...........................PT Photography Lab Staff

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Erik Williams ....Alumni Relations & Marketing

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Alicia Hayth.................................. PT Research Assistant

Learning Technology Center
Lois Beck.....................................PT Learning Center Staff
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Leo Cullen....................................... PT Trainer/Instructor
Astrid Eye .... PT Trainer/Instructor
Nancy Francisco...................................Trainer/Instructor
Mike McCaskey ....Trainer/Instructor

Library
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Joan Ayers .... PT Admin. & Office Specialist
Sandra Holland.................PT Admin. & Office Specialist
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Mail Room
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Natural Sciences and Mathematics Division
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Richard Okimoto...................................Trainer/Instructor
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Patty Prevo.. Trainer/Instructor

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Sylvia Foster......................... Printing Services Supervisor
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Student Activities
John Elliott.. Coordinator
Thomas Chapman.............PT Student Activities Assistant

REACH/Student Support Services
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Cameron Carroll .... Information Technology Specialist
Dawn Cox.................. Information Technology Specialist
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Sheila Haynes ....Help Desk Technician
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Michael Lucas .... Information Technology Specialist
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Tim Stockton .... Information Technology Specialist
Cathy Swain.............. Information Technology Specialist
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Tina Trudeau ......(Workforce) PT Admin. & Office Spec
Patty Willhite............(Workforce) Admin. & Office Spec

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ACCOUNTING

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Advance Auto

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Myron Cole & Associates

Harry Schwarz
Certified Public Accountant
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ADMINISTRATION OF JUSTICE

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Retired Roanoke Judge

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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

James R. Lavinder
Chief of Police
Roanoke County

George M. McMillan
City of Roanoke

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Roanoke County Schools

Brenda Anderson
Practice Administrator
Physicians to Children

Katrina Baxley
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MedQuist

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Employment Specialist
Carilion Health System

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Columbia Lewis-Gale Medical Center

Bruce Johannessen
Manager
Virginia Employment Commission

Amy Kanode
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Lewis-Gale Medical Center

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MedQuist, Inc,

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Human Resources
Roanoke Gas Company

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Spectrum Design

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Vice President
Hayes, Seay, Mattern and Mattern

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Vice President
Sheretz, Franklin, Crawford, Shaffner, Inc.

AUTOMOTIVE ANALYSIS AND REPAIR

Norman Altizer, Instructor
Roanoke City Schools

Daniel Hudson
Hudson's Auto Machine Shop

Steve Underwood
Steve's Automotive Repair

Robert Warren
Magic City Motors

BUILDING CONSTRUCTION TRADES

James H. Buck, President
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E.M. Clifton
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G.J. Hopkins, Inc.

David W. Light
President
Air Mechanical Sales

Paul W. Monaghan
Vice President
Varney Electric Company, Inc.

Jeffrey S. Shawver
Combination Inspector
Roanoke City

Lawrence H. Vest
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Templeton-Vest, Inc.

BUSINESS/MANAGEMENT

Fred Balmar
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Carter Machinery

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P.A.C. Floor Fashions, Inc.

Carolyn Fittz
Human Resource Director
Elizabeth Arden

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Plant Manager
Info Seal

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Allstate Insurance Company

Bruce Johannessen
Manager
Virginia Employment Commission

Carolyn Kazner
Community Banker
Wachovia Bank

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Roanoke Gas Company

Joseph J. Sgroi
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Roanoke County

COMMUNICATION DESIGN

Heather Cash
R.R. Donnelley & Sons Co.

Matt Dillon
Customer Service Manager
Novozymes Biologicals, Inc.

Tony Pearman
Access

Katie Wallace
Wallace Agency

COMPUTER AND ELECTRONICS AND MECHANICAL ENGINEERING TECHNOLOGY

Bonnie Allen, Vice President
Customer Operations
Keltech Electronics Innovators

Joseph Anderson
Test Engineer

Barry Baird, President
Avis Construction

Richard Bishop
Dominion Air & Machinery

Eric T. Carlen, President
Carlen Controls, Inc.

Deana B. Marion, Program Manager
M/A-COM

Jerry Pace, Principal
City of Salem Schools

Darin Skilling, Manager
Customer Training & Simulation
General Electric Company

Earl R. Smith, Consultant
HR Field Operations
American Electric Power

Roy Marsico, Manager
Human Resources
ITT Night Vision

DENTAL HYGIENE

Laura Arnold, R.D.H.
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Charles E. Conklin, D.D.S.
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Roanoke Memorial Rehab Center

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Dentist

Kris Enright, D.D.S.
Dentist

Marie Gibbs, Dental Hygienist
Veterans Administration Medical Center

Colleen Hailey, R.D.H.
Dental Hygienist

Heather Harris, R.D.H.
Dental Hygienist

Richard Joachim, D.D.S.
Dentist

Linda Meador, R.D.H.
Dental Hygienist

Lee Jones, D.D.S.
Dental Services
Roanoke Memorial Rehab Center

Robert McClanahan, D.D.S.
Dentist

R. Douglas Ross, D.D.S.
Dentist

Becky Tinsley, R.D.H.
Dental Hygienist

Steve W. Wallace, D.D.S.
Director of Dental Services
Veterans Administration Medical Center

Kay Webster, R.D.H.
Dental Hygienist

*Carrie Rogers
Student Representative

*Student Representative Appointed
Annually

VWCC-DCC JOINT VENTURE DENTAL HYGIENE

Michelle Bernard, Coordinator
George Washington High School
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Dean of Arts and Sciences
Danville Community College

Shelby Gentry, R.D.H.
Dental Hygienist

Pat Gobble, R.D.H.
Dental Hygienist

Dr. F.T. Grogran, III, D.D.S.
Dentist

Colleen Hailey, R.D.H.
Clinical Coordinator, VWCC

Dr. Greg D. Howard, D.D.S.
Dentist

Robin Jennings, R.D.H.
Dental Hygiene Instructor, DCC

Anne Kornegay, R.D.H., M.S.
Division Dean
Math, Science, & Health Technology,
VWCC

Tina Layman, R.D.H.
Dental Hygienist

Dr. Jim Muehleck, D.D.S.
Dentist

Dr. Albert Payne, D.D.S.
Dentist

Martha Roberson, R.D.H., M.S.H.A.
Dental Hygienist Program Head
Virginia Western Community College

Cathy Rutledge, R.D.H.
Dental Hygienist

Lynn Turner, R.D.H.
Site Coordinator
Danville Community College

*Student Representative Appointed
Annually

VWCC-LFCC JOINT VENTURE DENTAL HYGIENE

Dr. Gerald Brown, D.D.S.
Dentist

Dr. Thomas Burke, D.D.S.
Dentist

Mary Catherine Dean, R.D.H.
Virginia Western Community College

Lori Ellington, R.D.H.
Dental Hygienist

Dr. Kenneth Eye, D.D.S.
Dentist

Dr. Clark Fortney, D.D.S.
Dentist

Dr. Thomas Gromling, D.D.S.
Dentist

Colleen Hailey, R.D.H.
Virginia Western Community College

Heather Harris, R.D.H.
Virginia Western Community College

Brenda Hatch, R.D.H.
Dental Hygienist

Kathleen Kanter, R.D.H.
Dental Hygienist

Crystal Lawrence, R.D.H.
Dental Hygienist

Dr. Willard Lutz, D.D.S.
Dentist

Claudia Mazurkiewicz, R.D.H.
Site Coordinator
Lord Fairfax Community College

Todd Mullins, D.D.S.
Dentist

Martha Roberson, R.D.H., M.S.H.A.
Program Head of Dental Hygiene
Virginia Western Community College

*Student Representative Appointed Annually

EARLY CHILDHOOD DEVELOPMENT

Rachel Blanks, Director
Second Presbyterian Weekday School

Jennifer Bradshaw
Education Coordinator
TAP Head Start

Phyllis Cundiff
Special Education Department
Roanoke City Schools

Rosemarie Dillon, Director
First Baptist Child Development Center

Diane Golder
Kindergarten Teacher
Eagle Rock Elementary

Diane Kelly, Director
Faith Christian Grammar School

Dana Lee, Licensing Specialist
Piedmont Regional Office
Department of Social Services

Susan Milovich
Director
Wachovia Child Development Center

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 & Rescue

Chief James Grigsby
Roanoke City Fire/EMS

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
Salem

Battalion Chief Billy Altman
Salem

Deputy Chief David Hoback
Roanoke City Fire/EMS

Chris Slemp, Director
Franklin County Public Safety

James Armstrong
Virginia Western Adjunct Faculty

HORTICULTURE TECHNOLOGY

Marilyn Arbogast
Roanoke City Horticulturist
Department of Parks and Recreation

Adam Braaten
Bartlett Tree Company

Sam Camp, Superintendent
Ashley Plantation Golf Course

Bill Garren, Owner
Green Acres, Inc.

Fredrick Gray
Owner-Manager
Gray's Nursery

Janette Hendrickson
Horticulture Instructor
Botetourt Technical Education Center

Alan McDaniels, Ph.D.
Horticulture Department
Virginia Tech

Effie Moore, Owner
Plant Culture

Tyler Palmer, Owner
Obenchain's Garden Center

Gretchen Van Tassel
Horticulturist
Roanoke Country Club

HUMAN SERVICES
(formerly Mental Health)

Virginia Dingler
Rescue Mission

Pat Hill
Community Training Center

Robin Hubert
On Our Own of Roanoke Valley, Inc.

Stephanie Jones
TRUST

Sheila Lythgoe
Blue Ridge Behavioral Healthcare
Project LINK

Barbara Maberry
Alumni

Nadirah Preston
Transitional Living Center

INFORMATION SYSTEMS TECHNOLOGY

Nicole Bird
Information Technology
County of Roanoke

Joe Chase, Ph.D.
Program Director
Dept. of Information Technology
Radford University

Kathy Cox
Technology Planning Administrator
City of Roanoke

Jonathan George, Vice President
Systems Development
Advance Auto

Larry Janney
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Anthem Blue Cross/Blue Shield

Paul Moore, Vice President
Information Systems
Shenandoah Life Insurance Company

Jim Nicholas
IT Project Manager-Supply Chain
Elizabeth Arden

Kim Roe, Education Consultant
Human Resources Department
Carilion Health System

Eric Secor, Manager
Business Systems
MW Manufacturers, Inc.

Mark Wilbourn
IT Director
Roanoke Electric Steel Company

Teresa Wolff, Vice President
Technology Department
Atlantic Companies

INTEGRATED ENVIRONMENTAL STUDIES SPECIALIZATION

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Dr. Antoinette Pepin
Assistant Professor
Virginia Western Community College

Warren Evenson, Senior Geologist
Delta Environmental Consultants

Tom Collins, Minerals and Geology
Program Manager
Forest Ecology Group
George Washington and Jefferson
National Forest

Anne Kornegay, Division Dean
Natural Science, Mathematics and
Health Technology

LEGAL ASSISTING

Charles O. Cornellison
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Copenhaver, Ellett, Cornelison

Roy V. Creasy, Esq.
Attorney at Law

Mrs. Vaso Doubles
Troutville

Michele Haley, Esq.
Attorney at Law

Ann Phipps
Human Resource Director
Gentry, Locke, Rakes & Moore

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Norfolk Southern Corporation

MOTORCYCLE

Bruce Biondo
Motorcycle Program Manager
Department of Motor Vehicles

Roger Hammer
Motorcycle Safety Instructor

Richard Kemp, Owner
Cycle Center

Carlton Mabe, Coordinator
Motorcycle Safety
Virginia Western Community College

Dennis Phillips, Coordinator
Motorcycle Safety
Central Virginia Community College

Jeffrey Poore, Instructor
Motorcycle Safety

NURSING / PRACTICAL NURSING

Sharon Baldwin, R.N., M.S.N.
Director, Office of Employee Education
Veterans Administration Medical Center

Valli Voil
Director of Behavioral Health
Lewis-Gale Medical Center

Ginny Burton, R.N.
Director of Nursing
Carilion Franklin Memorial Hospital

LaVern Davis, R.N., M.S.N.
Supervisor of Health Services
Roanoke County Schools

Brenda Divers-Wiley, R.N., B.S.N.,
M.A. Ed.
Director of Education/Medical Library
Lewis-Gale Hospital

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Assistant VP, Director of Nursing
Friendship Manor Health Care Center

Dr. Marcella Griggs
Director of Radford School of Nursing

Jennifer Lytle, R.N. DON
Department of Veterans Services

Bonnie Matthews, B.S.N.
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Dept. of Federal Occupational Health

Maxine Smith, R.N.
Director of Educational Services
Richfield Nursing Center

Kathleen Baudreau, RN
Interim Nursing Officer
Lewis-Gale Medical Center

Joyce Rakes
Carilion Roanoke Memorial Hospital

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Chair
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Carilion Health System

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Virginia Western Community College

Shirl Duke Lamanca, M.S.Ed., R.T.-R.
Assistant Dean of Health Technology &
Program Head of Radiologic Technology
Virginia Western Community College

Freda T. Carson, R.T.-R.(T)
Director, Radiation Oncology
Centra Health System
Virginia Baptist Hospital
Radiation Oncology Center

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Director, Academic Alliances
Human Resources
Carilion Health System

Robert C. Heath. M.D., Medical Director
Director Radiation Oncology
Carilion Cancer Center of
Western Virginia

Scott Myers, B.S., R.T.-R.(T)
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Lewis-Gale Regional Cancer Center

Cathy Sargent, B.S., R.T.-R.(T)
Team Leader
Carilion Cancer Center of Western
Virginia

Joseph L. Surace, M.S.
Radiation Physics
Carilion Cancer Center of
Western Virginia

Student Representatives

Julia Holtz
Loree Sheffield
Sonji Heltzel

RADIOGRAPHY

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Physics Associates

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     Diagnostic Imaging Services
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Program Faculty & Clinical Coordinator

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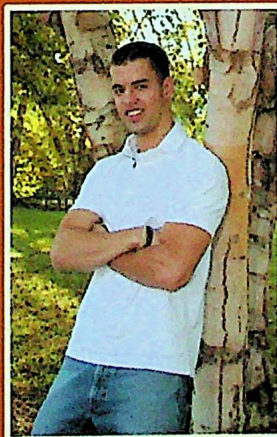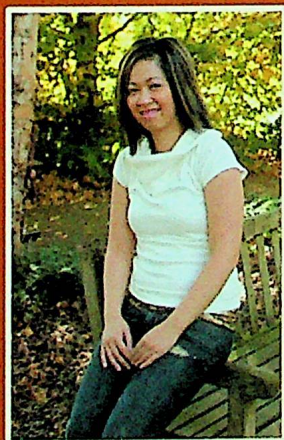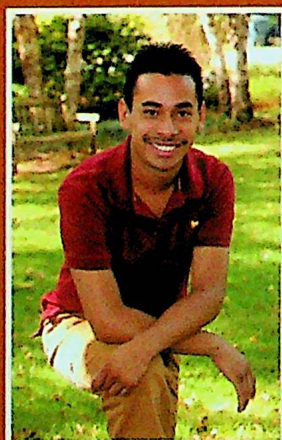
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VIRGINIA WESTERN

The Community's College
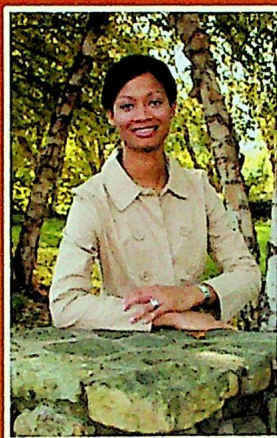
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