2004 - 2005
COLLEGE CATALOG

Virginia Western Community College
3095 Colonial Avenue
P.O. Box 14007
Roanoke, VA 24038
http:\\www.vw.vccs.edu
TTY: (540) 857-6351

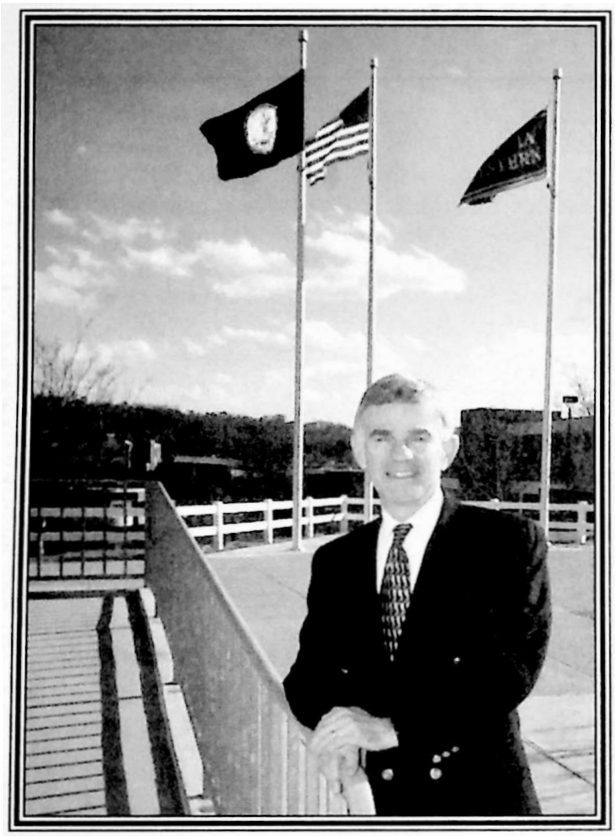
General Information and
Registration System: (540) 857-8922

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

It is the policy of the Virginia Community College System and Virginia Western Community College to maintain and promote equal employment and educational opportunities without regard to race, color, sex, age, religion, disability, national origin, or other non-merit factors. For further information, contact the Title IX Coordinator in Fishburn Hall, Room 027, 857-6067 or the Section 504 Coordinator, C113, 857-7286. TTY number is 540-857-6351.

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 2004-2005

SUMMER TERM 2004

10-Week Session

First Day of Classes ..... May 17
Last Day to Register/Add a Class ..... May 21
Last Day to Drop and Receive a Refund ..... May 26
Memorial Day Holiday ..... May 31
Last Day to Apply for Graduation This Term ..... June 4
Break (no classes) ..... June 22-26
Last Day to Withdraw Without Grade Penalty ..... June 28
Independence Day Holiday ..... July 5
Last Day of Classes ..... August 2

First 5-Week Session

First Day of Classes ..... May 17
Last Day to Register/Add a Class ..... May 19
Last Day to Drop and Receive a Refund ..... May 21
Memorial Day Holiday ..... May 31
Last Day to Withdraw Without Grade Penalty ..... June 7
Last Day to Apply for Graduation ..... June 4
Last Day of Classes ..... June 21

Second 5-Week Session

First Day of Classes ..... June 28
Last Day to Register/Add a Class ..... June 30
Last Day to Drop and Receive a Refund ..... July 2
Independence Day Holiday ..... July 5
Last Day to Withdraw Without Grade Penalty ..... July 19
Last Day of Classes ..... August 2

FALL SEMESTER 2004

16-Week Session

First Day of Classes ..... August 19
Last Day to Register/Add a Class ..... August 27
Last Day to Drop and Receive Refund ..... September 1
Labor Day Holiday ..... September 6
Last Day to Apply for Fall Graduation ..... October 4
Last Day to Withdraw Without Grade Penalty October 21
No night classes, day classes will meet ..... November 23
Faculty Research Day –
No Day or Night Classes ..... November 24
Thanksgiving Holidays ..... November 25-27
Last Day of Classes ..... December 8
Final Examinations ..... December 9-15

SPRING SEMESTER 2005

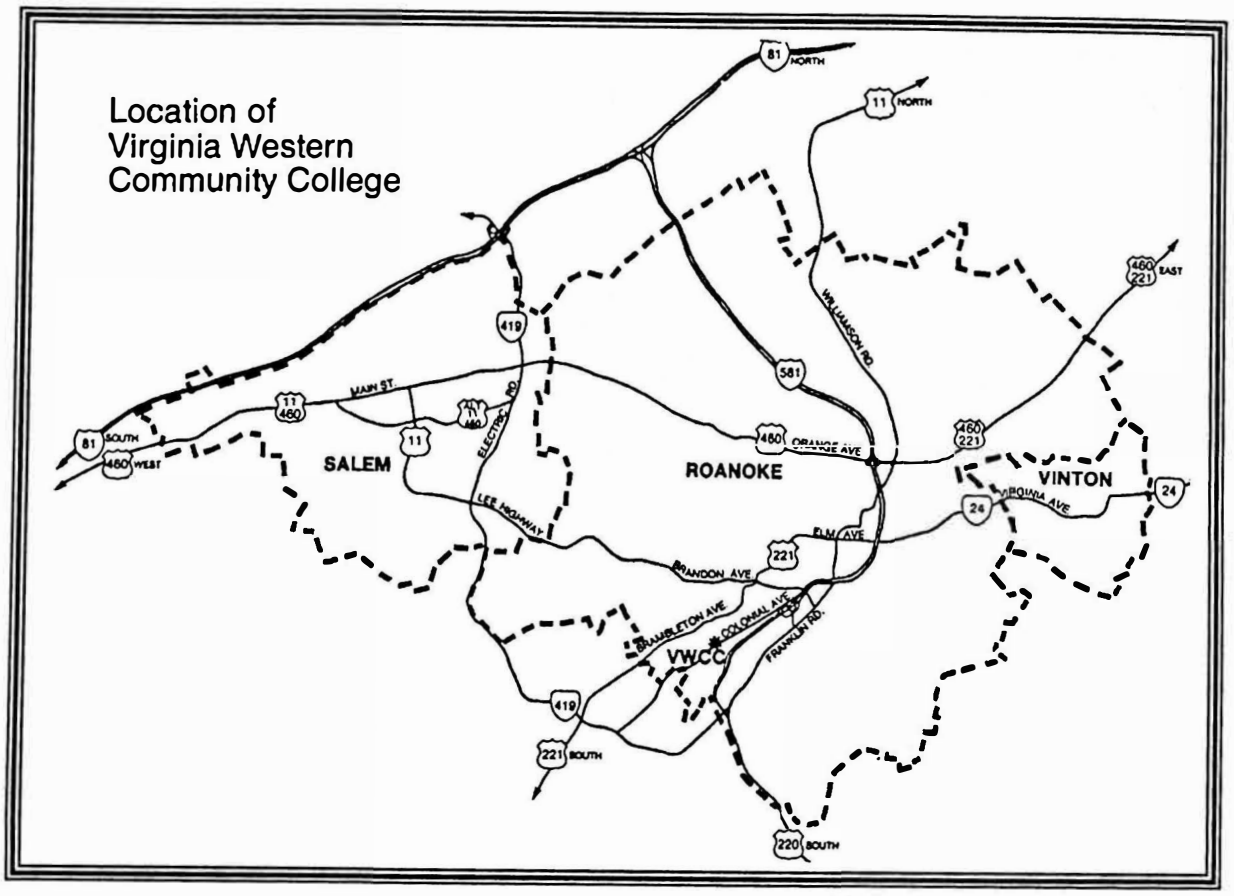
16-Week Session

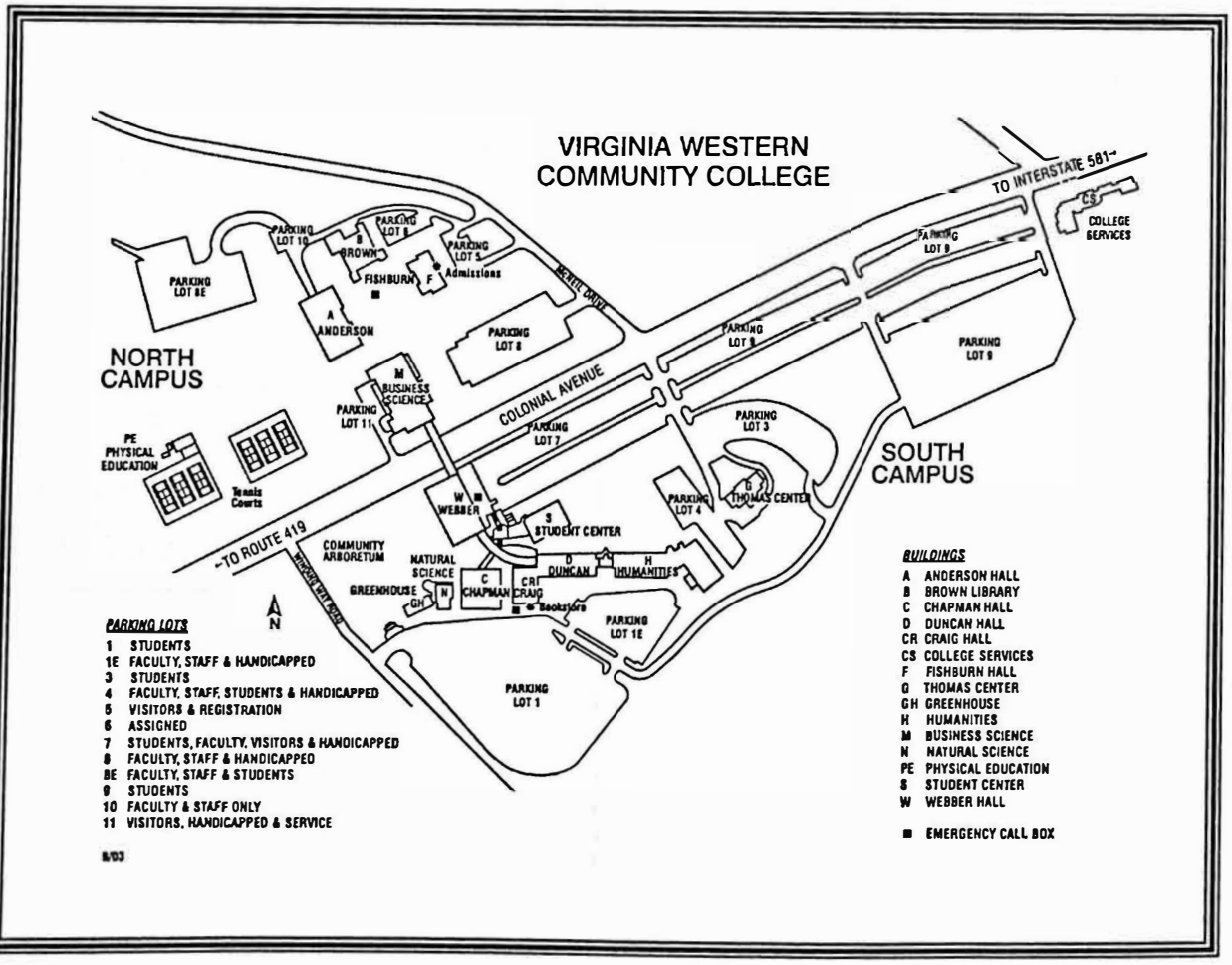
First Day of Classes ..... January 10
Last Day to Register/Add a Class* ..... January 18
Last Day to Drop and Receive Refund ..... January 23
Last Day to Apply for Spring Graduation ..... February 7
Makeup/Spring Break* ..... March 7-12
Last Day to Withdraw Without Grade Penalty ... March 11
Last Day of Classes ..... April 30
Final Examinations ..... May 2-7
Commencement Ceremony ..... May 13

* *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
81 NORTH
11 NORTH
460 221 EAST
WILLIAMSON RD
419
581
MAIN ST
11 460
ELECTRIC RD
81 SOUTH
460 WEST
11
SALEM
460 ORANGE AVE
ROANOKE
460 221
VINTON
24
VIRGINIA AVE
LEE HIGHWAY
ELM AVE
221
BRANDON AVE
BRAMBLETON AVE
COLONIAL AVE
VWCC
FRANKLIN RD
419
221 SOUTH
220 SOUTH


VIRGINIA WESTERN
COMMUNITY COLLEGE
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CS
COLLEGE SERVICES
PARKING LOT 10
PARKING LOT 8
PARKING LOT 5
BROWN
FISHBURN
F Admissions
PARKING LOT 8E
A ANDERSON
NORTH CAMPUS
PARKING LOT 8
PARKING LOT 9
PARKING LOT 9
M BUSINESS SCIENCE
PARKING LOT 11
COLONIAL AVENUE
PARKING LOT 7
PARKING LOT 3
PE PHYSICAL EDUCATION
Tennis Courts
W WEBBER
S STUDENT CENTER
PARKING LOT 4
G THOMAS CENTER
SOUTH CAMPUS
TO ROUTE 419
COMMUNITY ARBORETUM
NATURAL SCIENCE
GREENHOUSE
GH
N
C CHAPMAN
CR CRAIG
D DUNCAN
H HUMANITIES
Bookstore
PARKING LOT 1E
PARKING LOT 1
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
8/03
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 and Administrative Services ..... Dwight E. Blalock
Vice President of Academic & Student Affairs ..... Dr. John S. Capps
Vice President of Institutional Advancement ... Dr. Mark Q. Emick, Sr.
Vice President of Workforce Development & Lifelong Learning, Temporary Assignment ..... Carroll L. Gentry
Administrative Officer for Development ..... Vacant
Administrative Officer for Workforce Development ..... Benjamin S. Bowman
Administrative Officer for Workforce Development ..... Ruth Z. Hendrick
Assistant Coordinator of Student Services ..... Dr. Gloria A. Lindsay
Coordinator of Distance Learning and Instructional Technology ..... Dr. Inez H. Farrell
Coordinator of Facilities Management ..... Kevin Witter
Coordinator of Dual Enrollment. William A. Salyers, Jr.
Coordinator of Library ..... David L. Hillman
Coordinator of Student Affairs .... Michael C. Henderson
Dean of Business & Engineering Technology, Temporary Assignment ..... James W. Poythress
Dean of Humanities ..... Elizabeth C. Wilmer
Dean of Science, Mathematics and Health Technology ..... Anne B. Kornegay
Dean of Social Sciences ..... Dr. James E. Sargent
Director of Continuing Education ... Ronald L. Coleman
Director of Institutional Research and Planning ..... Dr. David C. Hanson
Financial Aid and Veterans Affairs Officer ..... Dr. Larry E. Ewing

College Telephone Numbers

Academic Advising Center	857-6512
Admissions Office and Registration	857-7231
Alliance for Excellence	857-7583
Bookstore	857-7334
Business Office	857-7201
Business Science 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 and Industrial 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
Science and Mathematics Division	857-7273
Social Sciences Division	857-7276
Student Activities	857-6328
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	857-7543

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 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 and Legal Assisting approved by the American Bar Association; 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 classrooms, faculty offices, and laboratories for Air-Conditioning and Refrigeration, Machine Shop, Radio/TV and Student Support Services.

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.

A Student Center opened in September 1996. This facility houses Student Activities, Student Government Association, and Alliance for Excellence. A student study and lounge area is also located in this building.

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, Payroll Office and Utility Customer Support Center. The building also houses Admissions, Records, Counseling, Academic Advising Center, Financial Aid, and Veterans Affairs. Several other offices are also located in Fishburn Hall.

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. A Dental Hygiene Clinic that 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 laboratories are located in rooms M-268 and M-255 and the hours of operation are Monday through Friday, 8:00 a.m. to 10:00 p.m., Saturdays 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

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.

This can be accomplished through adherence to the following priorities:

- efficient "just in time" training and educational delivery strategies.
- institutional articulation and collaborations with a diverse business and industry clientele.
- business, industrial and organizational personnel development partnerships.
- commitment to the development of high skills training delivery centers.
- 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
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

Eligibility

Any person who has a high school diploma, a GED, or who is 18 years of age and can benefit from classes at the college may be admitted.

High school students in the 10th, 11th, or 12th grade may attend with approval of their high school principal.

Persons age 15-17 that are not attending secondary schools may attend with approval of the school superintendent of the city or county of their residence.

Others with special circumstances may attend with approval of the Virginia Western Community College Admissions Committee.

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.

Application Procedure

All applicants must submit an "Application for Admission." Applicants who graduated from high school within the previous year must provide high school transcripts.

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

Applicants who wish to enter a program of study (curriculum) must provide official transcripts from all high schools, colleges, and universities attended and may be 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 insure that applicants possess the potential to meet curriculum requirements.

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 seeking admission to one of the Health Technology programs (Nursing, Radiography, and Dental Hygiene) 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.

Admissions Policy

The following applicants are eligible for admission to Virginia Western Community College:

I. Applicants who have never attended a college:

Applicants who are 18, or who have a GED or have graduated from high school will be accepted. Others may be accepted under the following conditions:

A. If they are enrolled in the 10th, 11th, or 12th grade and have permission of the principal to take a course(s);
B. If they have dropped out of school and have the approval of the school system under whose jurisdiction they reside;
C. If they are enrolled in school and have not yet reached the 10th grade. These applicants may be accepted by action of the Admissions Committee to take a course under special conditions after it is determined that the student can benefit from attending the college.

II. Applicants who have previously attended college:

Applicants may be admitted if they fall into one of the following categories:

A. Academically in good standing;
B. Academic probation - these applicants may be admitted with academic restrictions.
C. Academic suspension - these applicants are eligible after one semester has passed. They may be admitted after meeting the following conditions:
   1. Completion of appropriate placement tests;
   2. Upon recommendation of a Virginia Western Community College counselor;
   3. With approval of the Admissions Committee or the Coordinator of Admissions and Records.

   Exceptions to the waiting period of one semester may be made if one of the following conditions exist:
   a. Students wishing to enter a different curriculum and have at least a 2.0 on the courses applicable to the new curriculum;
   b. Students who were suspended for low cumulative GPA and have an acceptable curriculum GPA;
   c. Noncurricular students wishing to take courses that are primarily job training;
   d. Students who feel they have mitigating circumstances should direct a letter to the Admissions Committee asking for acceptance. The letter must address the following:
      (1) The course or courses desired;
      (2) The goal or curriculum which will be pursued;
      (3) A statement explaining the academic difficulty that led to suspension;
      (4) An explanation of what has been done to enhance the student's chance for success.

D. Academic dismissal (applicants who have been out of school less than three years may appeal to the Admissions Committee for admission if they feel mitigating circumstances warrant consideration. A letter should be directed to the Admissions Committee containing the following:

1. The course(s) the applicant wishes to take;
2. The curriculum the applicant wishes to enter and the goal concerning education;
3. A statement on why the applicant had 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.

E. Students who have been on academic dismissal for longer than three years may be admitted upon completion of an "Application for Admission."

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

Admission of International Students

In addition to the general 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 VWCC 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

Senior citizens must apply to the college and be admitted as all other students. Under the Virginia Senior Citizens Higher Education Act of 1974, amended in 1976, 1977, 1982, and 1988, anyone who is 60 years of age or older, who is a legal domiciliary of Virginia, and whose Virginia taxable income does not exceed $15,000 is eligible to enroll in credit courses for academic credit at the college.

Senior citizens may register for and audit courses offered for academic credit, or for courses not offered for academic credit.

Senior citizens pay no tuition but are responsible for service fees, course materials and laboratory fees.

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.

Students Transferring From Other Colleges

Students transferring from other colleges to Virginia Western Community College must complete an "Application for Admission."

Transfer students must have official transcripts from all colleges previously attended mailed directly to the Admissions Office, Virginia Western Community College, P.O. Box 14007, Roanoke, VA 24038. (See "College Transcripts")

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 Virginia Western, 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.

Advanced Placement and Credit-by-Examination

Students may be awarded college credit if they 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. Students should contact the Records Office to determine the necessary steps for receiving such credit.

Credit-by-Examination

The college participates in the nationally recognized **Advanced Placement (AP) and College-Level Examination Program (CLEP)**. Official AP and CLEP scores should be forwarded to the Records Office for approval. Credit-by-Exam is requested through the division office and must be approved by the Instructor/ Advisor. The 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.

Military 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. The college also uses CLEP, DANTES, and Advanced Placement (AP) credit-by-examination for awarding credit to servicemembers.

Dual Enrollment for High School Students

High school students may be allowed to meet some of their high school graduation requirements while simultaneously earning college credit. Officials from both the high school and Virginia Western must ensure that students registered under this arrangement are qualified to benefit from the work and to be successful. Students must be recommended by the high school and must meet the admissions requirements established by the college. High school students interested in earning dual enrollment credit should first contact their principal. Further information may be obtained from the Enrollment Services Coordinator.

Classification of Students

All students are classified according to the following categories:

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

NONCURRICULAR STUDENT - (1) A student auditing course(s) for no credit; (2) High school students who, with their school principals permission 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 STUDENT - 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 STUDENT - 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.

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

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 VWCC. 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, telephone number, email address, dates of attendance, enrollment status, program of study, degrees received, awards, honors, participation in clubs and activities, prior educational institutions) 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 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 (effective summer 2003). 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 on the ground floor of Fishburn Hall. Students who have not been enrolled for more than three years must reapply to the college. Most types of students can register themselves 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 857-7231.

Can I register and pay my tuition without coming to campus? Students with a current application on file can register by telephone (857-7543) under certain conditions. Tuition can be paid by mail or by telephone. Students may 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 or in person by submitting an add/drop form to Admissions by the announced deadline (published in the Schedule of Classes). 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 add/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, 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. There is no charge. The Records Office is located on the ground floor of Fishburn Hall across from Admissions.

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 in the Counseling Office (Fishburn 018) and job referrals in Webber 117.

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.

Tuition Refunds

1. 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.

2. Eligibility

   a. The student must complete a withdrawal form, obtain the appropriate signatures and last date of attendance.
   b. The form must be completed in the time frame described.
   c. The student must deliver the form to the Admissions Office and have it receipted and dated. This date is the official withdrawal date.

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 Coordinator of Admissions and Records.
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 $350 per semester for the full-time student. This cost is subject to change since it is based on publishers' and suppliers' listed prices.

The Bookstore carries a complete line of textbooks, supplies, art material, and general merchandise.

Rules for Bookstore Refunds

The Bookstore Manager is the only authorized person who can accept books for refund. Books returned for refund are subject to inspection and must be in new condition with the plastic shrink-wrap unopened and no markings or other damage. The book must be presented to the Bookstore Manager within the first two weeks of the semester to receive a refund. Refunds are made by check, which will be mailed to the student. No refunds are issued without a receipt.

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 due and payable amounts 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, 2005, for the 2005-2006 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.

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 2003-2004 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 $15,000, no prior-year untaxed income;
(b) a married independent student with no children, filer of a Form 1040A, prior-year taxable income of $12,961 (husband) and $9,730 (student), no prior-year untaxed income, reportable student assets of $20,060.
(c) a dependent student from a household containing two parents and one other child, prior-year parental income of $46,201 (all taxable), reportable parental assets of $22,480, prior-year student income of $2,156.
(d) a married independent student with three children, filer of a Form 1040, prior-year taxable income of $46,172 (husband) and $7,481 (student); reportable student assets of $2,600.
(e) a dependent student from a household containing just student and father, prior-year

taxable incomes of $35,678 (father) and $7,491 (student), no prior-year untaxed income.

Who Qualifies for a maximum Pell Grant?

Again, it is difficult to provide a brief answer. However, to give some guidance, the following are examples of students who, during the 2003-2004 academic year, received maximum Pell Grant awards of $2,025 per semester as full-time students:

(a) a dependent student from a household containing two parents and two other children, prior-year parental income of $27,401 (all taxable), reportable parental assets of $6,800, prior-year student income of $4,278, no reportable student assets;
(b) a married independent student with two children, filer of a Form 1040, prior-year taxable income of $6,445 (student) and $16,232 (husband), reportable student assets of $900;
(c) a dependent student whose parents filed a Form 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) a single independent student with no dependents of her own, filer of a Form 1040A, prior-year taxable income of $5,810, no prior-year untaxed income;
(e) a married independent student with no children, prior-year Social Security benefits of $5,415, no other prior-year income for either student or wife.

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.

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 3-5 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 20 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 are strongly considered, with financial need sometimes also being an essential criterion. Deadlines, depending upon the scholarship, are May 1, June 15, June 30, and November 15. An application form, common to all programs, much be completed and forwarded to the Foundation Office. The following were the 2003-2004 scholarships:

Barry L. Pendrey Memorial Scholarship
Access, Inc., Scholarship
Mike Bassett Memorial Scholarship
Brown & Sons Farm Scholarship
McFarland Scholarship
American Sign Language Scholarship in memory of Laura Knight Schowe
Atlantic Mutual Companies Scholarship
Belmont Presbyterian Church Scholarship
Donald Cameron Book Assistance Scholarship
John C. Dillon Memorial Scholarship
Rita Halsey David Radiography Scholarship
Fred Whitaker Company Scholarship
Katherine Futrell Honorary Scholarship
Ellie Knisely Teacher Education Scholarship
Gerry Montgomery Meador Scholarship
William Milton Meador Scholarship
Lakeland Masonic Lodge Scholarship
Lewis-Gale Medical Center Scholarship
VWCC Nursing Scholarship
Odasz Scholarship
Roanoke Electric Steel Corporation Scholarship
Maurice Strausbaugh Memorial Scholarship
Walter Darnall Vinyard Scholarship
Bridging the Gap Scholarship
Continental Societies Scholarship
The Down Syndrome Association of Roanoke Scholarship
James Mark Mitchell Memorial Art Scholarship
Mr. & Mrs. Emanuel Payne Scholarship
The Roanoke Tribune Scholarship
Dental Hygiene Class of 1999 Annual Scholarship
Alice Becker Hinchcliffe Williams 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:

Mary Marshall Nursing Scholarship Program
Roanoke Academy of Medicine Auxiliary
Lewis-Gale Foundation
National Association of Women in Construction
Virginia Child Care Provider Scholarship
Talbots Women's Scholarship Fund
Dorothy J. Hall Scholarship (Virginia Credit Union)
Virginia Business and Professional Women's Foundation
American Association of University Women
American Business Women's Association
Mildred A. Mason Memorial Scholarship Foundation

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 on the ground floor of Fishburn 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 from the Internet at 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 (1700 received $3.74 million in Pell Grant funds last year). The average cost of tuition and books for a full-time student at Virginia Western is around $1800 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, once the student has obtained at least one instructor's signature verifying class attendance.

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

How do I submit a written appeal to the Financial Aid Committee? You should fully explain your extenuating circumstance, in letter form, and submit this directly to the Office of Financial Aid.

Student Services

Academic Advising Center

http://www.vw.vccs.edu/registration/Counseling_Academic_Advising/Academic_Advising.htm

The Academic Advising Center, located on the ground floor of Fishburn Hall (F027), is ready to help with the advising needs of current and returning students. The goals of the Advising Center are to help students clarify their career and life goals, select appropriate courses and other educational experiences, interpret institutional requirements and evaluate student progress toward established goals. The center, staffed by faculty and counselors, can assist students with course substitutions, changing of curriculum, transfer questions and graduation requirements. The office phone number is 857-6512.

Career and Placement Services

The Career and Placement Services office, located in the Student Center, maintains information to assist in career exploration. Descriptions of hundreds of occupations are provided along with salaries and employment outlook for each occupation.

The office also maintains information on resume writing and job interviewing skills. Graduates of Virginia Western may register with placement services to receive notification of job openings in their field.

Counseling Services

http://www.vw.vccs.edu/registration/Counseling_Academic_Advising/index.html

Potential students and newly enrolled students should contact the Counseling Office, located in Fishburn 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.

The Transfer Resource Center, part of the Counseling Office, houses hard copies of catalogs for Virginia colleges and transfer guides for state-supported institutions. A computer dedicated to transfer information is available for student use in accessing web-based college information. Most colleges and universities now have their applications available on the web. The counseling staff is available to help fill out applications and answer questions regarding transfer.

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.

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 of their need for auxiliary aids, readers, tutors, interpreters, taped materials, or other services and devices as far in advance as possible before classes begin. 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 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.

STUDENT PUBLICATIONS - The Student Activities Office produces 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.

Student Activity Hour

Each Wednesday from 12 noon - 1:30 p.m. has been designated as the Student Activity Hour. This time has been reserved so students can attend club meetings, sponsored events and intramural activities.

Off-campus Housing

The Student Activities Office will provide a listing of available housing, roommates, and other pertinent information within the community. (Student Center 202A - 857-6328).

Student Health Services

Since Virginia Western is a nonresidential college, no health services are provided. Students are encouraged to follow a healthy lifestyle and to use good safety practices. Information on a student accident and sickness healthcare plan may be obtained 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

Virginia Western will be implementing a photo identification system in 2004. This service will provide faculty, staff and students with cards to be used for identification purposes. The schedule of classes insert and the college's web will announce the location and procedures for obtaining the identification card.

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 throughout the student's college stay.

Library resources include approximately 65,000 books, a collection of videocassettes, audiocassettes, record albums, 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, several 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 NOTIS, the same system used at other Virginia community college libraries. The web version of the Library's NOTIS catalog is called WebPAC. WebPAC 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. The rate per day is ten cents per item. 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 resource center for supplementary instructional assistance for students. Tutorial assistance, computer-assisted learning, video-assisted learning, and other audiovisual presentations are available to students. Tutoring is available in most subject areas taught by the college. Tutorial assistance is offered to supplement individual classroom assignments. Lab assistants and tutors consult with individual students to assess their need for instructional assistance. Facilities are available for individual study and small study groups supervised by tutors and lab personnel. In addition, a microcomputer lab and a variety of microcomputer software are available for use by students and the community. The Learning Technology Center gives placement tests for new students and administers the CLEP testing program. Lab assistants administer, monitor, and score 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 → PROGRAM HEAD → DIVISION DEAN

COUNSELOR → COORDINATOR OF STUDENT AFFAIRS →

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 shall not be from the division 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 acquaintance or 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, of 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 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 857-6067. 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).

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 Student Support Services office in Craig 113 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's 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 Coordinator of Admissions and Records in the office of the Vice President of Academic and Student Affairs.

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 Coordinator of Admissions and Records in the office of the Vice President of Academic and Student Affairs.

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 (STD 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 unusual 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. Courses 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); otherwise, the I grade will be changed to an F grade. 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 Vice President of Academic and Student Affairs.

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 add/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 do not automatically receive a W if they stop attending classes. Students must complete a schedule change form and deliver it to the Admissions Office prior to the end of the drop deadline in order to avoid receiving a grade of F. After that time, 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 made to the Admissions Office during the term in which the discontinuation of attendance occurs.

X Audit - No credit. To audit a course, the student must obtain permission from the appropriate Division Dean during the first week of class. 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 audit to credit or credit to audit must do so within the add/drop period for the session.

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.

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 Vice President of Academic and Student Affairs designee 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 Vice President of Academic and Student Affairs designee. 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 the Vice President of Academic and Student Affairs or his designee. 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.

Grade Forgiveness - Academic Renewal Policy

A student who has been separated from the college (not enrolled) for a period of at least five years (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; and 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. 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. Instructors will provide students with a statement of their attendance policy during the first class meeting. When the number of unexcused absences reaches a sum equivalent to 30 percent of the total instructional time (e.g., 5 weeks in a 15-week course), the instructor may drop the student from class. (See explanation of withdrawal grades.)

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 SOAR at the Virginia Western website (www.virginiawestern.edu) after the end of each semester. Final grades are a part of the student's record and are recorded on the student's permanent report. Students should report a conflict in grade to their instructor. Errors in a grade report should be reported to the Records Office within six weeks of the end of the semester in which the grade was given.

High School Transcripts

Curricular students, students who enroll within one year from their high school graduation, and students who do not indicate their intent to be noncurricular must provide high school transcripts. When the college recognizes that the high school transcript is of no value for college or curricular admission, the transcript may be waived.

Transcripts from Other Colleges

Students previously enrolled at any other college will be required to provide transcripts unless the application clearly indicates the student's desire to be noncurricular.

Students will be admitted to a curriculum after meeting all curriculum admissions criteria. Students may enroll through the add period; because of this, students

may be allowed to proceed through the admissions process without waiting for transcripts. If students have not provided all undergraduate transcripts (graduate transcripts should be provided if students want them considered for transfer credit) by the end of the fourth week of the semester, they will be notified that failure to provide required transcripts by the end of the eighth week will cause an administrative hold to be placed on their file. The hold will do the following: (1) students will be made noncurricular, and (2) financial aid, veteran's benefits, and other assistance could be adversely affected.

No currently enrolled nondegree student may be reclassified as a degree-seeking student until all postsecondary undergraduate transcripts have been provided.

Academic Honors

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

Students who have attended a VCCS community college for a minimum of 30 semester hours may be eligible for graduation honors. Associate degree and Certificate completers are eligible for graduation honors, however, Career Studies completers are not eligible for graduation honors. Appropriate honors based on the overall academic achievement at Virginia Western Community College are as follows:

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

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

HONORS PROGRAM - Virginia Western's Honors Program provides students with the opportunity to earn optional honors credit in most regular classes. Students taking optional honors credit in classes develop individualized research projects with the approval and guidance of their instructors. Students who wish to participate may sign up for three to nine honors credits per semester. Interested students should contact Counseling (857-7237).

New students with a high school grade point average of 3.0 or higher, or currently enrolled students with the same GPA or higher qualify for participation in VWCC's Honors Program.

Academic Standing

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

ACADEMIC WARNING - Any student who fails a course or 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 Vice President of Academic and Student Affairs or his designee grants special permission. Students usually will be required to carry fewer credits than normal the following semester. Students on academic probation are required to consult with their probation counselors. Students shall be placed on probation only after they have attempted 12 semester credit hours.

ACADEMIC SUSPENSION - Students on academic probation who fail to attain a 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 an appeal in writing to the Chairman of the Admissions Committee for reconsideration of their cases. Suspended students may be readmitted after termination of the suspension period and upon formal written petition to the Chairman of the Admissions Committee.

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. 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.

Faculty are also available for academic advising in the Advising Center located on the ground floor of Fishburn Hall (F027). The Advising Center phone number is 857-6512.

Required Term (Catalog Year) for Graduation

The catalog 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 $1,500. Tuition at a public four-year college in Virginia costs (on average) $3 800 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 bachelor degree programs on Virginia Western's campus in Social Work, Nursing, Accounting, Organizational Business Management, and Criminology for Virginia Western students who have completed relevant AAS degree programs. 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. Copies of Transfer Guides are also available for review in Virginia Western's Transfer Resources Center in the Counseling Office, the Advising Center or on the Internet at http://www.so.cc.va.us/transfer.htm.

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

Some of Virginia Western's articulation agreements with senior institutions guarantee admission to Virginia Western graduates.

Virginia Tech guarantees admission to the College of Engineering to any student who completes Virginia Western's AS degree in Engineering with a GPA of 3.0 or higher.

Radford University guarantees admission into their upper division nursing degree program to students who complete Virginia Western's AS degree in Health Sciences with a GPA of 3.2 or higher.

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.

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.

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
  - Fire Science Track
- Science Major
  - Computer Science Specialization
  - Environmental Science Track
  - Health Sciences Specialization
  - Mathematics Specialization
- Social Sciences Major
  - Education Track

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
- Communication Design Major
- Computer and Electronics Technology Major
- Construction Technology Major
  - Architectural Technology Specialization
  - Civil Engineering Technology Specialization
- Dental Hygiene Major
- Early Childhood Development Major
- Horticulture Technology Major
  - Interior Landscaping/Floriculture Specialization
  - Landscape Specialization
- Information Systems Technology Major
  - Internet Graphics & Programming Specialization
  - Network Specialization
  - Programming and Database Specialization
- Legal Assisting Major
- Management Major
  - Banking and Finance Track
  - Marketing Track
  - Production and Operations Track
  - Real Estate Specialization
- Mechanical Engineering Technology Major
- Mental Health Major
  - Clinical Track and Transfer Track
- Nursing Major
- Radiography Major
- Technical Studies Major
- Veterinary Technology Major

Certificate Programs
- Air Conditioning and Refrigeration
- Architectural Drafting
- Audio and Video Production
- Child Care
- Clerical Studies
- Geographical Information Systems
- Interior Design
- Medical Transcriptionist
- Practical Nursing
- Radiation Oncology
- Surgical Technology
- Welding

Career Studies Programs

- Air Conditioning and Refrigeration
- Architectural/Civil Engineering Aide
- Architectural Drafting
- Building Construction Trades
  - Building Construction Option
  - Electrical Option
  - Fire Protection Systems Option
  - HVAC Option
  - Plumbing Option
- Business Industrial Supervision
- CISCO CCNA & Microsoft MCSA
- CISCO CCNA Networking
- Civil Technology/Surveying
- Computer Graphics and Internet Programming
- Computer Systems Support
- E-Commerce Computer Application Development
- Education Office Assistant
- Electrical Wiring
- Firefighting and Prevention
- Health Records Coding
- Health Technology
  - Pre-Dental Hygiene Option
  - Pre-Nursing Option
  - Pre-Radiography Option
  - Pre-Practical Nursing
  - Pre-Radiation Oncology
  - Pre-Surgical Technology
  - Pre-Veterinary Technology
- Horticulture
  - Floral Design and Indoor Plant Care
  - Landscaping and Outdoor Plant Care
  - Plant Propagation and Production
- Industrial Technology
  - Electrical Option
  - Electronics Option
  - Electromechanical Option
  - Maintenance Option
  - Metal Processing Option
  - Welding Option
- iSeries Studies
- Microcomputer Systems Technology
- .NET and Database Administration
- Network and Database Administration
- 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.

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 to the College President 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.

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.

STD 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 $4,000 per year for tuition and fees, plus an additional $4,500 for room and board. (Tuition at private colleges averages about $14,000 per year.) By comparison, tuition and fees for a full-time student at Virginia Western averages just $1,500 per year. Thus, attending Virginia Western for the first two years of college can result in a savings of over $14,000.
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 (A.A.) or Associate in Science (A.S.) 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
ITE 115	Basic Computer Literacy

Computer Science Courses

CSC 201-202	Computer Science I-II

Health and Physical Education Courses

HLT 110	Concepts of Personal and Community Health
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 201-202	History of Art 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
REL 200	Survey of the Old Testament
REL 210	Survey of the New Testament
REL 230	Religions of the World
SPA 101-102	Beginning Spanish I-II
SPA 201-202	Intermediate Spanish I-II
SPD 130	Introduction to the Theatre

Math Courses

MTH 151-152	Mathematics for the Liberal Arts I-II
MTH 157	Elementary Statistics
MTH 163	Pre-Calculus I
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 287	Mathematical Structures
MTH 291	Differential Equations

Science Courses

BIO 101-102	General Biology I-II
BIO 215	Plant Life of Virginia
BIO 256	General Genetics
BIO 270	General Ecology
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
*GOL 105	Physical Geology
*GOL 106	Historical Geology
GOL 225	Environmental Geology
*NAS 131-132	Astronomy I-II
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

Student Development Course

STD 108	College Survival Skills

* *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.*

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

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

		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 221-222	Intermediate Accounting I-II	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 110[1]	Concepts of Personal and Community Health (or PED Elective)	2
ITE 115	Basic Computer Literacy	3
MKT 100	Principles of Marketing (or BUS 100 or BUS 200)	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SPD 105	Oral Communication (or SPD 100)	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans will be awarded HLT/PED credit based on military service.
[2]Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

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

Spring
ACC 212
ACC 214
BUS 125 or MTH 271
ECO 201
HLT 110 or PED Elective
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 105	The Juvenile Justice System	3
ADJ 107	Survey of Criminology	3
ADJ 120	Introduction to Courts	3
ADJ 130	Introduction to Criminal Law	3
ADJ 227[1]	Constitutional Law for Justice Personnel	3
ADJ 229[1]	Law Enforcement and the Community	3
ADJ 236	Principles of Criminal Investigation	3
ENG 111-112	College Composition I-II	6
HLT 110[2]	Concepts of Personal and Community Health	2
ITE 115	Basic Computer Literacy	3
MTH 120	Introduction to Mathematics	3
PLS 211-212	United States Government I-II	6
PSY 120	Human Relations	3
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
E	Administration of Justice Elective	6
E	Elective	5
E[3]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Career Track Degree		**65**

[1] Prerequisite: ADJ 100.
[2] Veterans will be awarded HLT/PED credit based on military service--contact Admissions Office; criminal justice training/experience may be awarded HLT/PED credit--contact ADJ program head.
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

NOTE: Selection of electives and/or 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.

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 110	MTH 120
ITE 115	SPD 100
STD 108 or STD 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 110[2]	Concepts of Personal and Community Health	2
ITE 115	Basic Computer Literacy	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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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] Veterans will be awarded HLT/PED credit based on military service--contact Admissions Office; criminal justice training/experience may be awarded HLT/PED credit--contact ADJ program head.
[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 Transfer Courses" on page 37.
[5] Four ADJ electives must be taken from the following list:
ADJ 105 Juvenile Justice System
ADJ 107 Survey of Criminology
ADJ 130 Introduction to Criminal Law (Fall only)
ADJ 227 Constitutional Law for Justice Personnel (Spring only)
ADJ 236 Principles of Criminal Investigation (Fall only)

Note: Selection of electives and/or 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.

Suggested Course Sequence

Fall
ADJ 100
ENG 111
ITE 115
PLS 211
STD 108 (or STD 100)
ADJ Elective

Spring
ADJ 120
ENG 112
HLT 110
MTH 157
SOC 200
ADJ Elective

Fall
ADJ 140
PHI 102
SPD 100
ADJ Elective
Laboratory Science Elective

Spring
ADJ 229 (Spring only)
PSY 200
ADJ Elective
Humanities/Fine Arts 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	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	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 110[2]	Concepts of Personal and Community Health (or PED)	2
MTH 120	Introduction to Mathematics (or MTH 163)	3
PSY 120	Human Relations	3
SPD 105	Oral Communication	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans will be awarded HLT/PED credit based on military service.
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
AST 102	AST 141
AST 107	BUS 200
AST 113	BUS 241
AST 140	HLT 110 or PED
ENG 111	PSY 120
MTH 120 or MTH 163	SPD 105
STD 108 or STD 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	3
AST 232	Microcomputer Office Applications	3
AST 238	Advanced Word Processing	3
AST 243-244	Office Administration I-II	6
AST 247	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 110[2]	Concepts of Personal and Community Health (or PED)	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
SPD 105	Oral Communication	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans will be awarded HLT/PED credit based on military service.
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
AST 102	AST 141
AST 107	BUS 200
AST 113	HLT 110 (or PED)
AST 140	LGL 110
ENG 111	PSY 120
MTH 120 (or MTH 163)	SPD 105
STD 108 (or STD 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	3
AST 232	Microcomputer Office Applications	3
AST 238	Advanced Word Processing	3
AST 243-244	Office Administration I-II	6
AST 245	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 110[2]	Concepts of Personal and Community Health (or PED)	2
HLT 143-144	Medical Terminology I-II	6
MTH 120	Introduction to Mathematics (or MTH 163)	3
PSY 120	Human Relations	3
SPD 105	Oral Communication	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans will be awarded HLT/PED credit based on military service.
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
AST 102	AST 141
AST 107	BUS 200
AST 113	HLT 110 (or PED)
AST 140	HLT 144
ENG 111	MTH 120 (or MTH 163)
HLT 143	SPD 105
STD 108 (or STD 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

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 121-122-123-124	Air Conditioning and Refrigeration I-II-III-IV	12
BLD 159	Mechanical Code and Certification Preparation	3
ELE 133-134	Practical Electricity I-II	6
STD 108	College Survival Skills (or STD 100)	1
WEL 120	Fundamentals of Welding	3
REQUIRED COURSES THAT MAY BE TAKEN ANY SEMESTER:		
BUS 165	Small Business Management	3
ENG 101	Practical Writing I	3
E	Social Science Elective	3
Total Minimum Credits for Certificate		**34**

Suggested Course Sequence

Fall	**Spring**
AIR 121	AIR 122
ELE 133	ELE 134
STD 108	
Fall	**Spring**
AIR 123	AIR 124
BLD 159	WEL 120

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 121-122-123-124	Air Conditioning and Refrigeration I-II-III-IV	12
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		**24**

Suggested Course Sequence

Fall	Spring
AIR 121	AIR 122
ELE 133	ELE 134
Fall	**Spring**
AIR 123	AIR 124
BLD 159	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.

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 Technology may earn a baccalaureate degree (BSET) in Engineering Technology after completing an additional two years of full time study. Necessary ODU courses may be taken at the Thomas Center on the Virginia Western Community College campus in Roanoke.

CURRICULUM AND OTHER REQUIREMENTS		Credits
ARC 121	Architectural Drafting I	3
ARC 221	Architectural CAD Applications Software I	3
ARC 255	Construction Estimating	3
CIV 130	Construction Planning	3
CIV 171	Surveying I	3
CIV 225	Soil Mechanics	2
DRF 201-202[1]	Computer Aided Drafting and Design I-II	6
MTH 115	Technical Mathematics I	3
Total Minimum Credits for Certificate		**26**

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

Suggested Course Sequence

Fall	Spring
CIV 130	ARC 121
DRF201	CIV 171
MTH 115	DRF 202
Fall	**Spring**
ARC 221	ARC 255
CIV 225	

Architectural/Civil Engineering Technology

Pending Approval

Associate in Applied Science Degree (XXX)

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, construction materials, and structural design 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 specialty suites such as Architectural and Civil Desktop. Graduates may seek immediate employment or transfer to a Bachelor of Technology programs 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 121	Architecture Drafting I	3
ARC 221	Architectural CAD Applications Software I	3
ARC 255	Construction Estimating	2
CIV 130	Construction Planning	3
CIV 171	Surveying I	3
CIV 225	Soil Mechanics	2
DRF 201-202[3]	Computer Aided Drafting and Design I-II	6
EGR 216	Computer Methods in Engineering and Technology	3
ENG 111	College Composition I	3
GIS 200	Intro. to Geographical Information Systems	4
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
STD 101	Orientation to Engineering and Engineering Technology	1
SPD 100	Prin. of Public Speaking (or SPD 105)	3
E[6]	Civil Engineering Elective	3
E[5]	Humanities/Fine Arts Elective	3
E[2]	Social Science 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. Veterans will awarded HLT/PED credit based on military service.

[2] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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 37.

[6] Must be approved by program head. Elective will be a course involving structural design.

Suggested Course Sequence

Fall	Spring
CIV 130	ARC 100
DRF 201	ARC 121
EGR 216	CIV 171
ENG 111	DRF 202
HLT/PED	MEC 131
MTH 115	MTH 116
STD 101	

Fall	Spring
CIV 225	ARC 255
ARC 221	SPD 100
GIS 200	Civil Engineering Elective
HLT/PED	Humanities/Fine Arts Elective
MEC 132	Social Science Elective
PHY 201	Social Science Elective

Architectural Drafting

PROGRAM INACTIVE
EFFECTIVE SUMMER 2004

Career Studies Certificate (008)

Purpose: This program is designed to prepare students for entry-level positions in drafting or to expand the knowledge and skills of individuals presently employed in the field. This program offers the technical core of the certificate program in Architectural Drafting, without requiring the general education subjects. All of the technical courses offered through this program may be applied toward the certificate in Architectural Drafting.

Occupational Objectives: Entry-level positions in the drafting field.

Curriculum Admission Guidelines: A high school diploma, GED, or the equivalent is recommended.

CURRICULUM AND OTHER REQUIREMENTS		Credits
ARC 111	Introduction to Architectural Drafting I	3
ARC 221	Architectural CAD Applications Software I	3
ARC 255	Construction Estimating	2
CIV 130	Construction Planning	3
DRF 201-202[1]	Computer Aided Drafting and Design I-II	6
MTH 115	Technical Mathematics I	3
E[2]	Approved Technical Elective	2-3
Total Minimum Credits for Certificate		**22**

[1] Students may be awarded credit for DRF 201 based on articulation agreements with several local high schools.
[2] Technical elective to be selected with departmental approval.

Suggested Course Sequence

Fall	Spring
CIV 130	ARC 111
DRF201	DRF 202
MTH 115	
Fall	**Spring**
ARC 221	ARC 255
	Technical Elective

Architectural Drafting

PROGRAM INACTIVE
EFFECTIVE SUMMER 2004

Award: Certificate (930)

Purpose: This program is designed to provide applied technical drafting knowledge and skills with specialization in the field of architectural drafting. The curriculum is primarily intended to train persons for full-time employment. In addition to technical courses, there are supporting courses in communications, mathematics, and social science. These courses serve to broaden the student's general education background and thus better prepare him or her for employment and advancement in this career area. All of the courses offered through this program may be applied toward the AAS degree in Construction Technology (Architectural Specialization).

Occupational Objectives:
Architectural Aide; Architectural Draftsman.

Curriculum Admission Guidelines:
Proficiency in high school English and mathematics (1 unit of Algebra). Developmental courses may be recommended for students with deficiencies in English and mathematics.

CURRICULUM AND OTHER REQUIREMENTS		Credits
ARC 111	Introduction to Architectural Drafting I	3
ARC 221	Architectural CAD Applications Software I	3
ARC 255	Construction Estimating	2
CIV 130	Construction Planning	3
DRF 201-202[3]	Computer Aided Drafting and Design I-II	6
MTH 115	Technical Mathematics I	3
E[1]	Approved Technical Elective	2-3

ADDITIONAL REQUIRED COURSES THAT MAY BE TAKEN ANY SEMESTER:

ENG/SPD	English or Speech	3
E[2]	Social Science Sequence	6
Total Minimum Credits for Certificate		**31**

[1] Technical elective to be selected with departmental approval.
[2] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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.

Suggested Course Sequence

Fall	Spring
CIV 130	ARC 111
DRF 201	DRF 202
MTH 115	ENG/SPD
Fall	**Spring**
ARC 221	ARC 255
Social Science Elective	Elective
	Social Science Elective

Audio and Video Production

Certificate (800)

Purpose: The Certificate in Audio and Video Production is for students anticipating a career in the fields of audio or video production, radio or television broadcasting, or related fields such as advertising or multimedia production. Curriculum students will develop the necessary skills in audio and video production and related subject areas for employment in entry-level production positions. Hands-on training and teamwork approaches are essential to the instructional process.

Occupational Objectives: upon certificate completion students are prepared to enter production, broadcasting, and related industries in a variety of occupations such as camera operator, video photographer, video editor, disc jockey, commercial producer, or copywriter.

Curriculum Admission Guidelines: Each student's English literacy will be assessed by the college and additional course work, if required, will be factored into the planned course of study. Proficiency in keyboarding skills is also required and additional course work may be required of the student to develop the computing skills necessary for curriculum courses.

CURRICULUM AND OTHER REQUIREMENTS		Credits
BCS 110	Fundamentals Of Video Production	4
BCS 115	Audio Production	4
BCS 116	Electronic Media Writing	3
BCS 117	Electronic Journalism	3
BCS 130	Media Performance	3
BCS 140	Introduction To Mass Media	3
BCS 230	Advanced Video Production	4
BCS 290	Electronic Media Internship	1
ENG 111	College Composition I	3
MUS 235	Advanced Recording Techniques	3
E	Humanities or Social Science Elective	3
Total Minimum Credits for Certificate		**34**

Suggested Course Sequence

Fall	Spring
ENG 111	BCS 117
BCS 110	BCS 130
BCS 115	BCS 230
BCS 116	BCS 290
BCS 140	MUS 235
	E

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. Five specializations are available: Electrical, Fire Safety, 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. NICET certification in the fire option.

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**
FIRE PROTECTION SYSTEMS OPTION (04)		
BLD 111	Blueprint Reading and the Building Code	3
FIR 211-212	Automatic Sprinkler System Design I-II	6
FIR 215	Fire Suppression and Detection Systems	3
Total Minimum Credits for Certificate		**12**
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
Total Minimum Credits for Certificate		**14**

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 110[3]	Concepts of Personal and Community Health (or PED Elective)	2
ITE 115	Basic Computer Literacy	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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
E[1]	Science Sequence	8
E[2]	Elective	6
Total Minimum Credits for Degree		**61**

[1] A two-semester sequence of natural science must be chosen from the following: BIO 101-102, CHM 111-112, GOL 105-106, or PHY 201-202.
[2] Electives may be substituted from the "Approved List of Transfer Courses" on page 37.
[3] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit bases on military service.

Suggested Course Sequence

Fall	Spring
ENG 111	ENG 112
HIS 101 or HIS 121	MTH 271 or MTH 176-178
MTH 163 or MTH 175-177	Science Sequence
STD 108 or STD 100	Elective
Science Sequence	

Fall	Spring
ACC 211	ACC 212
ACC 213	ACC 214
ECO 202	ECO 201
ENG 241 or ENG 243	MTH 242 or Elective
HLT 110 or PED Elective	SPD 100
ITE 115	Elective
MTH 241 or Elective	

Business Industrial Supervision

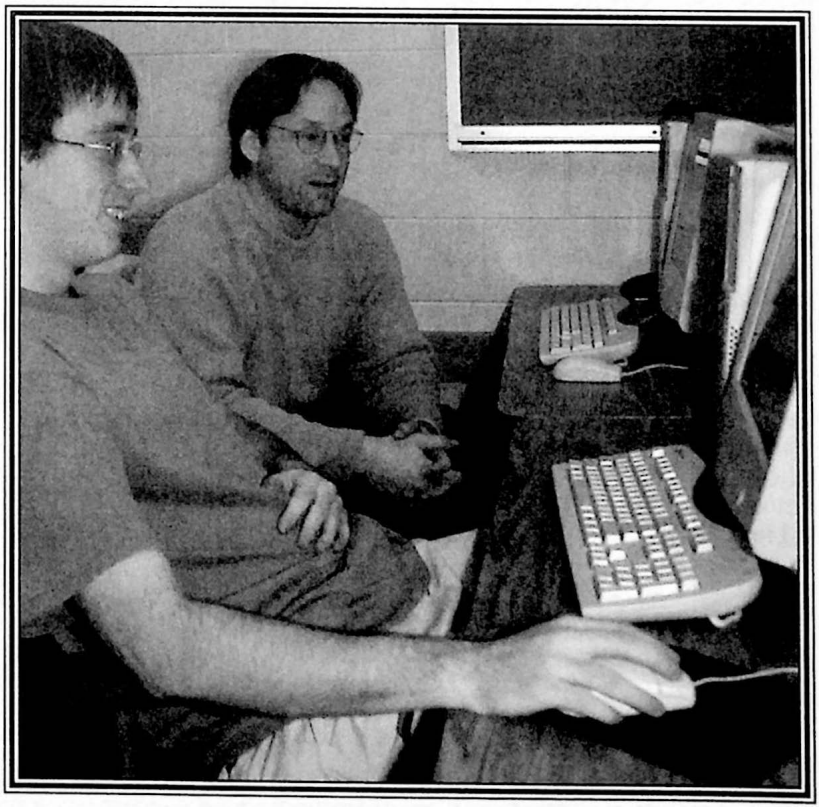
Career Studies Certificate (018)

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	Basic Computer Literacy	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 111	BUS 100
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. Admission to internship (CHD 165, 265) is contingent upon a satisfactory medical examination. The medical form supplied at the beginning of the fall semester must be returned to the program head no later than September 30.

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 and CHD 265 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 165[1]	Observation & Participation in Early Childhood Settings	3
CHD 216	Early Childhood Programs, School, and Social Change	3
CHD 265[1]	Observation & Participation in Early Childhood Settings	3
ENG 111-112	College Composition I (or ENG 101-102)	6
HLT 106[2]	First Aid and Safety	2
HLT 135	Child Health and Nutrition	3
PSY 120	Human Relations	3
PSY 235	Child Psychology	3
STD 108	College Survival Skills (or STD 100)	1
Total Minimum Credits for Certificate		**36**

[1] *Coordinate with CHD 121 and CHD 122/120.*
[2] *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 165 (Fall only)	CHD 265 (Spring only)
ENG 111 or ENG 101	ENG 112 or ENG 102
HLT 106	HLT 135 (Spring only)
PSY 235	PSY 120
STD 108 or STD 100	

CISCO CCNA + Microsoft MCSA

Career Studies (080)

Purpose: The CISCO CCNA + Microsoft MCSA career studies provides an individual with a concentrated background in two critical network administration areas: LAN and WAN network installation and maintenance. This program will prepare the individual for the CISCO CCNA networking as well as the Microsoft MCSA (Microsoft Certified Systems Administrator) 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
ITN 111 (or ITN 115)	Windows 2000 Server (or Windows 2003 Server)	3
ITN 112 (or ITN 243)	Windows 2000 Network Infrastructure (or Windows 2003 Security)	3
ITN 114	Windows XP Professional	3
ITN 212 (or ITN 116)	Managing a Windows 2000 Network Environment (or Managing a Windows 2003 Network Environment)	3
TEL 150	Internetworking I	4
TEL 151	Internetworking II	4
TEL 250	Internetworking III	4
TEL 251	Internetworking IV	4
Total Minimum Credits for Certificate		**28**

Suggested Course Sequence

Fall	Spring
TEL 150	ITN 111 (or ITN 115)
	TEL 151

Fall	Spring
ITN 114	ITN 112 (or ITN 243)
ITN 212 (or ITN 116)	TEL 251
TEL 250	

CISCO CCNA Networking

Career Studies (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

Civil Technology/Surveying

PROGRAM INACTIVE
EFFECTIVE SUMMER 2004

Career Studies Certificate (057)

Purpose: This program is designed to prepare students for entry-level positions in Civil Technology or to expand the knowledge and skills of individuals presently employed in the field. All of the technical courses offered through this program may be applied toward the AAS degree in Construction Technology (Civil Specialization).

Occupational Objectives: Civil Technician, Surveying Aide

Curriculum Admission Guidelines: Proficiency in high school English and 3 units of mathematics (1 unit of algebra). Developmental courses may be recommended for students with deficiencies in English and mathematics.

CURRICULUM AND OTHER REQUIREMENTS		Credits
CIV 130	Construction Planning	3
CIV 171	Surveying I	3
CIV 230	Civil Construction Materials	3
DRF 201-202[1]	Computer Aided Drafting and Design I-II	6
MTH 115	Technical Mathematics I	3
Total Minimum Credits for Certificate		**18**

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

Suggested Course Sequence

Fall	Spring
DRF 201	CIV 171
MTH 115	DRF 202
Fall	**Spring**
CIV 230	CIV 130

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.

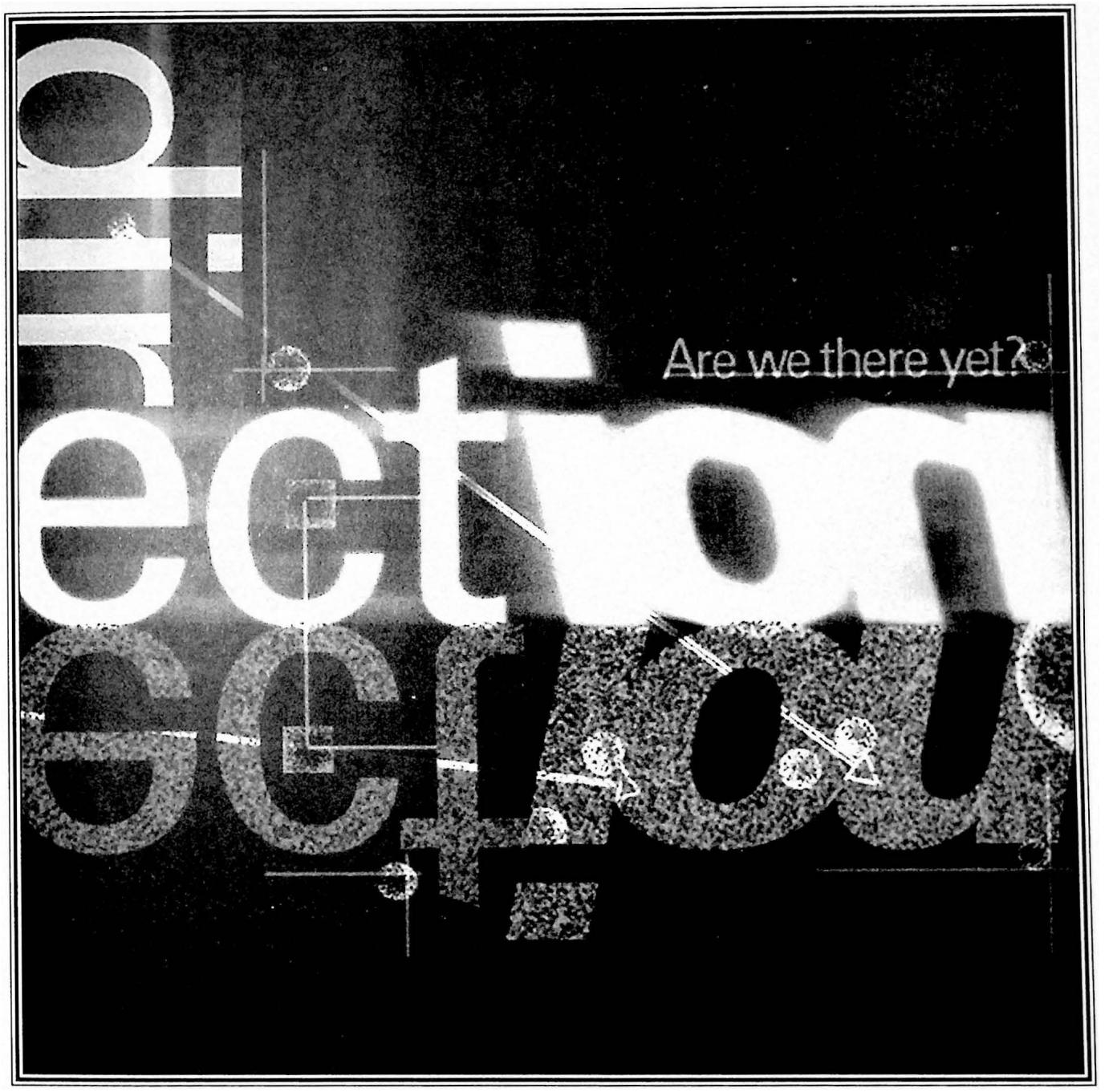
CURRICULUM AND OTHER REQUIREMENTS

		Credits
AST 102[1]	Keyboarding II	3
AST 113	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Windows	1
AST 141	Word Processing I (Microsoft Word)	3
AST 201	Keyboarding III	3
AST 205	Business Communications	3
AST 232	Microcomputer Office Applications	3
AST 238	Advanced Word Processing	3
AST 240	Machine Transcription	3
AST 243-244	Office Administration I-II	6
ENG 101	Practical Writing I	3
STD 108	College Survival Skills (or STD 100)	1
Total Minimum Credits for Certificate		**33**

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

Suggested Course Sequence

Fall	Spring
AST 102	AST 201
AST 113	AST 205
AST 140	AST 232
AST 141	AST 238
AST 243	AST 240
ENG 101	AST 244
STD 108 or STD 100	



Communication Design – Student Work

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 area of digital pre-press. 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.

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,

CURRICULUM AND OTHER REQUIREMENTS		Credits
ART 121-122	Drawing I-II	6
ART 131-132	Fundamentals of Design I-II	6
ART 141	Typography I	3
ART 180[2]	Introduction to Computer Graphics	3
ART 221	Drawing III (Figure Drawing)	3
ART 243	Watercolor I (or ART 241)	3
ART 247	Painting Technique for Illustrators	3
ART 250	History of Design	3
ART 251-252	Communication Design I-II	6
ART 281	Graphic Techniques I	3
ART 283	Computer Graphics I (PhotoShop)	3
ART 284	Computer Graphics II (Digital Illustration)	3
ART 287	Portfolio & Resume Preparation	2
ENG 111	College Composition I	3
HLT 110[3]	Concepts of Personal & Community Health	2
MTH 120[4]	Introduction to Mathematics	3
PHT 101	Photography I	3
SPD 105	Oral Communication (or SPD 100)	3
STD 101[1]	Visual Arts Orientation	1
E[5]	Social Science Elective	6
Total Minimum Credits for Degree		**68**

[1] STD 101 should be taken during the first semester that a student is enrolled in this curriculum.
[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. Veterans 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.

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 STD 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 those listed above. 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.

Suggested Course Sequence

Fall	**Spring**
ART 121	ART 122
ART 131	ART 132
ART 180	ART 141
ART 250	PHT 101
ENG 111	HLT 110
STD 101	MTH 120

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

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 communications.

First-year students receive instruction in mathematics and oral and written communication skills, programming, computer-aided design, and statistical quality control. Advanced courses in the second year provide an in-depth study of digital and analog systems found in networks, communications, computers, and machines.

Transfer: Transfer opportunities in engineering technology exist for those desiring to complete a four-year program at certain institutions. Students can transfer directly to the Old Dominion University baccalaureate degree (BS) program in Engineering Technology on the Virginia Western campus.

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	D.C. and A.C. Fundamentals I	4
ETR 114	D.C. and A.C. Fundamentals II	4
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
SPD 100	Principles of Public Speaking (or SPD 105)	3
STD 108	College Survival Skills (or STD 100)	1
TEL 150	Internetworking I	4
TEL 151	Internetworking II	4
E[1]	Humanities/Fine Arts Elective	3
E[2]	Industrial/Technical Elective	4
E[3]	Social Science Electives	6
Total Minimum Credits for Degree		**69**

[1] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.
[2] Industrial elective - Students should choose from either DRF 201 or IND 230. Students may be awarded credit for DRF 201 based on articulation agreements with several local high schools. Technical elective - Students may choose from ETR 241, ETR 285, TEL 250, or TEL 251.
[3] Social science electives must be selected from the "Approved List of Transfer Courses on page 37." 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. Veterans will be awarded HLT/PED credit based on military credit.
[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.

Suggested Day Course Sequence

Fall	Spring
EGR 216	ELE 147
ENG 111	ETR 114
ETR 113	MTH 116
MTH 115	TEL 151
STD 108 or STD 100	Humanities/Fine Arts Elective
TEL 150	

Fall	Spring
ETR 255	ELE 239
ETR 281	ETR 261
PHY 201	HLT/PED
Industrial/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.

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

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
ART 180	Introduction to Computer Graphics	3
ITE 101	Introduction to Microcomputers	1
ITD 136	Database Management Software	4
ITD 110	Web Page Design I	3
ITD 210	Web Design II	3
ITP 120	Java Programming I (or ITP 112)	4
ITP 246	Server-Side Java (or ITP 244)	4
ITP 220	Java Programming II (or ITP 212)	4
ITP 298	Capstone	3
Total Minimum Credits for Certificate		**29**

Suggested Course Sequence

Fall	**Spring**
ITD 110	ART 180
ITE 101	ITD 136
ITP 120 or ITP 112	ITP 220 or ITP 212
Fall	**Spring**
ITP 246 or ITP 244	ITD 210
	ITP 298

Computer Systems Support

Career Studies Certificate (071)

Occupational Objectives: This program is designed to provide students with the skills and knowledge necessary to obtain a job in computer support systems. The curriculum includes word processing and spreadsheet applications, web design and graphics, networking, and an introduction to computer repair. Graduates would be qualified for entry-level employment in help desk and workstation support positions.

Recommended Preparation: The student should possess a proficiency in high school English, high school algebra and geometry, and computer keyboarding skills.

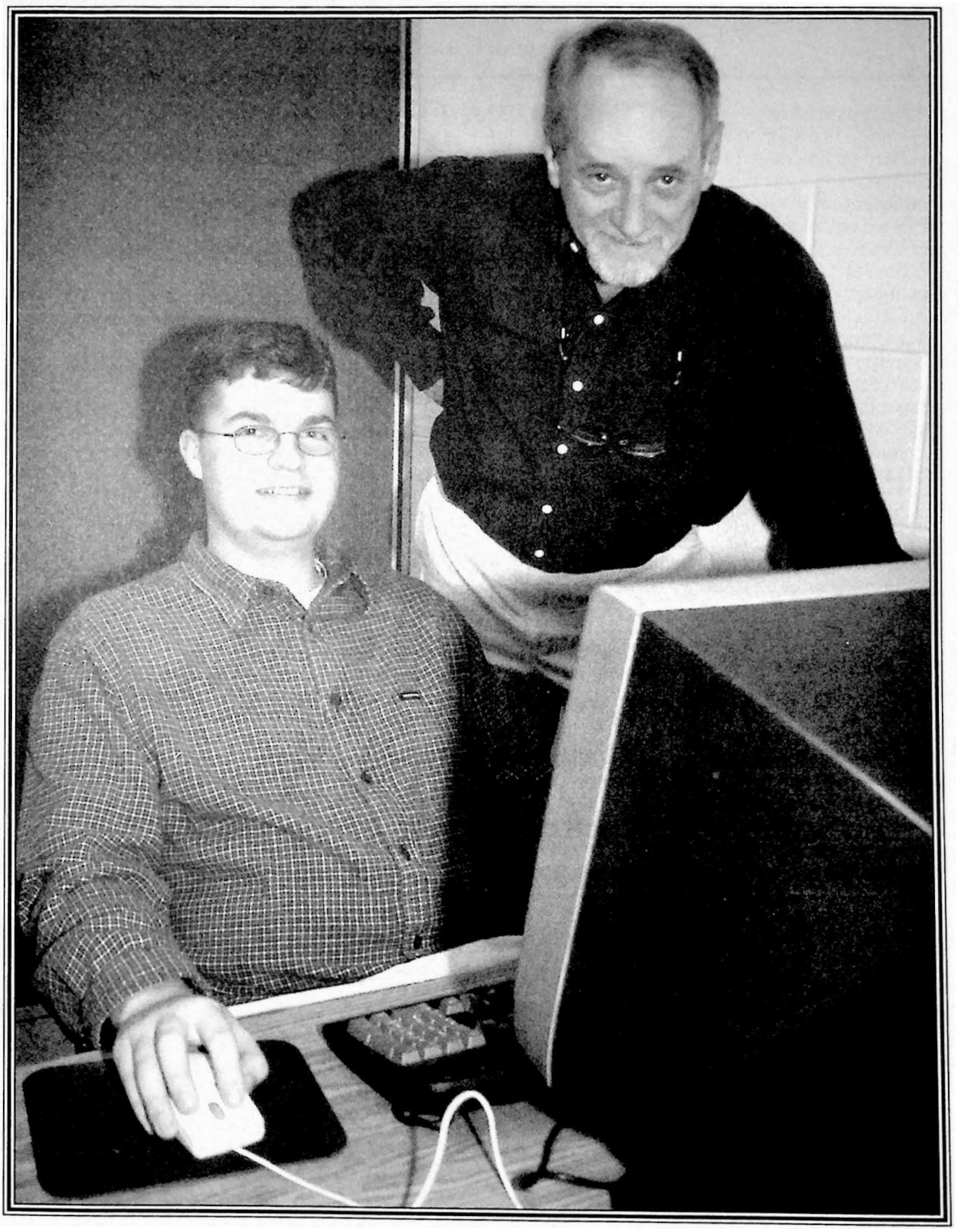
CURRICULUM AND OTHER REQUIREMENTS

		Credits
AST 141	Word Processing I	3
AST 205	Business Communications	3
BUS 100	Introduction to Business	3
ETR 285	Fundamentals of Microcomputer Repair	4
ITD 110	Web Page Design I	3
ITE 115	Basic Computer Literacy	3
ITE 140	Spreadsheet Software	3
ITN 101	Introduction to Network Concepts	4
ITP 298	Capstone	3
Total Minimum Credits for Certificate		**29**

Suggested Course Sequence

Fall	Spring
BUS 100	AST 141
ITE 115	ETR 285
	ITE 140

Fall	Spring
AST 205	ITD 110
ITN 101	ITP 298



Construction Technology

PROGRAM INACTIVE
EFFECTIVE SUMMER 2004

Associate in Applied Science Degree (725)

Purpose: The Construction Technology option is designed to prepare qualified technicians for career opportunities in civil and architectural technology by exposing the student to the main areas of these professions. Courses in construction planning, estimating, surveying, construction materials, architectural drafting, and structural design 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 specialty suites such as Architectural and Civil Desktop. Graduates may seek immediate employment or transfer to a Bachelor of Technology programs at certain four-year colleges and universities.

Occupational Objectives: The Civil Engineering and Architectural Technician serve as liaisons between the craftsperson and the Engineer. Opportunities include employment with consulting engineers and architects, general contractors, land surveyors, and government organizations such as the Virginia Department of Transportation (VDOT). Opportunities also exist in construction related manufacturing fields such as prefabricated buildings, steel fabrication, and precast/prestressed concrete production.

CURRICULUM AND OTHER REQUIREMENTS		Credits
CORE REQUIREMENTS		
CIV 130	Construction Planning	3
DRF 201[3]	Computer Aided Drafting & Design I	3
EGR 216	Computer Methods in Engineering & Technology	3
ENG 111	College Composition I	3
HLT/PED[1]	Health or Physical Education	1
MTH 115	Technical Mathematics I	3
STD 108	College Survival Skills (or STD 100)	1
ARCHITECTURAL TECHNOLOGY SPECIALIZATION (01)		
ARC 100	Introduction to Architecture	3
ARC 111	Introduction to Architectural Drafting I	3
ARC 221	Architectural CAD Applications Software I	3
ARC 255	Construction Estimating	2
CIV 171	Surveying I	3
CIV 210	Design of Structural Systems	4
DRF 202	Computer Aided Drafting and Design II	3
HLT/PED[1]	Health or Physical Education	1
MEC 131	Mechanics I - Statics for Engineering Technology	3
MEC 132	Mechanics II - Strength of Materials for Engineering Technology	3
MTH 116	Technical Mathematics II	3
PHY 201	General College Physics I	4
SPD 100	Principles of Public Speaking (or SPD 105)	3
E[2]	Social Science Elective	6
E[4]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**64**

Suggested Course Sequence

Fall	Spring
CIV 130	ARC 100
DRF 201	ARC 111
EGR 216	CIV 171
ENG 111	DRF 202
HLT/PED	MEC 131
MTH 115	MTH 116
STD 108 or STD 100	

Fall	Spring
ARC 221	ARC 255
HLT/PED	CIV 210
MEC 132	Humanities/Fine Arts Elective
PHY 201	SPD 100 or SPD 105
Social Science Elective	Social Science Elective

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 Construction Technology with a Civil Engineering Specialization may earn a baccalaureate degree (BS) in Engineering Technology on the Virginia Western Community College campus in Roanoke.

CURRICULUM AND OTHER REQUIREMENTS — Credits

CIVIL ENGINEERING TECHNOLOGY SPECIALIZATION (02)

ARC 221	Architectural CAD Applications Software I	3
ARC 255	Construction Estimating	2
CIV 171	Surveying I	3
CIV 210	Design of Structural Systems	4
CIV 230	Civil Construction Materials	3
DRF 202	Computer Aided Drafting and Design II	3
HLT/PED[1]	Health or Physical Education	1
IND 230	Applied Quality Control	3
MEC 131	Mechanics I-Statics for Engineering Technology	3
MEC 132	Mechanics II-Strength of Materials for Engineering Technology	3
MTH 116	Technical Mathematics II	3
PHY 201	General College Physics I	4
SPD 100	Principles of Public Speaking (or SPD 105)	3
E[2]	Social Science Elective	6
E[4]	Humanities/Fine Arts Elective	3

Total Minimum Credits for Degree **64**

[1] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.
[2] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	**Spring**
CIV 130	CIV 171
DRF 201	DRF 202
EGR 216	HLT/PED
ENG 111	MEC 131
HLT/PED	MTH 116
MTH 115	SPD 100 or SPD 105
STD 108 or STD 100	

Fall	**Spring**
ARC 221	ARC 255
CIV 230	CIV 210
MEC 132	IND 230
PHY 201	E
E	Humanities/Fine Arts 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) Four units of high school English
(b) One unit each of high school or college biology and chemistry
(c) Two units of high school or college social studies; and
(d) Algebra II or college equivalent. A grade of C or better is necessary in required high school/college units of math and science.

The applicant's high school or college (if applicable) cumulative grade point average (GPA) must be at least 2.5 and is based on 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 or who have completed fewer than 45 quarter hours or 30 semester hours of college work 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. Applicants who graduated from high school more than five (5) years prior to date of application who have not attempted any college work will not be required to submit SAT/ACT scores. All applicants must take the HOBET Test.

Admission Procedures: The Dental Hygiene program is open to qualified male or female applicants. Early application is advisable due to the limited number of positions in the program. 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.

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), results of the HOBET (Health Occupation Basic Entrance Test) taken at the student's expense and non-refundable, two letters of recommendation from employers/ former teachers using the format provided by VWCC, and an essay related to the candidate's reason for making Dental Hygiene their career choice. It is mandatory that applicants submit official high school transcripts, GED, and **all** official college transcripts in one envelope to the VWCC Health Technology Information Office. 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 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, the kit is 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
SPD 100[3]	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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 Transfer Courses" on page 37.

Required Course Sequence*

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

Summer
BIO 142
DNH 130
DNH 150
DNH 190

Spring – Second Year
DNH 227
DNH 230
DNH 245
ITE 102
Humanities/Fine Arts Elective
SPD 100

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

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

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

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 9i, SQL Server 2000, and DB2. A student needs to decide whether they want to specialize on the Microsoft or SUN Java platform when they begin the program.

Java: choose ITP 120, 220, 246, and 248
VB.NET: choose ITP 112, 212, 244, and 298

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
BUS 100	Introduction to Business	3
ITD 110	Web Page Design I	3
ITD 136	Database Management Software	4
ITE 101	Introduction to Microcomputers	1
ITE 160	Introduction to e-Commerce	3
ITP 120	Java Programming I (or ITP 112)	4
ITP 220	Java Programming II (or ITP 212)	4
ITP 246	Server-Side Java (or ITP 244)	4
ITP 248	E-Commerce Application Integration (or ITP 298)	3
Total Minimum Credits for Certificate		**29**

Suggested Course Sequence

Fall	Spring
BUS 100	ITD 110
ITE 101	ITD 136
ITP 120 or ITP 112	ITP 220 or ITP 212
Fall	**Spring**
ITE 160	ITP 248 or ITP 298
ITP 246 or ITP 244	

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. This curriculum will prepare students for national assessment for the Child Development Associate. 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 Staff.

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. Admission to internship (CHD 165,

CURRICULUM AND OTHER REQUIREMENTS		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[4]	Guiding the Behavior of Young Children	3
CHD 210[4]	Introduction to Exceptional Children	3
CHD 216	Early Childhood Programs, School, & Social Change	3
CHD 265[1]	Observation & Participation in Early Childhood Settings	3
CHD 270[4]	Administration of Early Childhood Educational Programs	3
ENG 111-112[2]	College Composition I (or ENG 101-102)	6
HLT 106	First Aid and Safety	2
HLT 135	Child Health and Nutrition	3
ITE 115	Basic Computer Literacy	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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
E[3]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**66**

[1] Coordinate with CHD 121 and CHD 122/120.
[2] Students planning to transfer should take English 111-112.
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.
[4] May be taken only after completing CHD 121, CHD 122, CHD 165 and CHD 265 or with permission of instructor.

CHD 265) is contingent upon a satisfactory medical examination. The medical form supplied at the beginning of the fall semester must be returned to the Early Childhood Development Program Head no later than September 30.

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.)

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.

Radford University Bachelor Degree Program: The Early Childhood Development program at Virginia Western Community College and the Human Development program at Radford University have a formal articulation agreement. Any student completing the A.A.S. degree with a 2.0 GPA or above is eligible to transfer to the B.S./B.A. program at Radford. All coursework from the A.A.S. degree for which the student has earned a minimum of a C is accepted for transfer. The Human Development degree at Radford University requires completion of 120 semester credits; 78 credits may be transferred from Virginia Western. Please see the Program Head at Virginia Western for further information.

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 165 (Fall only)	CHD 265 (Spring only)
ENG 111 or ENG 101	HLT 135 (Spring only)
PSY 235	ENG 112 or ENG 102
STD 108 or STD 100	PSY 120

Fall	Spring
CHD 210 (Fall only)	CHD 126 (Spring only)
CHD 270 (Fall only)	CHD 166 or CHD 118 (Spring only)
HLT 106	CHD 205 (Spring only)
MTH 120 or MTH 151	ITE 115
SPD 100	SOC 215 (Spring only)
Humanities/Fine Arts Elective	

Education Office Assistant

Career Studies Certificate (020)

Purpose: Designed for those employed as educational secretary. Provides general office and educational training.

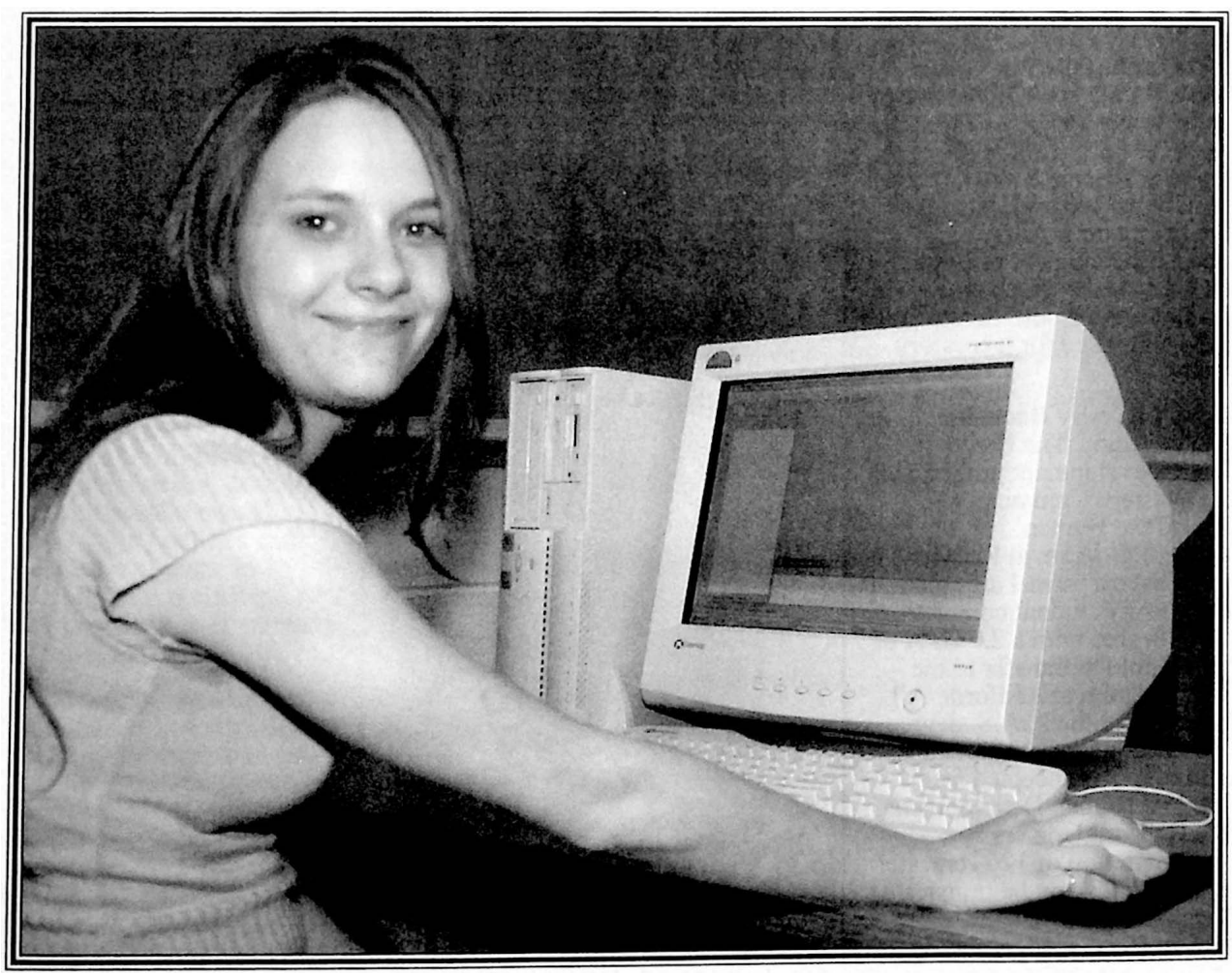
Prerequisite: Typing speed of 45 wpm or appropriate Keyboarding course.

CURRICULUM AND OTHER REQUIREMENTS		Credits
AST 141	Word Processing I (Microsoft Word)	3
ITE 115	Basic Computer Literacy	3
PSY 120	Human Relations	3
E[1]	AST Elective	6
E[2]	Elective	6
Total Minimum Credits for Career Studies Certificate		**21**

[1] AST elective to be selected with departmental approval.
[2] Elective to be selected with departmental approval.

Suggested Course Sequence

Fall	Spring
PSY 120	AST 141
AST Elective	ITE 115
Elective	AST Elective
	Elective



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-II	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

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 humankind. These problems typically are multifaceted and involve the interplay of technological, economic, environmental, sociological, and political components. For this reason, the engineer requires a background in the humanities and social sciences as well as in mathematics and natural sciences.

The Associate 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 111-112	College Chemistry I-II	8
EGR 115	Engineering Graphics	2
EGR 124	Introduction to Engineering and Engineering Methods	3
EGR 126	Computer Programming for Engineers [C++] (or EGR 127)	2-3
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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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		**70**

[1] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.
[2] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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 37. However, students should consult with an advisor before making any selections.
[4] Students must select a course from the following list: CHM-241/245, CHM 242/246, EGR-206, EGR-245, EGR-246, EGR-251, EGR-268 and MTH 287.

Suggested Course Sequence

Fall	**Spring**
CHM 111	CHM 112
EGR 115	EGR 126 or EGR 127
EGR 124	EGR 140
ENG 111	ENG 112
MTH 175	MTH 176
MTH 177	MTH 178
STD 108 or STD 100	

Fall	**Spring**
MTH 277	HLT/PED
PHY 241	MTH 291
Engineering Science Elective	PHY 242
Humanities/Fine Arts Elective	SPD 100
Social Science Elective	Engineering Science Elective
	Social Science Elective

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. Students must be certified EMTs upon graduation.

CURRICULUM AND OTHER REQUIREMENTS		Credits
EMT 111-112	Emergency Medical Technology I-II	6
ENG 111	English Composition	3
FIR 105	Fire Suppression Operations	3
FIR 112	Fundamentals of Hazardous Materials	3
FIR 140	Fire Officer I	4
FIR 238	Emergency Service Administration	3
ITE 115	Basic Computer Literacy	3
PSY 200	Principles of Psychology	3
Total Minimum Credits for Certificate		**28**

Suggested Course Sequence

Fall	Spring
ENG 111	EMT 111
FIR 105	FIR 112
PSY 200	FIR 140

Fall
EMT 112
FIR 238
ITE 115

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 110[8]	Concepts of Personal and Community Health (or PED)	2
ITE 115	Basic Computer Literacy	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
SPD 100	Principles of Public Speaking (or SPD 105)	3
STD 108	College Survival Skills (or STD 100)	1
E[1]	Social Science Electives	6
E[3]	Laboratory Science Sequence	8
E[4]	Transfer Electives	9
E[7]	Humanities/Fine Arts Electives	6
Total Minimum Credits for Degree		**62**

[1] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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.

[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 37. The completion of a two-semester sequence of MTH 151-152 or MTH 163-271 is recommended for transfer to most four-year colleges. 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 37. 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 Transfer Courses" on page 37. 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. Veterans will be awarded HLT/PED credit based on military service.

Suggested Course Sequence

Fall
ENG 111
ITE 115
MTH 151 or MTH 163
STD 108 or STD 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 110 or PED
Humanities/Fine Arts Elective
Transfer Elective

General Studies

Associate in Science Degree (699)

Purpose: The curriculum is specifically designed for professional fire safety personnel who want to transfer to Radford University and earn a Bachelor of General Studies (BGS) Degree. Radford's program requires 120 credit hours. As the result of an articulation agreement between the two institutions, students can earn 62 of the 120 credits required by Radford by completing the Fire Science Track (FST) in Virginia Western's AS degree program in General Studies. All but four of the courses in the FST program are general education courses that are readily accepted by most four-year colleges and universities. Although the four fire science courses in the FST program are not generally recognized as transfer courses, Radford University has agreed to accept the courses for students pursuing the BGS degree that is covered in the fire science articulation agreement.

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.

FIRE SCIENCE TRACK (01)

CURRICULUM AND OTHER REQUIREMENTS		Credits
ENG 111-112	College Composition I-II	6
ENG 241-242[3]	Survey of American Literature I-II **OR**	
ENG 243-244	Survey of English Literature I-II	6
FIR 105	Fire Suppression Operations	3
FIR 112	Fundamentals of Hazardous Materials I	3
FIR 140	Fire Officer I	4
FIR 238	Emergency Service Administration	3
HIS 101-102[4]	History of Western Civilization I-II (or HIS 121-122)	6
HLT 110[6]	Concepts of Personal and Community Health (or PED)	2
ITE 115	Basic Computer Literacy	3
MTH 157	Elementary Statistics (or MTH 151)	3
SPD 100	Principles of Public Speaking (or SPD 105)	3
STD 108	College Survival Skills (or STD 100)	1
E[1]	Social Science Elective	6
E[2]	Natural Science Sequence	8
E[5]	Humanities/Fine Arts Elective	6
Total Minimum Credits for Degree		**63**

[1] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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.

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

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

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

[5] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37. A two-semester sequence of the same course is recommended for transfer to most four-year institutions.

[6] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service. EMT certification will substitute for this requirement.

Suggested Course Sequence

Fall	**Spring**
ENG 111	ENG 112
FIR 105	FIR 112
ITE 115	MTH 157 or MTH 151
STD 108 (or STD 100)	Social Science Elective
Social Science Elective	Natural Science Sequence
Natural Science Sequence	

Fall	**Spring**
ENG 241 or ENG 243	ENG 242 or ENG 244
FIR 140	FIR 238
HIS 101 or HIS 121	HIS 102 or HIS 122
SPD 100 or SPD 105	HLT 110 or PED
Humanities/Fine Arts Elective	Humanities/Fine Arts Elective

Geographical Information Systems

Pending Approval

Certificate (XXX)

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	Computer Aided Drafting & Design I-II	6
ENG 115	Technical Writing	3
GIS 200-201	Geographical Information Systems I-II	8
ITD 136	Database Management Software	4
ITE 115	Basic Computer Literacy	3
ITP 112	Visual Basic .NET I	4
MTH 115-116	Technical Mathematics I-II	6
E[2]	Technical Electives	6
Total Credits for Certificate		**40**

[1] Students may be awarded credit for DRF 201 based on articulation agreements with several local high schools.
[2] Recommended electives may be selected for the following: ARC 221, DRF 203, GEO 20, GEO 210, GOL 105, or ITP 212.

Suggested Course Sequence

Fall	**Spring**
ITE 115	ITD 136
DRF 201[1]	DRF 202
MTH 115	MTH 116
Fall	**Spring**
GIS 200	GIS 201
ITP 112	E[2] Technical Elective
ENG 115	E[2] Technical Elective

Health Records Coding

Career Studies (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.

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 113	Keyboarding for Speed and Accuracy	1
AST 243	Office Administration I	3
HIT 253[2]	Health Records Coding	4
HIT 254[3]	Advanced Coding and Reimbursements	3
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]	Health Information Technology 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] Must be approved by AST Program Head.

Suggested Course Sequence

Fall
AST 102
AST 113
AST 243
HLT 143

Spring
HLT 144
HIT 253
PSY 120

Fall
HIT 254
HIT 290
HIT Elective

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 AND OTHER REQUIREMENTS		Credits
HEALTH TECHNOLOGY CORE FOR AAS DEGREE PROGRAMS		
ENG 111	College Composition I	3
HLT 143[1]	Medical Terminology I	3
ITE 102[3]	Computer and Info. Systems (or ITP 190)	1
PSY 230[4]	Developmental Psychology	3
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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)		
ENG 111	College Composition I	3
HLT 143	Medical Terminology I	3
ITE 102[3]	Computer and Info. Systems (or ITP 190)	1
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
BIO 101	General Biology I	4
PSY 200	Introduction to Psychology	3
Total Credits for Certificate		**18**
PRE-RADIATION ONCOLOGY OPTION (05)		
ENG 111	College Composition I	3
HLT 143	Medical Terminology I	3
ITE 102	Computer and Info. Systems (or ITP 190)	1
STD 108	College Survival Skills (or STD 100)	1
MTH 163	Pre-calculus	3
E[5]	Social Science Elective	3
E[5]	Humanities/Fine Arts Elective	3
Total Credits for Certificate		**17**

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.

DISTANCE LEARNING OPTIONS

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

ENG 111	College Composition I (or ENG 101)	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
STD 100	Orientation	1
Total Credits for Certificate		**21**

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

ENG 111	College Composition I	3
ITE 115	Basic Computer Literacy	3
CHM 111	College Chemistry I	4
E[5]	Social Science Elective	3
E[5]	Humanities/Fine Arts Elective	3
STD 108	College Survival Skills (or STD 100)	1
HLT/PED	Health or Physical Education	2
PSY 200	Introduction to Psychology	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.
[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 37; however, PSY 200 is the preferred choice for Radiography.
[5] Social science and Humanities/Fine Arts electives must be selected from the "Approved List of Transfer Courses" on page 37.

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. Three short programs, Floral Design and Indoor Plant Care, Landscaping and Outdoor Plant Care, and Plant Propagation and Production 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

INTERIOR LANDSCAPING/FLORICULTURE SPECIALIZATION (02)

		Credits
BUS 165	Small Business Management	3
ENG 101-102[1]	Practical Writing I-II	6
HLT/PED[3]	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	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	Basic Computer Literacy	3
MKT 100	Principles of Marketing (or MKT 110)	3
MTH 120	Introduction to Mathematics	3
STD 108	College Survival Skills (or STD 100)	1
E[2]	Social Science Elective	6
E	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**65**

[1] ENG 111 and SPD 100 may be substituted for ENG 101-102. Students planning to transfer should take ENG 111, SPD 100 and ENG 112 in place of ENG 101-102 and general elective.
[2] 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.
[3] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.

Suggested Course Sequence

Fall	**Spring**
ENG 101	ENG 102
HLT/PED	HLT/PED
HRT 110 (Fall only)	HRT 127 (Spring only)
HRT 247 (Fall only)	HRT 236 (Spring only)
MTH 120	ITE 115
STD 108 (or STD 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

LANDSCAPE SPECIALIZATION (01)

		Credits
BUS 165	Small Business Management	3
ENG 101-102[1]	Practical Writing I-II	6
HLT/PED[3]	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	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	Basic Computer Literacy	3
MKT 100	Principles of Marketing (or MKT 110)	3
MTH 120	Introduction to Mathematics	3
STD 108	College Survival Skills (or STD 100)	1
E[2]	Social Science Elective	6
E	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**65**

[1] ENG 111 and SPD 100 may be substituted for ENG 101-102. Students planning to transfer should take ENG 111, SPD 100 and ENG 112 in place of ENG 101-102 and general elective.
[2] 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.
[3] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.

Suggested Course Sequence

Fall	Spring
ENG 101	ENG 102
HLT/PED	HLT/PED
HRT 110 (Fall only)	HRT 127 (Spring only)
HRT 201 (Fall only)	HRT 202 (Spring only)
MTH 120	ITE 115
STD 108 (or STD 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	Professional Floral Design and Shop Management	3
HRT 267	Silk and Dried Flower Arranging	2
E[1]	Horticultural Elective	3
Total Minimum Credits for Certificate		**18**

[1] *To be selected with departmental approval.*

Suggested Course Sequence

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

Horticulture - Landscaping and Outdoor Plant Care

Career Studies Certificate (014)

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

Occupational Objectives:
Landscape designer, landscape technician.

Curriculum Admission Guidelines:
Student must meet the general requirements for admission to the college.

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

Suggested Course Sequence

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

Horticulture - Plant Propagation and Production

Career Studies Certificate (010)

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

Occupational Objective: Assistant grower, wholesale and retail salesperson, production technician.

Curriculum Admission Guidelines: Student must meet the general requirements for admission to the college.

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

[1] *To be selected with departmental approval.*

Suggested Course Sequence

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

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
Total Minimum Credits for Certificate		**13**
	ELECTRONICS OPTION (02)	
ETR 113	D.C. & A.C. Fundamentals I	4
ETR 123	Electronics Applications I	1
ETR 141-142	Electronics I-II	6
Total Minimum Credits for Certificate		**11**
	ELECTROMECHANICAL OPTION (06)	
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 OPTION (04)	
DRF 161	Blueprint Reading I	2
IND 230	Applied Quality Control	3
MAC 131	Machine Lab I	3
MEC 119	Introduction to Basic CNC and CAM	3
WEL 120	Fundamentals of Welding	3
WEL 145	Welding Metallurgy	3
Total Minimum Credits for Certificate		**17**
	WELDING OPTION (05)	
DRF 161	Blueprint Reading I	2
MAC 131	Machine Lab I	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		**15**

Information Systems Technology

Associate in Applied Science Degree (299)

Purpose: This curriculum is designed for persons who will seek employment in the computer information field in business or industry.

Occupational Objectives: Computer Programmer or Trainee, with a career track toward Analyst or Project Leader.

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 202	Microeconomics	3
ECO 201[3]	Macroeconomics	3
ENG 111	College Composition I	3
ITD 110	Web Page Design I	3
ITD 136	Database Management Software	4
ITE 101	Introduction to Microcomputers	1
ITN 101	Introduction to Network Concepts	4
ITN 171	Unix I (or ITN 170 Linux Administration)	3
ITP 112	Visual Basic .NET I	4
ITP 120	Java Programming I	4
ITP 175	Concept of Programming Languages	3
ITP 220	Java Programming II (or ITP 212)	4
ITP 246	Server Side Java (or ITP 244)	4
ITP 248	E-Commerce Application (or ITP 298)	3
MTH 141	Business Math	3
SPD 105	Oral Communications	3
STD 108	College Survival Skills	1
E[1]	Health or PED Elective	2
E[2]	Information System Technology Electives	7
E[4]	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. Veterans will be awarded HLT/PED credit based on military service.*
[2] *May include ACC 212, 214 or other business class.*
[3] *May substitute approved social science elective.*
[4] *Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.*

Suggested Course Sequence

Fall	Spring
ACC 211	ECO 202
ACC 213	ENG 111
ITD 110	ITD 136
ITE 101	ITP 112 or ITP 120
ITP 120 or ITP 112	ITP 220 or ITP 212
MTH 141	
STD 108	
Health or PED Elective	

Fall	**Spring**
ITP 175	ITN 171 (or ITN 170)
ITP 246 or ITP 244	ITP 248 or ITP 298
ECO 201	Health or PED Elective
ITN 101	Info Sys Tech Electives
SPD 105	Humanities/Fine Arts Elective

INFORMATION SYSTEMS TECHNOLOGY PROGRAMMING AND DATABASE SPECIALIZATION (01)

CURRICULUM AND OTHER REQUIREMENTS

		Credits
ECO 202	Microeconomics	3
ECO 201[2]	Macroeconomics	3
ENG 111	College Composition I	3
ITD 110	Web Page Design I	3
ITD 136	Database Management Software	4
ITD 250	Database Architecture & Administration	3
ITD 258	Database Performance and Tuning	3
ITE 101	Introduction to Microcomputers	1
ITN 101	Introduction to Network Concepts	4
ITN 171	UNIX I (or IT J 170)	3
ITP 112	Visual Basic .NET I	4
ITP 120	Java Programming I	4
ITP 132	C++ Programming I	3
ITP 175	Concepts of Programming Languages	3
ITP 220	Java Programming II (or ITP 212)	4
ITP 246	Server-Side Java (or ITP 244)	4
ITP 248	E-Commerce Application Integration (or ITP (298)	3
MTH 141	Business Math	3
SPD 105	Oral Communications	3
STD 108	College Survival Skills	1
E[1]	Health or PED Elective	2
E[3]	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. Veterans will be awarded HLT/PED credit based on military service.
[2] May substitute approved social science elective
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
ENG 111	ECO 202
ITD 110	ITN 101
ITD 136	ITP 112 or ITP 120
ITE 101	ITP 220 or ITP 212
ITP 120 or ITP 112	MTH 141
STD 108	
Fall	**Spring**
ECO 201	ITD 250
ITD 258	ITN 171 or ITN 170
ITP 175	ITP 132
ITP 246 or ITP 244	ITP 248 or ITP 298
SPD 105	Health or PED Electives
	Humanities/Fine Arts Elective

INFORMATION SYSTEMS TECHNOLOGY NETWORK SPECIALIZATION (02)

CURRICULUM AND OTHER REQUIREMENTS

		Credits
ECO 202	Microeconomics	3
ECO 201[2]	Macroeconomics	3
ENG 111	College Composition I	3
ITD 110	Web Design I	3
ITD 136	Database Management Software	4
ITD 250	Database Architecture & Administration	3
ITD 258	Database Performance and Tuning	3
ITE 101	Introduction to Microcomputers	1
ITN 101	Introduction to Network Concepts	4
ITN 114	Windows XP Professional	3
ITN 115	Windows 2003 Server	3
ITN 116	Windows 2003 Infrastructure Mgmt.	3
ITN 117	Windows 2003 Infrastructure Planning	3
ITN 171	UNIX I (or ITN 170)	3
ITP 120	Java Programming I (or ITP 112)	4
ITP 298	Capstone	3
MTH 141	Business Math	3
SPD 105	Oral Communications	3
STD 108	College Survival Skills	1
E[1]	Health or PED Elective	2
E[3]	Humanities/Fine Arts Elective	3
E	Information Systems Elective	7
Total Minimum Credits for Degree		**68**

[1] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.
[2] May substitute approved social science elective.
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
ITN 101	ECO 202
ITD 110	ITD 136
ITE 101	ITN 115
ITP 120 or ITP 112	ITN 114
MTH 141	ENG 111
STD 108	Health or PED Elective
Fall	**Spring**
ITN 116	ITP 298
ITD 258	ITN 117
ECO 201	Health or PED Elective
ITN 171 or ITN 170	Humanities/Fine Arts Elective
SPD 105	Info Sys Tech Elective
ITD 250	

INFORMATION SYSTEMS TECHNOLOGY INTERNET GRAPHICS AND PROGRAMMING SPECIALIZATION (03)

CURRICULUM AND OTHER REQUIREMENTS

		Credits
ACC 211	Principles of Accounting I	3
ACC 213	Prin. of Accounting Lab I	1
ART 180	Introduction to Computer Graphics	3
ART 283	Computer Graphics I	3
ECO 202	Microeconomics	3
ECO 201[2]	Macroeconomics	3
ENG 111	College Composition I	3
ITD 110	Web Design I	3
ITD 136	Database Management Software	4
ITD 210	Web Page Design II	3
ITD 220	E-Commerce Administration (or ITN 171)	3
ITE 101	Introduction to Microcomputers	1
ITN 101	Introduction to Network Concepts	4
ITP 112	Visual Basic .NET I	4
ITP 120	Java Programming I	4
ITP 220	Java Programming II (or ITP 212)	4
ITP 246	Server-side Java (or ITP 244)	4
ITP 248	E-Commerce Application Integration (or ITP 298)	3
MTH 141	Business Math	3
SPD 105	Oral Communications	3
STD 108	College Survival Skills	1
E[1]	Health or PED Elective	2
E[3]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**68**

[1] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.
[2] May substitute approved social science elective.
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
ART 180	ECO 202
ENG 111	ITD 136
ITD 110	ITD 210
ITE 101	ITP 112 or ITP 120
ITP 120 or ITP 112	ITP 220 or ITP 212
MTH 141	
STD 108	

Fall	Spring
ACC 211	ECO 201
ACC 213	ITD 220 or ITN 171
ART 283	ITP 248 or ITP 298
ITN 101	SPD 105
ITP 246 or ITP 244	Humanities/Fine Arts Elective
Health or PED Electives	

Interior Design

Pending Approval

Certificate (XXX)

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 (one unit of algebra). Developmental courses may be recommended for students with deficiencies in English and mathematics.

CURRICULUM AND OTHER REQUIREMENTS		Credits
ENG 111	College Composition I	3
IDS 100	Theory & Techniques of Interior Design	3
IDS 105	Architecture Drafting for Interior Design	3
IDS 106	Three-Dimensional Drawing & Rendering	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 245	Computer Aided Drafting for Interior Designers	3
IDS 255	Business Procedures	3
MTH 151	Mathematics for the Liberal Arts I	3
E[1]	IDS Elective	3
Total Minimum Credits for Certificate		**37**

[1]Electives may be selected from the following: DRF 201, DRF 202 or IDS 235.

Suggested Course Sequence

Fall	Spring
IDS 100	IDS 105
IDS 205	IDS 109
ENG 111	MTH 151

Fall	Spring
IDS 106	IDS 206
IDS 116	IDS 245
IDS Elective	IDS 255

iSeries Studies

Career Studies Certificate (074)

Purpose: This program is designed to provide proficiency on the IBM iSeries computer and languages used on this platform for either the first-time student or returning professionals. The iSeries is a mid-range computing system produced by IBM and is the most popular mid-range computer worldwide. Demand for trained personnel on the iSeries is high. Graduates will be qualified for jobs requiring operational or programming skills on this platform.

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 130	Database Fundamentals	4
ITP 120	Java Programming I	4
ITP 152	RPG Programming I	4
ITP 155	Operations of Mid-Range Computers	4
ITP 159	Control Language I	3
ITP 252	RPG Programming II	4
ITP 255	Advanced Concepts in Mid-Range Computing	3
ITP 298	Capstone	3
Total Minimum Credits for Certificate		**29**

Suggested Course Sequence

Fall	Spring
ITP 155	ITD 130
ITP 159	ITP 152

Fall	Spring
ITP 120	ITP 255
ITP 252	ITP 298

Legal Assisting

(PARALEGAL)

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 Legal Assistant 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.

Accreditation: This program is an American Bar Association (ABA) Approved Program.

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 110[1]	Concepts of Personal & Community Health	2
ITE 115	Basic Computer Literacy	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 151	Mathematics for the Liberal Arts I	3
PSY 200	Principles of Psychology	3
SPD 105	Oral Communications	3
STD 108	College Survival Skills (or STD 100)	1
E	Legal Assisting Elective	9
E	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. Veterans will be awarded HLT/PED credit based on military service.
[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Con page 37

Suggested Course Sequence

Fall	Spring
ACC 211	HLT 110
ACC 213	LGL 125
ENG 111	LGL 126
MTH 151	PSY 200
LGL 110	SPD 105
ITE 115	Legal Assisting Elective
STD 108 or STD 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	

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		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 110[6]	Concepts of Personal and Community Health (or PED)	2-3
ITE 115	Basic Computer Literacy	3
MTH 151	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152	Mathematics for the Liberal Arts II (or MTH 271)	3
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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 37. 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 37. 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, they must take the intermediate level for the humanities elective.

[6] At least two credits of health (HLT) or physical education (PED) are required of all students. Students who completed the intermediate-level foreign language during their first year of study must complete three credits of health or physical education. Veterans will be awarded HLT/PED credit based on military service.

Suggested Course Sequence

Fall
ENG 111
STD 108 or STD 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 Elective or
Foreign Language Elective

Spring
ENG 242 or 244
HIS 102 or HIS 122
HLT 110 or 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		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 110[6]	Concepts of Personal and Community Health (or PED)	2
ITE 101[1]	Introduction to Microcomputers	1
MTH 151	Mathematics for the Liberal Arts I (or MTH 163)	3
MTH 152	Mathematics for the Liberal Arts II (or MTH 271)	3
SPD 100	Prin. of Public Speaking (or SPD 105)	3
STD 101	Visual Arts Orientation	1
E[2]	Foreign Language Elective	6-8
E[3]	Social Science Elective	6
E[4]	Natural Science Sequence	8
Total Minimum Credits for Degree		**60-62**

[1] Students who complete the intermediate-level foreign language during their first year of study may complete ITE 115 or ART 180 instead of ITE 101.
[2] Foreign language electives must be chosen from French or Spanish. Completion of intermediate level is required for graduation. Students may take the intermediate level, composed of two three-credit courses, during their first year to meet the foreign language requirement if they have completed two years of a high school foreign language with at least a "B" average. If not, students must take the beginning level, composed of two four-credit courses, during the first year and the intermediate level during the second year.
[3] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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. Veterans will be awarded HLT/PED credit based on military service.

Suggested Course Sequence

Fall	**Spring**
ART 121	ART 122
ENG 111	ENG 112
ITE 101	SPD 100 or SPD 105
STD 101	Foreign Language Elective
Foreign Language Elective	Social Science Elective
Social Science Elective	

Fall	**Spring**
ART 131	ART 132 or Foreign Language Elective
ENG 241 or Foreign Language Elective	HIS 102 or HIS 122
HIS 101 or HIS 121	HLT 110 or 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 110[1]	Concepts of Personal and Community Health (or PED elective)	2
ITE 115	Basic Computer Literacy	3
MKT 100	Principles of Marketing	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SPD 105	Oral Communication	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans will be awarded HLT/PED credit based on military service.
[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

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 110 or PED elective
MTH 120 or MTH 163	MKT 100
STD 108 or STD 100	SPD 105

Fall	Spring
ACC 261	ACC 215
BUS 205	AST 205
BUS 225	BUS 202
BUS 241	ECO 201
ECO 202	FIN 215
	Humanities/Fine Arts Elective

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 TRACK (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 110[1]	Concepts of Personal and Community Health (or PED elective)	2
ITE 115	Basic Computer Literacy	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SPD 105	Oral Communication	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans will be awarded HLT/PED credit based on military service.*

[2] *Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.*

Suggested Course Sequence

Fall
ACC 211
ACC 213
BUS 100
ENG 111
ITE 115
MTH 120 or MTH 163
STD 108 or STD 100

Spring
ACC 212
ACC 214
BUS 125 or MTH 271
BUS 200 or BUS 111 or 165
HLT 110 or PED elective
FIN 256 or MKT 100
SPD 105

Fall
ACC 261 or FIN elective
FIN 110
BUS 225
FIN 125 or BUS 241
FIN 150 or ECO 202

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

MARKETING TRACK (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 Ed.	2
ITE 115	Basic Computer Literacy	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
SPD 105	Oral Communication	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans will be awarded HLT/PED credit based on military service.
[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

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 or BUS 200
STD 108 or STD 100	
Fall	**Spring**
ACC 261	BUS 202
BUS 225	ECO 201
BUS 241	FIN 215
ECO 202	MKT 220
MKT 110	Humanities/Fine Arts Elective
SPD 105	

PRODUCTION AND OPERATIONS TRACK (06)

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 111	Principles of Supervision (or BUS 200)	3
BUS 125	Applied Business Math (or MTH 271)	3
BUS 202	Applied Management Principles	3
BUS 208	Quality and Productivity Management	3
BUS 225	Applied Business Statistics	3
BUS 241	Business Law I	3
BUS 266	Production & Operations Management	3
ECO 201	Principles of Macroeconomics	3
ECO 202	Principles of Microeconomics	3
ENG 111	College Composition I	3
FIN 215	Financial Management	3
HLT 110[1]	Personal and Community Health (or PED elective)	2
ITE 115	Basic Computer Literacy	3
MTH 120	Introduction to Mathematics (or MTH 163)	3
SPD 105	Oral Communication	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans will be awarded HLT/PED credit based on military service.
[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
ACC 211	ACC 212
ACC 213	ACC 214
BUS 100	AST 205
ENG 111	BUS 111 or BUS 200
ITE 115	BUS 125 or MTH 271
MTH 120 or MTH 163	HLT 110 or PED elective
STD 108 or STD 100	SPD 105
Fall	**Spring**
ACC 261	ACC 215
BUS 225	ECO 201
BUS 241	BUS 202
BUS 266	BUS 208
ECO 202	FIN 215
	Humanities/Fine Arts Elective

REAL ESTATE SPECIALIZATION (03)

ACC 211-212	Principles of Accounting I-II	6
ACC 213-214	Principles of Accounting Lab I-II	2
ACC 261	Principles of Federal Taxation I	3
AST 205	Business Communications	3
BUS 100	Introduction to Business	3
BUS 125	Applied Business 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 Ed.	2
ITE 115	Basic Computer Literacy	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
STD 108	College Survival Skills (or STD 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. Veterans will be awarded HLT/PED credit based on military service.

[2] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

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
STD 108 or STD 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 Elective
SPD 105	

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.

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 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
DRF 201-202-203[3]	Computer Aided Drafting and Design I-II-III	9
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
IND 230	Applied Quality Control	3
MAC 131	Machine Lab I	3
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
MEC 211	Machine Design I	4
MTH 115-116	Technical Mathematics I-II	6
PHY 201[4]	General College Physics I	4
SPD 100	Principles of Public Speaking or SPD 105	3
STD 101	Orientation to Engineering and Engineering Tech.	1
E[1]	Social Science Elective	6
E[5]	Humanities/Fine Arts Elective	3
Total Minimum Credits for Degree		**66**

[1] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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. Veterans 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] 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 37.

Suggested Course Sequence

Fall	Spring
DRF 201	DRF 202
EGR 216	MEC 113
ENG 111	MEC 119
MAC 131	MEC 131
MTH 115	MTH 116
STD 101	Humanities/Fine Arts Elective

Fall	Spring
DRF 203	HLT/PED
ETR 113	IND 230
HLT/PED	MEC 211
MEC 132	SPD 100
PHY 201	Social Science Elective
Social Science Elective	

Medical Transcription

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 113	Keyboarding for Speed and Accuracy	1
AST 140	Introduction to Windows	1
AST 141	Word Processing I (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
SPD 105	Oral Communications	3
STD 108	College Survival Skills (or STD 100)	1
Total Minimum Credits for Degree		**41**

[1] *Prerequisite: AST 101 or minimum 35 wpm on Keyboarding Proficiency Test.*
[2] *Prerequisite: AST 102.*
[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 113	AST 245
AST 140	SPD 105
ENG 111	HIT 125
HLT 143	HLT 144
NAS 171	PSY 120
STD 108 or STD 100	

Fall
HIT 121
HIT 196

Mental Health

Associate in Applied Science (154)

Purpose: Mental health course work prepares students for either entry-level positions in the helping fields or transfer to a bachelor degree program. Through courses and field placements in agencies, students develop skills in working with the mentally, physically, and emotionally handicapped, the aged, adolescents, the substance abuser, and the child or adult in crisis.

Depending on their future educational and occupational needs, students may choose either the clinical track or the optional transfer track. Students in the clinical track participate in a great number of field placements, which enhance the possibility of immediate employment after graduation. Students in the transfer track have a greater number of electives, so that they may fulfill requirements for entrance into a four-year program.

Students must declare their intentions to complete either track by the end of their first year. Faculty will arrange individual consultations with students to help them with 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 Mental Health Technology 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, Mental Health Program Director at (540) 857-7288.

CLINICAL TRACK (01)

CURRICULUM AND OTHER REQUIREMENTS		Credits
ENG 111	College Composition I	3
HLT 110[1]	Concepts of Personal and Community Health (or PED elective)	2
ITE 115	Basic Computer Literacy	3
MEN 100	Introduction to Mental Health	3
MEN 101-102	Mental Health Skill Training I-II	6
MEN 221-222[2]	Group Process I-II	6
MEN 225	Counseling Therapy	3
MEN 290[3]	Coordinated Internship	15
MTH 120	Introduction to Mathematics (or MTH 151)	3
PSY 200	Principles of Psychology	3
PSY 215	Abnormal Psychology	3
PSY 220	Introduction to Behavior Modification	3
SOC 200	Principles of Sociology	3
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
E	Humanities/Fine Arts Elective	3
E	Elective	2
Total Minimum Credits for Degree		**65**

[1] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.
[2] Prerequisite: MEN 101-102 or departmental approval needed.
[3] Departmental approval needed.

Suggested Course Sequence

Fall	**Spring**
ENG 111	MEN 102 (Spring only)
MEN 100 (Fall only)	MEN 225 (Spring only)
MEN 101 (Fall only)	MEN 290
MTH 120 or MTH 151	PSY 215
PSY 220 (Fall only)	SPD 100
STD 108 or STD 100	

Fall	**Spring**
HLT 110 or PED elective	ITE 115
MEN 221 (Fall only)	MEN 222 (Spring only)
MEN 290	MEN 290
PSY 200	SOC 200
Humanities/Fine Arts Elective	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 Mental Health Technology may earn a baccalaureate degree in Human Services on the Virginia Western Community College campus in Roanoke.

Occupational Objectives: Employment opportunities for graduates in the Mental Health clinical track include staff positions in hospitals, mental health clinics, group homes, training centers, and community service agencies. Graduates in the Mental Health transfer track 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 Admission Guidelines: Proficiency in high school English and Algebra I for clinical track; Algebra I, Algebra II and Geometry are prerequisites for the transfer track. Developmental courses may be recommended for students with deficiencies in English and mathematics.

TRANSFER TRACK

CURRICULUM AND OTHER REQUIREMENTS		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	Basic Computer Literacy	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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
E[7]	Humanities/Fine Arts Elective	3
E[5]	Elective	3
E[6]	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 Mental Health advisor for other appropriate transfer classes.
[2] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.
[3] Prerequisite: MEN 101-102 or departmental approval needed.
[4] Departmental approval needed.
[5] Students enrolling at Radford University should select a Sociology elective.
[6] Select one of the following: PSY 230, PSY 235 or PSY 236.
[7] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
ENG 111	ENG 112
MEN 100 (Fall only)	MEN 102 (Spring only)
MEN 101 (Fall only)	MEN 225 (Spring only)
PSY 200	MEN 290
PSY 220 (Fall only)	PSY 215
STD 108 or STD 100	

Fall	Spring
BIO 101	BIO 102
HLT 110 or PED	ITE 115
MEN 221 (Fall only)	MEN 222 (Spring only)
MTH 157	SPD 100
Humanities/Fine Arts Elective	Elective
Elective	

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 I-II	2
ETR 141-142	Electronics I-II	6
ETR 285	Fundamentals of Microcomputer Repair	4
TEL 150-151	Internetworking I-II	8
TEL 250	Internetworking III	4
Total Minimum Credits for Certificate		**28**

Suggested Course Sequence

Fall	Spring
ETR 113	ETR 123
TEL 150	ETR 141
	ETR 285
	TEL 151

Fall
ETR 124
ETR 142
TEL 250

.NET and Database Administration

Career Studies (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 111(or ITN 115)	Windows 2000 Server (or 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	ITP 112
Fall	**Spring**
ITD 258	ITN 111 (or ITN 115)
ITP 244	ITP 215

Network and Database Administration

Career Studies (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 2000 and the MCDBA (Microsoft Certified Database Administrator) credentials as well as providing a broad background in network and database concepts.

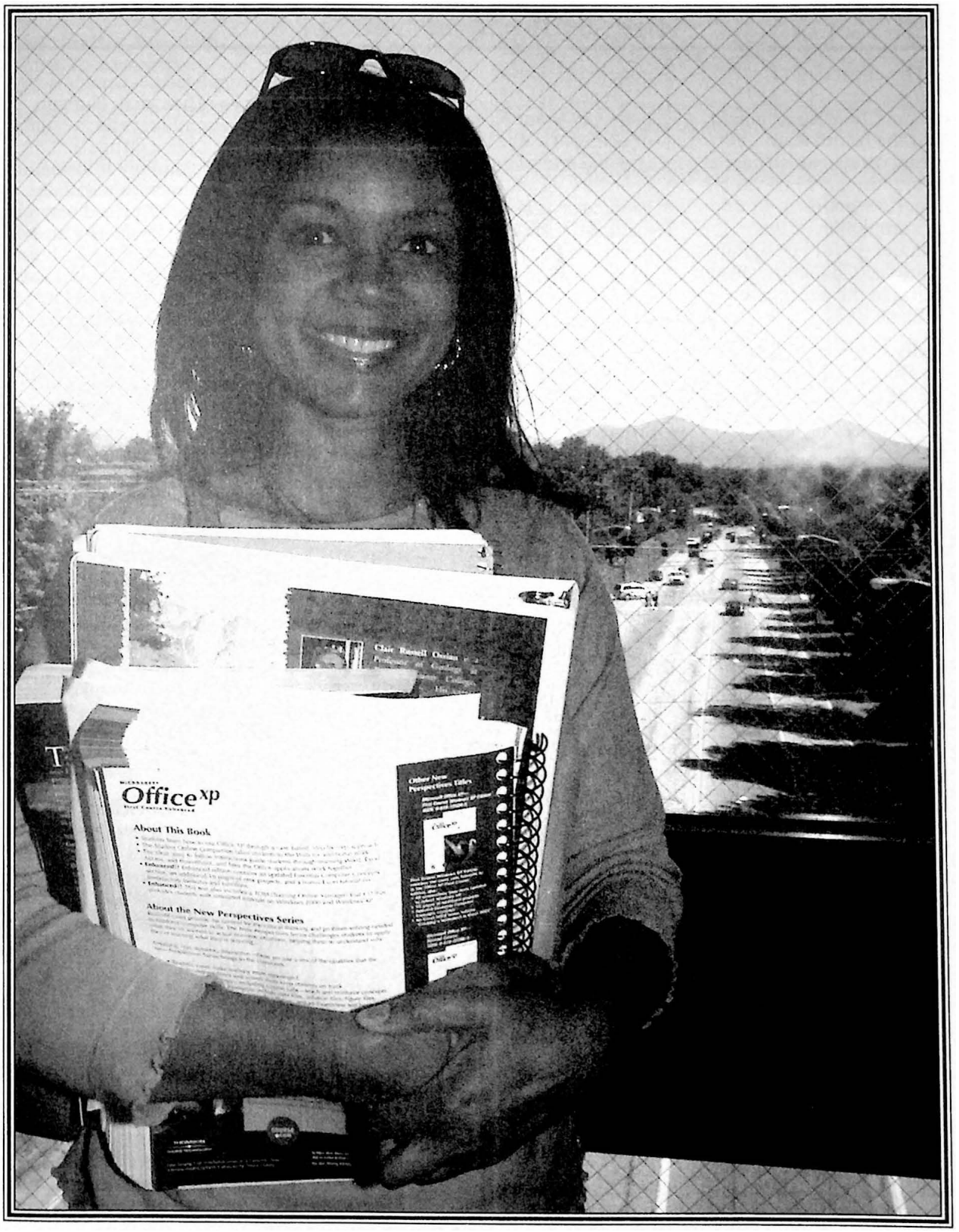
Recommended Preparation: The student should possess a proficiency in high school English, high school algebra and geometry, and computer keyboarding skills.

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 111 (or ITN 115)	Windows 2000 Server (or Windows 2003 Server)	3
ITN 114	Windows XP Professional	3
ITN 116 (or ITN 212)	Managing a 2000 Network (or Managing a 2003)	3
ITN 170 (or ITN 171)	Linux System Administration (or Unix I)	3
E	Network Elective	3
Total Minimum Credits for Certificate		**29**

Suggested Course Sequence

Fall	Spring
ITD 136	ITD 250
ITN 101	ITN 111 (or ITN 115)
Fall	**Spring**
ITD 258	ITN 170 (or ITN 171)
ITN 114	Network Elective
ITN 212 (or ITN 116)	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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 (R.N.).

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 2005:

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 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 12-semester college credit hours within a twelve-month period.
4. Applications for the 2005 class will be accepted beginning May 1, 2004 and must be completed no later than March 15, 2005. Should spaces be available, later applications will be considered. A complete application includes: an application to the college, official transcripts from all colleges attended, records or transcripts showing completion of a high school diploma or GED, math placement results, results of the HOBET test which is taken at the student's expense and is non-refundable, a 2005 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. Nursing Application Forms are available in the Admissions Office and the Health Technology Information Office. An interview with the Nursing Program Head may also be required if the counselor's advising session indicates a need for further interview. Qualified applicants, during the Spring Semester, will be required to take the HOBET (Health Occupation Basic Entrance Test). This test is at the student's expense and is non-refundable. In addition interviews may be required of all qualified applicants during the Spring Semester. It is **strongly recommended** that applicants submit official high school transcripts, GED, and **all** official college transcripts in one envelope to the VWCC Health Technology Information Office with the VWCC application. After March 15, 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.

Admission Priorities: When the applications are reviewed in late April, priority will be given to applicants with a cumulative G.P.A. of 3.0 or higher who have the strongest academic record and who have either already completed all high school prerequisites or anticipate completion of the missing prerequisites before Summer 2005.

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.

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 lab supplies, uniforms and accessories through the Nursing Club.
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.

Admission Requirements:
1. Graduate of an approved practical nursing program.
2. Currently licensed as an LPN in the United States.

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 (summer immediately prior to NUR 238) 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 Handout 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 or other colleges offering a baccalaureate degree in nursing.
2. Students who are planning to transfer to a baccalaureate degree program following the A.A.S. 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
SPD 100	Public Speaking (or SPD 105)	3
STD 108	College Survival Skills (or STD 100)	1
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 Transfer Courses" on page 37.

Required Course Sequence*

Fall – First Year
BIO 141
ENG 111
NUR 121
STD 108 or STD 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. 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 Technology

Career Studies (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 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	Machine Transcription	3
AST 243-244	Office Administration I-II	6
AST 253	Advanced Desktop Publishing I	3
Total Minimum Credits for Certificate		**28**

Suggested Course Sequence

Fall	**Spring**
AST 140	AST 232
AST 141	AST 238
AST 205	AST 244
AST 243	

Fall
AST 236
AST 240
AST 253

EDUCATION PAYS

HISTORICAL FAMILY INCOME BY EDUCATIONAL ATTAINMENT

(25 YEARS OLD AND OVER)

Education Level	Average Annual Earnings
Doctorate	$104,237
Professional	$130,764
Master's	$ 87,099
Bachelor's	$ 71,361
Associate of Arts	$ 48,153
Some College	$ 46,696
High School	$ 39,017
9th to 12th Grade (no diploma)	$ 30,656
Less than 9th Grade	$ 25,112

(Source: U.S. Census Bureau 2001)

Pharmacy Technician

Career Studies (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.

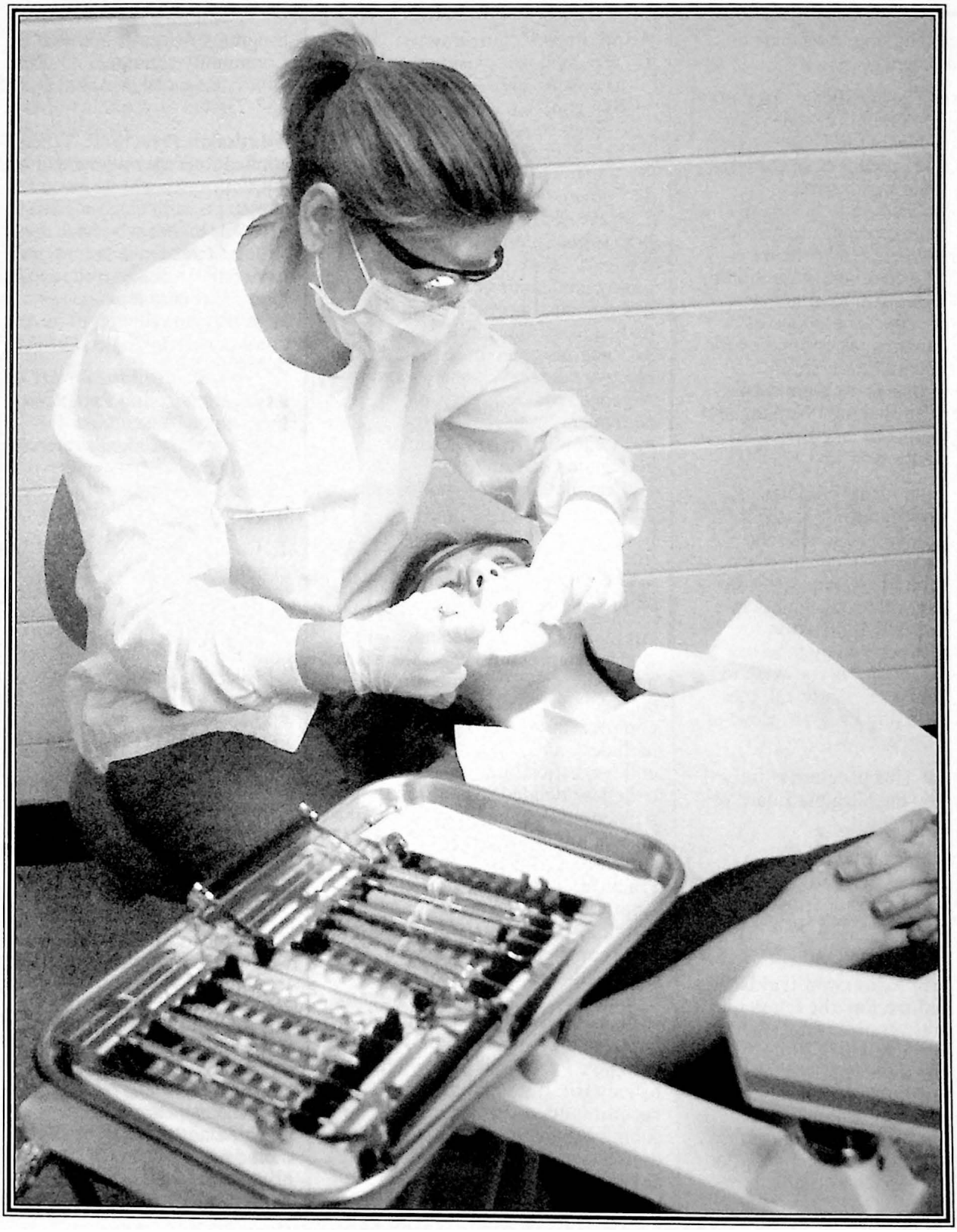
Occupational Objectives: Pharmacy technicians work in hospital, retail, home health care, nursing home, clinic, nuclear medicine, and mail order prescription pharmacies. Pharmacy technicians have been employed with medical insurance, medical computer software, drug manufacturing, drug wholesale, and 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
PSY 120	Human Relations	3
HLT 190	Coordinated Internship in Health (Retail Pharmacy)	3
HLT 190	Coordinated Internship in Health (Institutional Pharmacy)	3
Total Minimum Credits for Certificate		**25**

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



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 through the provision of quality nursing care 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.

Approved: This program is fully approved by the Virginia Board of Nursing.

Occupational Objective: Employment opportunities include nursing homes, hospices, medical offices and clinics, and both acute and long-term care facilities.

Curriculum Admission Guidelines and Procedure For the Class of 2005: The program enrolls students 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 15. Applications may be accepted after this date on a space available basis.

Qualified applicants are considered without regard to race, color, gender, age, religion, disability, national origin, or other non-merit factors.

Admissions Requirements:

1. The applicant must be:
   a) a rising high school senior or
   b) a graduate from an accredited high school or
   c) holder of a GED (battery score average equal to or greater than 45).
2. Have completed the following high school prerequisites with a grade of "C" or better: one unit of biology, one unit of Algebra I and demonstrated proficiency in basic math and reading skills.
3. Recommended high school elective courses: chemistry and Algebra II or Geometry, or equivalent.
4. A cumulative scholastic or collegiate GPA of 2.0.
5. Completion of evaluative tests administered at VWCC.
6. Attendance at a personal interview demonstrating satisfactory oral and written communication skills may be required.

Applicants interested in admission to the program must meet the above admissions requirements and have a completed application packet. A complete application packet includes: an application to the college, official transcripts from all colleges attended, and official transcripts showing completion of a high school diploma, GED, or currently a rising senior, a 2005 Practical Nursing Program Application Form, and a Practical Nursing Admissions Advising Form to be completed by the Student Information Specialist for Health Technology. The Practical Nursing Admissions Advising Form will be completed upon receipt of the completed academic file by letter or office visit. It is **strongly recommended** that applicants submit official high school transcripts, GED, and **all** official college transcripts in one envelope to the VWCC Admissions Office with the VWCC application. Requests for application forms and information may be addressed to: Ms. Rose Peters, Information Specialist for Health Technology Programs, Virginia Western Community College, P.O. Box 14007, Roanoke, VA 24038, (540) 857-7314.

Admission Priorities: When the applications are reviewed in late April, priority will be given to 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 the missing prerequisites by the end of Summer 2005.

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, combative and difficult clients, and organizational and time pressures in a variety of client care settings.

Student Responsibilities After Acceptance Into The Program: 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 Practical Nursing Program Head by August 15 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 rubella screen and/or immunity vaccine, two-step PPD skin test (or chest x-ray). Synthetic Hepatitis B vaccination series is required and negative urine drug screening is required. Random drug and alcohol screening may be required during the course of the program. Costs of drug screening is the responsibility of the student. Students must provide transportation to and from agencies utilized for clinical experience.

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 nursing and natural science 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 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 173	Pharmacology for Practical Nurses	2
PNE 181	Clinical Experience I	5
PNE 182	Clinical Experience II	5
PNE 195	Topics in Practical Nursing	5
SPD 100	Public Speaking (or SPD 105)	3
STD 108	College Survival Skills (or STD 100)	1
Total Minimum Credits for the Certificate		**47**

[1] *Includes Gerontological Nursing.*

Required Course Sequence*

Fall – First Year
ENG 111
PNE 141
PNE 145
PNE 155
PNE 173
STD 108

Spring – First Year
PNE 142
PNE 156
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 (XXX)

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 wide variety of diagnostic and therapeutic services under the supervision of qualified professionals. Upon successful completion of the program, graduates will be eligible to take the national registry examination leading to certification as a registered Radiation Therapist, RT-T.

Accreditation Status: By virtue of college-wide SACS accreditation, upon program completion graduates will be eligible to take the National Registry Examination leading to certification as a registered Radiation Therapist. Programmatic accreditation by the Joint Review Committee on Education in Radiologic Technology (JRCERT) has been initiated.

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, and physics with a C or better in each.
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.
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.
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. Other healthcare providers from nationally accredited agencies and other individuals meeting admissions criteria will also be considered for admission.
6. 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 pounds.

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: 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 2005 Radiation Oncology Application, students seeking admission to the Radiation Oncology 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 **strongly recommended** that applicants submit official high school transcripts, GED, 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 Radiation Oncology Admissions Committee at VWCC, Health Technology, 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. Applicants must see the Health Technology Information Specialist for information, evaluation, advising regarding the program and completion of the Radiation Oncology Admissions Advising Form. This form will be completed upon receipt of the completed academic file by letter or office visit. Early application is advisable due to constraints in the number of clinical positions available.

Upon receipt of the qualified student's completed file by the Program Director, the applicant will be contacted for an interview appointment during the Spring Semester. Early application is

encouraged. Credentials completed by February 15 will be considered by the Radiation Oncology Admissions Committee. Applicants will be notified in writing of the action taken by the committee.

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.

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 Assurance	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
STD108	College Survival Skills	1
Total Minimum Credits for Degree		**47**

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

Required Course Sequence*

Fall – First Year	Spring – First Year
ENG 111	ITE 102
MTH 163	ROC 121
ROC 110	ROC 132
ROC 120	ROC 141
ROC 131	ROC 142
STD 108 or STD 100	ROC 145
Summer	**Fall – Second Year**
ROC 231	ROC 232
	ROC 241
	ROC 242
	ROC 243
	ROC 244

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

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 900, 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, and physics with a C or better in each.
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.
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.

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 2005 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 **strongly recommended** that applicants submit official high school transcripts, GED, and **all** official college transcripts in one envelope to the VWCC Health Technology Information Office with the VWCC application. Applicants are encouraged to see the Health Technology Information Specialist for information, evaluation, and advising regarding the program. The Radiography Admissions Advising Form will be completed upon receipt of the completed academic file by letter or office visit.

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 January 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.

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 in the Health Technology Division Office.

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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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 37.
[3] Includes instruction in fundamental mathematics skills.
[4] ENG 111-112 (College Composition I-II) with SPD 100 is recommended for students planning to transfer to a baccalaureate degree program.

Required Course Sequence

Fall – First Year
HLT 143
NAS 171
RAD 121
RAD 131
STD 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 A.S. degree in Science contains five curricular options: Science, Science with a Specialization in Mathematics, Computer Science, or Health Sciences and a track option for Environmental Science. The options are designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree program in a pre-professional or scientific program. Students preparing for a major in agriculture, biology, chemistry, pre-dentistry, forestry, geology, home economics, horticulture, pharmacy, pre-medicine, physics, science education, or pre-veterinary should complete the curricular program for Science. Students preparing for a major in mathematics should complete the Specialization in Mathematics. Students preparing for a major in computer science should complete the Specialization in Computer Science. Students preparing for a major in a health field i.e. medical technology, nursing, or physical therapy should complete the Specialization in Health Sciences. Students interested in an Environmental Studies field should pursue the Environmental Science Track.

All curricular options are flexible provided minimum state standards are satisfied. 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 guide sheet. 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. 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 comparable in length and content to the first two years of the program at the four-year college or university.

CURRICULUM AND OTHER REQUIREMENTS		Credits
ENG 111-112	College Composition I-II	6
HIS 121	U. S. History (or HIS 101)	3
HLT 110[1]	Concepts of Personal or Community Health (or PED elective)	2
ITE 115	Basic Computer Literacy (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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans 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 37, "Approved List of Transfer Courses."
[3] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.
[4] Electives must be chosen from the "Approved List of Transfer Courses" on page 37.
[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 37. 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 110 or PED elective
ITE 115 or CSC 201
MTH 163 or MTH 175
STD 108 or STD 100
Science Elective with Lab

Spring
ENG 112
MTH 27 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

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[1]	Health or Physical Education	2-4
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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans 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 37. 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 37.
[4] Humanities/Fine Arts elective must be chosen from the "Approved List of Transfer Courses" on page 37.

Suggested Course Sequence

Fall	Spring
CSC 201	CSC 202
ENG 111	ENG 112
HLT	HLT
MTH 175	MTH 176
MTH 177	MTH 178
STD 108 or STD 100	Social Science Elective
Social Science Elective	

Fall	Spring
HIS 101 or HIS 121	PHY 242 or CHM 112
MTH 241	SPD 100
MTH 277	Elective
PHY 241 or CHM 111	Humanities/Fine Arts Elective

Purpose: The Environmental Science Track is designed for students who plan to transfer to a four-year college or university and major in an environmental studies field. Such fields are a continuing and expanding area of special interest to science students.

As the result of a cooperative arrangement with Ferrum College, a special curricular track has been designed for students who want to transfer into Ferrum's baccalaureate degree program in Environmental Science. Provided all courses in the Associate Degree are completed with a grade of "C" or above with a cumulative grade point average of 3.0 or higher, Ferrum College has agreed that Virginia Western graduates will be accepted into their Environmental Science Program. If the cumulative grade point average at Virginia Western is less than 3.0, admission into the upper level courses will be on a competitive basis and will be dependent upon the space availability.

Curricular needs are not the same in every environmental 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. Students who are preparing to attend an environmental science program at another college or university besides Ferrum should check that institution's degree requirements to determine if substitutions in Virginia Western's course requirements need to be requested.

Curriculum Admissions Guidelines: Four units of English; three units of college preparatory mathematics for science degree; and one unit of social science. Developmental courses may be recommended for students with deficiencies in English and mathematics.

ENVIRONMENTAL SCIENCE TRACK (03)

CURRICULUM AND OTHER REQUIREMENTS		Credits
BIO 101-102	General Biology I-II	8
BIO 215	Plant Life in Virginia (or BIO 277)	3
BIO 270	General Ecology	4
BIO 285	Biological Problems in Contemporary Society	3
CHM 111-112	College Chemistry I-II	8
ENG 111-112	College Composition I-II	6
HIS 101	History of Western Civilization I (or HIS 121)	3
HLT	Health or PED Elective	2
ITE 115	Basic Computer Literacy	3
MTH 163	Precalculus I	3
MTH 241	Statistics I	3
MTH 271	Applied Calculus I	3
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
E	Humanities/Fine Arts Elective	3
E	Social Science Elective	6
Total Minimum Credits for Degree		**62**

NOTE: Ferrum College has suggested GOL 105 (Physical Geology) would be a beneficial class to have before entering their junior year.

Suggested Course Sequence

Fall	**Spring**
BIO 101	BIO 102
CHM 111	BIO 285
ENG 111	CHM 112
MTH 163	ENG 112
STD 108 or STD 100	Health or PED Elective
Health or PED Elective	

Fall	**Spring**
ITE 115	BIO 215 or BIO 277
MTH 241	BIO 270
MTH 271	HIS 101 or HIS 121
Humanities/Fine Arts Elective	SPD 100
Social Science Elective	Social Science 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 3.2 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 3.2 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 site, located in the Education Center, Roanoke Memorial Hospitals, 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	Basic Computer Literacy	3
MTH 151	Liberal Arts Mathematics I	3
MTH 152	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	Developmental Psychology (or PSY 231)	3
SOC 200	Principles of Sociology	3
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
Total Minimum Credits for Degree		**60**

Suggested Course Sequence

Fall	Spring
CHM 111	CHM 112
ENG 111	ENG 112
HIS 121 or HIS 101	HLT 230
MTH 151	ITE 115
PSY 200	MTH 152 or MTH 157
STD 108 or STD 100	

Fall	Spring
BIO 141	BIO 142
ENG 241 or ENG 243	NAS 185
PLS 211 or ECO 201	PSY 230 or PSY 231
SOC 200	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 A.S. 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)

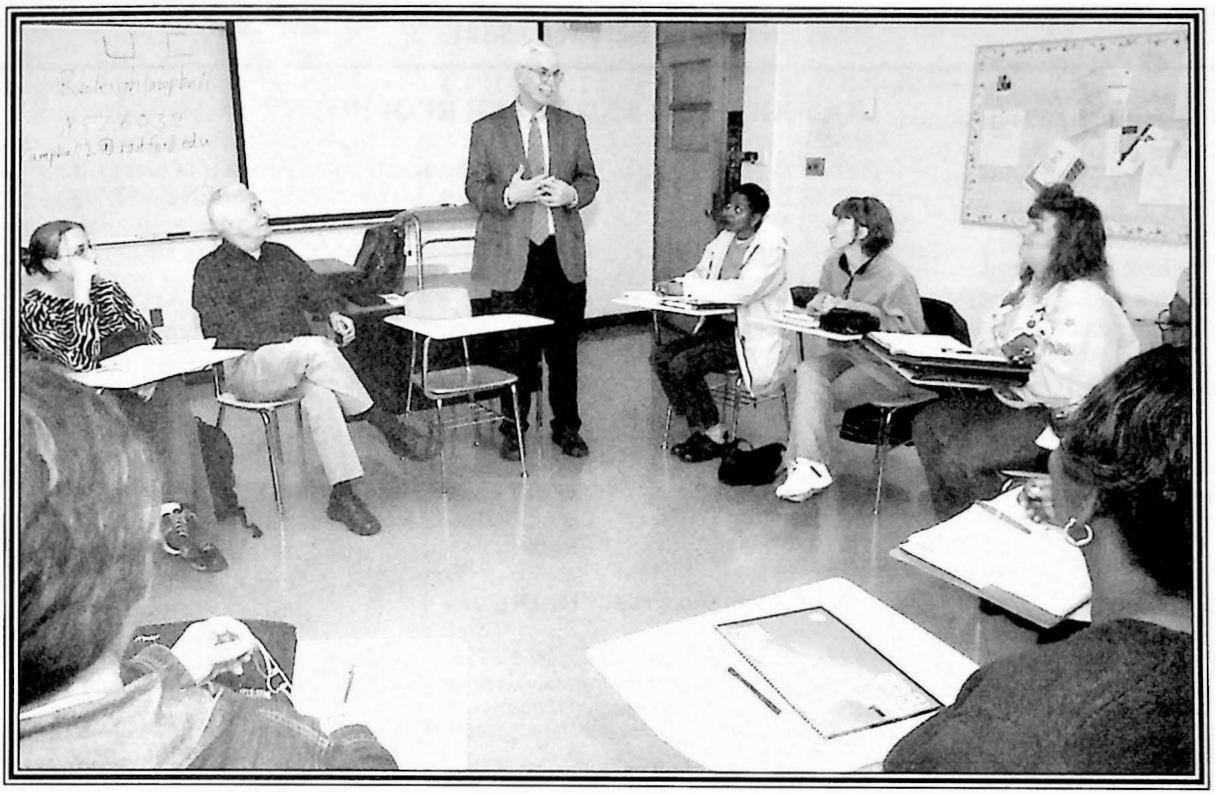
CURRICULUM AND OTHER REQUIREMENTS		Credits
CHM 111-112	College Chemistry I-II	8
CSC 201	Computer Science I	4
ENG 111-112	College Composition I-II	6
HIS 121	U.S. History (or HIS 101)	3
HLT/PED[1]	Health or PE	2
MTH 175-176	Calculus of One Variable I-II	6
MTH 178	Topics in Analytic Geometry	2
MTH 277	Vector 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
SPD 100	Public Speaking	3
STD 108	College Survival Skills	1
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. Veterans 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 Transfer Courses" on page 37.

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
STD 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 110[5]	Concepts of Personal and Community Health	2
ITE 115	Basic Computer Literacy	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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
E[1]	Humanities/Fine Arts Elective	6
E[2]	Natural Science Sequence	8
E[3]	Social Science Elective	6
E[4]	Elective	3
Total Minimum Credits for Degree		**62**

[1] Humanities/Fine Arts elective must be selected from the "Approved List of Transfer Courses" on page 37. A two-semester sequence of the same course is recommended for transfer to most four-year institutions.
[2] A two-semester sequence selected from BIO 101-102, CHM 111-112, GOL 105-106 or PHY 201-202 must be completed.
[3] Social science electives must be selected from the "Approved List of Transfer Courses" on page 37. 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] Electives must be selected from the "Approved List of Transfer Courses" on page 37.
[5] Two credits of health (HLT) or physical education (PED) are required of all students. Veterans will be awarded HLT/PED credit based on military service.

Suggested Course Sequence

Fall
ENG 111
HIS 121
MTH 151 or MTH 163
STD 108 or STD 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 110
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 staff 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 110[5]	Concepts of Personal and Community Health	2
ITE 115	Basic Computer Literacy	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
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
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. Veterans 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	Spring
BIO 101	BIO 102
ENG 111	EDU 100
HIS 121	ENG 112
MTH 151 or MTH 163	HIS 122
PSY 200	MTH 157 or MTH 152 or MTH 271
STD 108 or STD 100	PHI 101
Fall	**Spring**
ENG 241	ART 101
HIS 101	HLT 110
ITE 115	PLS 211 or ECO 202
GEO 210	SPD 100
MUS 121	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.

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 compressed video 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 healthcare 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 a PVCC application in addition to the Surgical Technology program application.

2. Have official copies of your high school and all other college transcripts sent to the PVCC Office of Admissions and Records. **It is the student's responsibility to verify that transcripts have been received at PVCC.** Transfer credits are evaluated by the registrar.

3. Complete assessment testing in reading, writing, arithmetic, and basic algebra. Assessment testing must be completed by May 1 in order to be considered for August admission. This testing may be done at any community college and the results sent to PVCC.

4. Meet with the Health Technology Information Specialist at VWCC for interpretation of the assessment results. During the interview, the specialist will review your academic records to insure that you have met the program prerequisites. 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 developmental courses in English and Math as identified by placement test results.

6. Completion of all other necessary prerequisites.

7. Completion of Surgical Technology program application by May 1.

8. 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.)

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 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
HLT 250	Pharmacology	2
NAS 185	Microbiology	4
NUR 140	Introduction to Surgical Care	2
NUR 141-142	Fundamentals of Surgical Care I&II	6
NUR 209-210	Surgical Procedures I & II	8
NUR 299	Clinical Practicum	6
STD 100	Orientation	1
Total Minimum Credits for Degree		**45**

Suggested Course Sequence

Fall	**Spring**
BIO 141	BIO 142
HLT 106	HLT 250
HLT 143	NUR 209
NUR 140	NUR 210
NUR 141	STD 100
NUR 142	

Fall
ENG 111
NAS 185
NUR 299

NOTE:
Nursing classes will be completed at VWCC through compressed video delivery by 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 I	3
ENG 115	Technical Writing	3
HLT/PED	Health or Physical Ed.	2-4
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	Basic Computer Literacy	3
MTH	Mathematics (120/151/166)	3-5
SPD 100	Principles of Public Speaking	3
STD 108	College Survival Skills (or STD 100)	1
TEL	Telecommunications Technical Elective	3
EEE	Content Skills Elective	3
EEE	Content Skills Elective	12-15
EEE	Humanities/Fine Arts Elective	3
EEE	Social Science Elective	6
EEE	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.

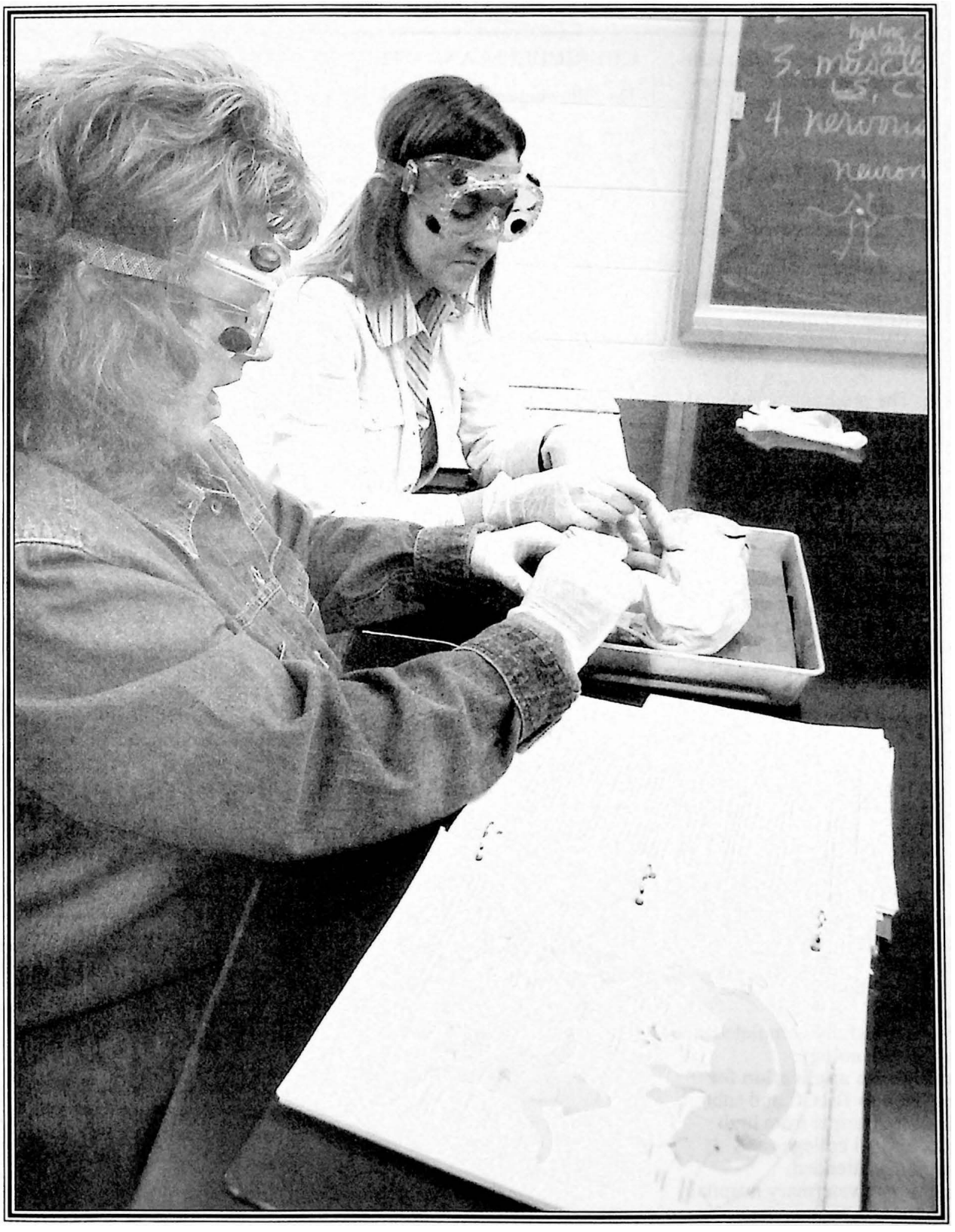
Suggested Course Sequence

Fall
ENG 111
ITE 115
MTH 120/151/166
STD 108 or STD 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
Health or Physical Ed.
IND 190
IND 230
Content Skills Elective
Social Science Elective

Spring
Health or Physical Ed.
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.

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, 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	5
The following general education courses may be completed at VWCC prior to program admission:		
ENG 111	College Composition I	3
STD 100	Orientation	1
CHM 111	Survey of Chemistry	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		**74**

[1] *Humanities/Fine Arts and Social Science electives must be selected from the "Approved List of Transfer Courses" on page 37.*

6. Have completed or be in the process of completing the general education courses required for the A.A.S. 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, 2005. Classes will start in August 2006.

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
SAF 126	Principles of Industrial Safety	3
STD 108	College Survival Skills (or STD 100)	1
WEL 120	Fundamentals of Welding	3
WEL 121	Arc Welding	2
WEL 135	Inert Gas Welding	2
WEL 145	Welding Metallurgy	3
E[1]	Approved Technical Elective	3

Additional required courses that may be taken any semester:

ENG/SPD	English Elective	3
E[1]	Approved Technical Elective	3
E[1]	Approved Technical Elective	3
E[2]	Social Science Elective	3
Total Minimum Credits for Certificate		34

[1] *Technical elective - requires departmental approval.*
[2] *Social science elective*

Suggested Course Sequence

Fall	Spring
DRF 161	SAF 126
STD 108 or STD 100	WEL 121
WEL 120	

Fall	Spring
ELE 133	WEL 145
WEL 135	Approved Technical Elective

Description of Courses

Continuing Education and Community Services Programs

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

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

General Course Information

COURSE NUMBERS

Courses numbered 01-09 are developmental studies courses. These courses are designed to prepare students for college-level courses (primarily in the areas of English and mathematics). The credits earned in these courses are not applicable toward associate degree programs. These courses are graded on a Satisfactory/ Unsatisfactory basis and they do not effect 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.) Corequisite: 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.) Corequisite: 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.) Corequisite: 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.) Corequisite: 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 241 AUDITING I (3 CR.) Prerequisite or co-requisite: ACC 222 or equivalent. Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence-gathering techniques and other topics. Lecture 3 hours per week.

ACC 261 PRINCIPLES OF FEDERAL TAXATION I (3 CR.) Presents the study of federal taxation as it relates to individuals and related entities. Includes tax planning, compliance and reporting. Lecture 3 hours per week.

ADJ – ADMINISTRATION OF JUSTICE

ADJ 100 SURVEY OF CRIMINAL JUSTICE (3 CR.) Presents an overview of the United States criminal justice system; introduces the major system components--law enforcement, judiciary, and corrections. Lecture 3 hours per week.

ADJ 105 THE JUVENILE JUSTICE SYSTEM (3 CR.) Presents the evolution, philosophy, structures and processes of the American juvenile delinquency system; surveys the rights of juveniles, dispositional alternatives, rehabilitation methods and current trends. Lecture 3 hours per week.

ADJ 107 SURVEY OF CRIMINOLOGY (3 CR.) Surveys the volume and scope of crime; considers a variety of theories developed to explain the causation of crime and criminality. Lecture 3 hours per week.

ADJ 120 INTRODUCTION TO COURTS (3 CR.) Presents an overview of the American judiciary (the federal and 50 state judicial systems) with emphasis on criminal court structures, functions, and personnel; surveys the judicial system in the Commonwealth of Virginia. Lecture 3 hours per week.

ADJ 130 INTRODUCTION TO CRIMINAL LAW (3 CR.) Surveys the general principles of American criminal law, elements of major crimes, and basic steps of prosecution procedure. Lecture 3 hours per week.

ADJ 140 INTRODUCTION TO CORRECTIONS (3 CR.) Focuses on societal responses to the offender. Traces the evolution of practices based on philosophies of retribution, deterrence, and rehabilitation. Reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system. Lecture 3 hours per week.

ADJ 227 CONSTITUTIONAL LAW FOR JUSTICE PERSONNEL (3 CR.) Prerequisite: ADJ 100. Surveys the basic guarantees of liberty described in the U.S. Constitution and the historical development of these restrictions on government power, primarily through U.S. Supreme Court decisions. Reviews rights of free speech, press, assembly, as well as criminal procedure guarantees (to counsel, jury trial, habeas corpus, etc.) as they apply to the activities of those in the criminal justice system. Lecture 3 hours per week.

ADJ 228 NARCOTICS AND DANGEROUS DRUGS (3 CR.) Surveys the historical and current usage of narcotics and dangerous drugs. Teaches the identification and classification of such drugs and emphasizes the symptoms and effects on their users. Examines investigative methods and procedures utilized in law enforcement efforts against illicit drug usage. Lecture 3 hours per week.

ADJ 229 LAW ENFORCEMENT AND THE COMMUNITY (3 CR.) Prerequisite: ADJ 100. Considers current efforts by law enforcement personnel to achieve an effective working relationship with the community. Surveys and analyzes various interactive approaches of law enforcement agencies and the citizenry they serve. Lecture 3 hours per week.

ADJ 236 PRINCIPLES OF CRIMINAL INVESTIGATION (3 CR.) Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling and preserving of evidence. Lecture 3 hours per week.

ADJ 237 ADVANCED CRIMINAL INVESTIGATION (3 CR.) Prerequisite: ADJ 236. Introduces specialized tools and scientific aids used in criminal investigation. Applies investigative techniques to specific situations and preparation of trial evidence. Prerequisite ADJ 236 or divisional approval. Lecture 3 hours per week.

ADJ 247 CRIMINAL BEHAVIOR (3 CR.) Introduces and evaluates the concepts of normal and abnormal behavior. Focuses on the psychological and sociological aspects of criminal and other deviant behavior patterns. 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.

ARC – ARCHITECTURE

ARC 100 INTRODUCTION TO ARCHITECTURE (3 CR.) Outlines history and impact of architecture. Emphasizes dynamics and social aspects of architecture and society; focuses on 19th and 20th century architectural forms. Lecture 3 hours per week.

ARC 121 ARCHITECTURAL DRAFTING I (3 CR.) Introduces the fundamentals of graphic communications. Instruction to include techniques of drafting, including tools and equipment, lettering, dimensioning, symbols, graphic presentation, and methods of construction. Requires development of working drawings including plans, elevations, sections, details, schedules and pictorial drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 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.

ARC 255 CONSTRUCTION ESTIMATING (2 CR.) Prerequisite: CIV 130 or departmental approval. Requires preparation of detailed material quantity surveys from plans and specifications for commercial construction. Discusses cost, bid, and contract procedures. Lecture 2 hours per week.

ARO – AVIATION

ARO 100 AVIATION IN THE UNITED STATES (3 CR.) Presents an overview of the history of manned flight and evolution of air transportation with emphasis on the organization and management of today's airlines. Includes current trends and problems in the airline industry. Lecture 3 hours per week.

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.

ARO 122 INSTRUMENT PILOT GROUND SCHOOL (3 CR.) Covers principles applicable to instrument aviation requirements. Includes study of aerodynamics pertaining to instrument flight, flight instruments and airways. Prepares students for the FAA examination for instrument pilot rating. Lecture 3 hours per week.

ARO 155 FUNDAMENTALS OF AIR TRAFFIC CONTROL (3 CR.) Provides the student with an understanding of the Federal Aviation Administration and the Air Traffic Control System's responsibilities and operating procedures. Lecture 3 hours per week.

ARO 235 PRIVATE PILOT-AIRPLANE FLIGHT TRAINING (2 CR.) Provides basic flight training leading to the attainment of the FAA Private Pilot Airplane license. Consists of a minimum of 40 hours of flight training and additional training necessary to meet FAA requirement. Requires a special fee. Laboratory 4 hours per week.

ART – ART

ART 101-102 HISTORY AND APPRECIATION OF ART I-II (3 CR.) (3 CR.) Presents history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of western civilization to present. Lecture 3 hours per week.

ART 121-122 DRAWING I-II (3 CR.) (3 CR.) Prerequisite for ART 122: ART 121. Develops basic drawing skills and understanding of visual language through studio instruction/lecture. Introduces concepts such as proportion, space, perspective, tone, and composition as applied to still life, landscape, and the figure. Uses drawing media such as pencil, charcoal, ink wash, and color media. Includes field trips and gallery assignments as appropriate. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 131-132 FUNDAMENTALS OF DESIGN I-II (3 CR.) (3 CR.) Prerequisite for ART 132: ART 131. Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 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 151-152 THEORY AND PRACTICE OF CERAMICS I-II (3 CR.) (3 CR.) Prerequisite for ART 152 is ART 151. Teaches basic hand processes of pottery as applicable to tableware, decorative, functional and non-functional form. Includes throwing, coiling, slab building, and press molding. Generates a fundamental understanding of the craft through physical manipulation of materials, consideration of design techniques and historical example. Provides opportunity to work on original design from the clay to firing or glazing. Lecture 1 hour. Studio instruction 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 201-202 HISTORY OF ART I-II (3 CR.) (3 CR.) Studies the historical conflict of art of the ancient, medieval, Renaissance and modern worlds. Includes research project. Lecture 3 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 3-4 hours. Laboratory 0-2 hours. Total 3-5 hours per week.

ASL 115 FINGERSPELLING AND NUMBER USE IN ASL (2 CR.) Prerequisite: ASL 101 or permission of instructor. Provides intensive practice in comprehension and production of fingerspelled words and numbers with emphasis on clarity and accuracy. Focuses on lexicalized fingerspelling and numeral incorporation as used by native users of American Sign Language. Lecture 2 hours per week.

ASL 125 HISTORY & CULTURE OF THE DEAF COMMUNITY I (3 CR.) Presents an overview of various aspects of Deaf Culture, including educational and legal issues. Lecture 3 hours per week.

ASL 201-202 AMERICAN SIGN LANGUAGE III-IV (3-4 CR.) Prerequisite: ASL 102 or permission of instructor. Develops vocabulary, conversational competence, and grammatical knowledge with a total immersion approach. Introduces increasingly complex grammatical aspects including those unique to ASL. Discusses culture and literature. Contact with the Deaf Community is encouraged to enhance linguistic and cultural knowledge. Lecture 3-4 hours. Laboratory 0-2 hours. Total 3-5 hours per week.

AST – ADMINISTRATIVE SUPPORT TECHNOLOGY

AST 101 KEYBOARDING I (3 CR.) Co-requisite AST 140 or equivalent. Teaches the alpha/numeric 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 or equivalent. 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 hours per week.

AST 141 WORD PROCESSING I (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 201 KEYBOARDING III (3 CR.) Prerequisite: AST 102. A laboratory co-requisite (AST 202) may be required. 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 (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 (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.) Prerequisite: AST 101 and AST 140. Teaches production of business documents using word processing, databases, and spreadsheets. Emphasizes document production to meet business and industry standards. Lecture 3 hours per week.

AST 236 SPECIALIZED SOFTWARE APPLICATIONS (3 CR.) Prerequisites: AST 101 or equivalent, AST 232 and 238. A laboratory co-requisite (AST 237) may be required. Teaches specialized integrated software applications on the microcomputer. 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 a placement recommendation. 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.

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.) Prerequisite AST 102 or equivalent and a placement recommendation. 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.) Prerequisite AST 102 or equivalent and a placement recommendation. 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.

AST 253 ADVANCED DESKTOP PUBLISHING I (Word and Publisher) (3 CR.) Prerequisite: AST 101 or equivalent and word processing experience. Introduces specific desktop publishing software. Teaches document layout and design, fonts, type styles, style sheets, and graphics. Lecture 3 hours per week.

BCS – BROADCASTING (Audio & Video Production)

BCS 110 FUNDAMENTALS OF VIDEO PRODUCTION (4 CR.) Studies the use of video equipment and the application of production techniques and aesthetics in electronic media, and develops fundamental production skills through hands-on experience with cameras, video tape recorders, video switcher, graphics computers and lighting instruments. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BCS 115 AUDIO PRODUCTION FOR ELECTRONIC MEDIA (4 CR.) Studies the use of audio equipment and the application of production techniques and aesthetics in electronic media, and develops production skills through hands-on experience with mixing boards, tape recorders, compact disc players, cart machines and microphones. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BCS 116 ELECTRONIC MEDIA WRITING (3 CR.) Corequisite: ENG 111. Studies and provides practical training in the basics of electronic media writing, including advertising, promotional and informational script writing. Teaches writing theories, techniques, formats, audience analysis, appeals and production considerations. Lecture 3 hours per week.

BCS 117 ELECTRONIC JOURNALISM (3 CR.) Prerequisite or Corequisite: ENG 111. Teaches and provides practical training in electronic news reporting, writing, editing and stacking (organization). Studies electronic news ethics and responsible news gathering and reporting in a free society. Lecture 3 hours per week.

BCS 130 MEDIA PERFORMANCE (3 CR.) Prerequisite: BCS 115 or consent of instructor. Studies electronic media announcing techniques, including phonetics, pronunciation, enunciation and modes of articulatory expression. Provides practical experience through performance exercises. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

BCS 140 INTRODUCTION TO MASS MEDIA (3 CR.) Studies the development of mass media communication, including the history and technological evolution of print and electronic media. Emphasizing mass communication in the United States. Lecture 3 hours per week.

BCS 230 ADVANCED VIDEO PRODUCTION (4 CR.) Prerequisites: BCS 110 and BCS 116 or consent of instructor. Studies advanced video production techniques and aesthetics in electronic media, production planning, and producer/director responsibilities; develops advanced production skills through hands-on experience with video equipment and directing skills through student directed video productions. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

BIO – BIOLOGY

BIO 101-102 GENERAL BIOLOGY I-II (4 CR.) (4 CR.) Explores fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms, their structure, function, and evolution. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hrs. per week.

BIO 141-142 HUMAN ANATOMY AND PHYSIOLOGY I-II (4 CR.) (4 CR.) Prerequisite: 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 256 GENERAL GENETICS (4 CR.) Prerequisite: BIO 101. Explores the principles of genetics ranging from classical Mendelian inheritance to the most recent advances in the biochemical nature and function of the gene. Includes experimental design and statistical analysis. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 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 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 (4 CR.) (4 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 3 hours. Laboratory 3 hours.
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. Lecture 3 hours per week. Laboratory 3 hours per week.

BLD – BUILDING

BLD 20 INTRODUCTION TO PLUMBING (2 CR.) Presents an introduction to the principles and practices and interpreting various kinds of blueprints and working drawings with reference to local, state, and national building codes. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

BLD 25 ANALYSIS AND TROUBLESHOOTING IN PLUMBING (3 CR.) Emphasizes improving student's ability to determine the cost of materials and labor on jobs performed by plumbers. Introduces techniques and practices that aid the plumber in preparing simplified drawings of the job. Stresses techniques and practices of troubleshooting in plumbing. Lecture 2 hours. Laboratory 2 hours. Total 4 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 208 QUALITY AND PRODUCTIVITY MANAGEMENT (3 CR.) Focuses on the key quality

improvement concepts regarding products and services, customers and suppliers, and systems and processes that make quality a part of the work life of an organization. Emphasizes the role of teams, including team meeting skills and techniques, and a variety of quality improvement tools, such as flowcharts, run charts, Pareto diagrams, cause and effect diagrams, evaluation matrices, and implementation roadmaps. Lecture 3 hours per week.

BUS 221 BUSINESS STATISTICS I (3 CR.) Prerequisite: MTH 163 or divisional approval. Focuses on statistical methodology in the collection, organization, presentation, and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T distribution and hypotheses for means and proportions. Lecture 3 hours per week.

BUS 222 BUSINESS STATISTICS II (3 CR.) Prerequisite: BUS 221 or division approval. Continues study of inferential statistics and application of statistical techniques and methodology in business. Includes analysis of variance, regression and correlation measurement of business and economic activity through the use of index numbers, trend, cyclical, and seasonal effects and the Chi-Square distribution and other non-parametric techniques. Lecture 3 hours per week.

BUS 225 APPLIED BUSINESS STATISTICS (3 CR.) Prerequisites: MTH 120 and BUS 125. Introduces statistics as a tool in decision making. Emphasizes ability to collect, present, and analyze data. Employs measures of central tendency and dispersion, statistical inference, index number, and time series analysis. Lecture 3 hours per week.

BUS 241 BUSINESS LAW I (3 CR.) Develops a basic understanding of the US business legal environment. Introduces property and contract law, agency and partnership liability, and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships, and other business transactions. Lecture 3 hours per week.

BUS 266 PRODUCTION AND OPERATIONS MANAGEMENT (3 CR.) Examines the process by which both goods and services- producing businesses, many not-for-profit institutions, and governmental agencies transform resources into an end product to meet the demands of customers or clients. Includes a survey of some of the quantitative methods involved in the process. 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.) 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.) Prerequisite: CHD 121, CHD 122, CHD 165 and CHD 265 or by instructor 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.) Observes and participates in early childhood settings such as child care centers, pre-school, Montessori schools, or public school settings (kindergarten - third grade). Emphasizes planning and implementation of appropriate activities and materials for children. Students will spend one hour each week in a seminar session in addition to 60 clock hours in the field. May be taken again for credit. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

CHD 270 ADMINISTRATION OF EARLY CHILDHOOD PROGRAMS (3 CR.) Examines skills needed for establishing and managing early childhood programs. Emphasizes professionalism and interpersonal skills, program planning, staff selection and development, creating policies, budgeting and developing forms for recordkeeping. Lecture 3 hours per week.

CHM – CHEMISTRY

CHM 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 per week. Laboratory 2 hours per week. 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. Laboratory 6 hours per week.

CIV – CIVIL ENGINEERING TECHNOLOGY

CIV 130 CONSTRUCTION PLANNING (3 CR.) Co-Requisite: MTH 115 or equivalent. Introduces the principles and economics of construction planning. Discusses contract types, relationships between the owner, contractor and architect, professional liability, and the critical path method (CPM). Lecture 3 hours per week.

CIV 171 SURVEYING I (3 CR.) Prerequisite: MTH 115 or equivalent. 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.

CIV 225 SOIL MECHANICS (2 CR.) Focuses on soil in its relationship to engineering construction. Includes soil composition and structure, weight-volume relationships, sampling procedures, classification systems, water in soil, stresses, strains, bearing capacity, settlement and expansion, compaction, stabilization, and introduction to foundations and retaining walls. Also, an introduction to concrete mix design is presented. Lecture 2 hours per week.

CSC – COMPUTER SCIENCE

CSC 201 COMPUTER SCIENCE I (4 CR.) Corequisite 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.

DEC – DECORATING

DEC 100 INTRODUCTION TO INTERIOR DECORATING (3 CR.) Presents the elements and principles of residential design with emphasis on space planning, color, lighting, materials, furnishings and costing. Lecture 3 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 hrs. 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.) 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.) 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.) Teaches advanced CAD applications. Includes customization and/or use of advanced software. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Also 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 115 ENGINEERING GRAPHICS (2 CR.) Corequisite: MTH 166 or equivalent. Applies principles of orthographic projection and multi-view drawings. Teaches descriptive geometry including relationships of points, lines, planes and solids. Introduces sectioning, dimensioning, and computer graphic techniques. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

EGR 124 INTRODUCTION TO ENGINEERING AND ENGINEERING METHODS (3 CR.) Corequisites: MTH 175 and MTH 177. Introduces the engineering profession, professionalism, and ethics. Covers problem presentation, engineering calculations, digital computer applications, word processing, worksheets, programming in 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.

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. Lecture 3 hrs. 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: 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.) 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, 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 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.

ELE – ELECTRICAL TECHNOLOGY

ELE 110 HOME ELECTRIC POWER (3 CR.) Covers the fundamentals of residential power distribution, circuits, panels, fuse boxes, breakers, 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 Corequisite: 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 departmental approval. Deals with installation, programming, interfacing, and concepts of troubleshooting programmable controllers. Lecture 1 hour per week. Laboratory 2 hours per week. Total 3 hours per week.

ENG – ENGLISH

ENG 01 PREPARING FOR COLLEGE WRITING I (4 CR.) Helps students discover and develop writing processes needed for the proficiency level necessary to enter their respective curricula. Guides students through the process of starting, composing, revising, and editing. Lecture 4 hours per week.

ENG 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 07 WRITING AND READING IMPROVEMENT I (8 CR.) Provides an integrated approach to developing students' writing and reading processes. Prepares students to complete assignments successfully by providing them with reading and writing strategies. Lecture 8 hours per week.

ENG 111-112 COLLEGE COMPOSITION I-II (3 CR.) (3 CR.) Develops writing ability for study, work, and other areas of writing based on experience, observation, research, and reading of selected literature. Guides students in learning writing as a process: understanding audience and purpose, exploring ideas and information, composing, revising, and editing. Supports writing by integrating, composing, revising, and editing. Supports writing by integrating experiences in thinking, reading, listening, and speaking. 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 219 CREATIVE WRITING - DRAMA (3 CR.) Introduces the fundamentals and techniques of writing plays. 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.

ENG 273 WOMEN IN LITERATURE I (3 CR.) Prerequisite ENG 112 or division approval. Examines literature by and about women. Involves critical reading and writing. Lecture 3 hours per week.

ESL – ENGLISH AS A SECOND LANGUAGE

ESL 11 ENGLISH AS A SECOND LANGUAGE: COMPOSITION 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.

ESL 14 ENGLISH AS A SECOND LANGUAGE: ORAL AND WRITTEN COMMUNICATIONS I (3 CR.) Provides practice in the sound, stress, intonation, structural patterns, grammar, vocabulary, and idioms of beginning-level English in frequently encountered situations. Lecture 3 hours per week.

ESL 15 ENGLISH AS A SECOND LANGUAGE: ORAL AND WRITTEN COMMUNICATIONS II (3 CR.) Provides practice in the sound, stress, intonation, structural patterns, grammar, vocabulary, and idioms of intermediate-level English in frequently encountered situations. Lecture 3 hours per week.

ESR – ELECTRONIC SERVICING

ESR 120 SHOP SKILLS AND SAFETY (2 CR.) Develops basic skills necessary for safe use of shop tools required for fabrication and component replacement. Includes soldering and desoldering techniques. Lecture 1 hours. Laboratory 3 hours. Total 4 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. Corequisite: 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.) Corequisite: 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 hours.

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 241 ELECTRONIC COMMUNICATIONS (3 CR.) Prerequisite: ETR 255 or equivalent. Studies noise, information and bandwidth, modulation and demodulation, transmitters and receivers, wave propagation, antennas and transmission lines. Includes broad band communication systems, microwave, both terrestrial and satellite, fiber optics, multiplexing and associated hardware. Lecture 2 hours. Laboratory 3 hours. Total 5 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.

FIR – FIRE SCIENCE

FIR 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.

FIR 112 FUNDAMENTALS OF HAZARDOUS MATERIALS (3 CR.) Introduces the chemistry of hazardous materials including solids, liquids, gases, and methods used in their identification. Examines the use, handling, transportation, and environmental problems associated with hazardous materials. Lecture 3 hours per week.

FIR 140 FIRE OFFICER I (4 CR.) Prerequisite: FIR 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.

FIR 230 INVESTIGATION PROCEDURES (3 CR.) Introduces the development and philosophy of fire investigation and detection, including inspection techniques, gathering of evidence and development of a criminal procedure to conform to judicial requirements. Lecture 3 hours per week.

FIR 238 EMERGENCY SERVICES ADMINISTRATION (3 CR.) Prerequisite: FIR 140. Provides an overview of management and administration methods and procedures in fire service and emergency medical services organizations. Includes ethical and legal considerations, budget preparation, records management, public relations, conflict resolution, intergovernmental relationships, cultural diversity, and personnel management issues. Discusses managerial attitudes and decisions, general and strategic organizational planning and career development. Lecture 3 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 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) 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. Prerequisite: IST 117 or instructor approval. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 201 GEOGRAPHICAL INFORMATION SYSTEMS II (4CR.) 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.

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 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 per week. Laboratory 3 hours per week. 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 111-112 HISTORY OF WORLD CIVILIZATION I-II (3 CR) (3 CR) Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present. Lecture 3 hours per week.

HIS 121-122 UNITED STATES HISTORY I-II (3 CR.) (3 CR.) Surveys United States history from its beginning to the present. HIS 121 covers America from the 1500s to 1865 and HIS 122 continues the course to the 1990s. Courses may be taken out of sequence. Lecture 3 hours per week.

HIS 141-142 AFRICAN-AMERICAN HISTORY I-II (3 CR.) (3 CR.) Surveys the history of black Americans from their African origins to the present. 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 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 276 UNITED STATES HISTORY SINCE WORLD WAR II (3 CR.) Investigates United States history from 1945 to the present, studying both domestic developments and American involvement in international affairs. 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.

HIS 281-282 HISTORY OF VIRGINIA I-II (3 CR.) (3 CR.) Examines the cultural, political, and economic history of the Commonwealth from its beginning to the present. 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 proof reading 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 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 253 HEALTH RECORDS CODING (4-5 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 3-4 hours. Laboratory 0-3 hours. Total 3-7 hours per week.

HIT 254 ADVANCED CODING AND REIMBURSEMENT (3-4 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 3-4 hours. Laboratory 0-3 hours. Total 3-6 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

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.

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 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 155 CURRENT ISSUES AND HEALTH CARE (2 CR.) Focuses on current issues in the health care industry. Lecture 2 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, 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 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 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 207 AMERICAN REGIONAL CUISINE (3 CR.) Studies the distinct regional cooking styles of America and its neighbors. Emphasizes the indigenous ingredients as well as the cultural aspect of each region's cooking style. Includes the preparation of the various regional foods. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 251 FOOD AND BEVERAGE COST CONTROL I (3 CR.) Presents methods of pre-cost and pre-control as applied to the menu, purchasing, receiving, storing, issuing, production, sales and service which result in achievement of an operation's profit potential. Emphasizes both manual and computerized approaches. Lecture 3 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 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 106 THREE DIMENSIONAL DRAWING AND RENDERING (3 CR.) Provides instruction in graphic presentation of three- dimensionally drawn interiors. Presents the use of colored media to render three-dimensional drawings. 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 235 ANTIQUES (3 CR.) Involves the process of research, authentication, and determinating provenance. Covers examples of furnishings, fixtures, textiles, glass, and ceramics. May provide field trips, lectures, examination, and discussion to assist in determining age, condition and other properties. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

IDS 245 COMPUTER AIDED DRAFTING FOR INTERIOR DESIGNERS (3 CR) 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 174 STRATEGIC MANAGEMENT OF RESOURCES (2 CR.) Explores the relationship of existing and emerging processes and technologies of manufacturing strategy and supply chain-related function. Addresses three main topics: aligning recourses with the strategic plan, configuring and integrating processes to support the strategic plan and implementing change. Lecture 2 hours per week.

IND 176 EXECUTION AND CONTROL OF OPERATIONS (2 CR.) Focuses on the areas of prioritizing and sequencing work, executing work plans and implementing controls, reporting activity results, and providing evaluation feedback on performance. Explains techniques for scheduling and controlling production processes, the execution of quality initiatives and continuous improvement plans, and the control and handling of inventories. Lecture 2 hours per week.

IND 177 DETAILED SCHEDULING AND PLANNING (2 CR.) Focuses on the various techniques for material and capacity scheduling. Includes detailed descriptions of material requirements planning (MRP), capacity requirements planning (CRP), inventory management practices and procurement and supplier planning. Lecture 2 hours per week.

IND 178 MASTER PLANNING OF RESOURCES (2 CR.) Explores processes used to develop sales and operations plans, and identify and assess internal and external demand and forecasting requirements. Focuses on the importance of producing achievable master schedules that are consistent with business policies, objectives and resource constraints. Lecture 2 hours per week.

IND 179 BASCIS OF SUPPLY CHAIN MANAGEMENT (2 CR.) Covers basic concepts in managing the complete flow of materials in a supply chain. Covers a complete overview of material flow, from internal and external suppliers to and from organization. Lecture 2 hours per week.

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 (IST 135) **(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.

ITD 130 DATABASE FUNDAMENTALS (IST 133) **(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.

ITD 132 STRUCTURED QUERY LANGUAGE (IST 132) **(3 CR.)** Provides a working introduction to commands, functions and operators used in SQL for extracting data from standard databases.

ITD 136 DATABASE MANAGEMENT SOFTWARE (IST 133) **(4 CR.)** Provides an

introduction to relational database theory and how to administer and query databases using multiple commercial database systems.

ITD 210 WEB PAGE DESIGN II (IST 226) **(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).

ITD 220 E-COMMERCE ADMINISTRATION (NEW) **(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.

ITD 250 DATABASE ARCHITECTURE AND ADMINISTRATION (IST 232) **(3 CR.)** Corequisite: 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.

ITD 258 DATABASE PERFORMANCE AND TUNING (IST 239) **(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.

ITE – INFORMATION TECHNOLOGY ESSENTIALS

ITE 101 INTRODUCTION TO MICROCOMPUTERS (IST 102) **(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.

ITE 102 COMPUTER AND INFORMATION SYSTEMS (IST 113) **(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.

ITE 115 BASIC COMPUTER LITERACY (IST 117) **(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.

ITE 140 SPREADSHEET SOFTWARE (IST 123) **(3 CR.)** The student will use spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics will include type and edit text in a cell, enter data on multiple worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data. This course covers MOS Excel objectives.

ITE 160 INTRODUCTION TO E-COMMERCE (IST 112) **(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.

ITN – INFORMATION TECHNOLOGY NETWORKING

ITN 101 INTRODUCTION TO NETWORK CONCEPTS (IST 200) **(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.

ITN 111 WINDOW 2000 SERVER (NEW) **(3 CR.)** Prerequisite: ITN 101. Installation, configuration, administration, monitoring, and troubleshooting of Windows 2000 Server in an Active Directory domain environment. Maps to Microsoft test 70-215.

ITN 112 WINDOWS 2000 NETWORK INFRASTRUCTURE ADMINISTRATION (NIA) (New) **(3 CR.)** Prerequisite: ITN 101. Provides instruction in installation, configuration, administration, monitoring, and troubleshooting of Windows 2000 Server services, such as NDS, DHCP, WINS, RRAS, NAT, and Certification Authority to support the network infrastructure. Maps to Microsoft Test 70-216.

ITN 114 WINDOWS XP PROFESSIONAL (NEW) **(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.

ITN 115 WINDOW 2003 SERVER (SER) (NEW) **(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.

ITN 116 WINDOWS 2003 NETWORK INFRASTRUCTURE IMPLEMENTATION, MANAGEMENT, AND MAINTENANCE (NI-IMM) (NEW) **(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.

ITN 117 WINDOWS 2003 NETWORK INFRASTRUCTURE PLANNING AND MAINTENANCE (NI-PM) (New) **(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.

ITN 118 WINDOWS 2003 ACTIVE DIRECTORY INFRASTRUCTURE PLANNING, IMPLEMENTATION, AND MAINTENANCE (ADI-PIM) (NEW) **(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.

ITN 170 LINUX SYSTEM ADMINISTRATION (NEW) **(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.

ITN 171 UNIX I (IST 108) **(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.

ITN 210 DIRECTORY SERVICES INFRASTRUCTURE DESIGN FOR WINDOWS 2000 (NEW) **(4 CR.)** Prerequisite: ITN 111 or instructor permission. This course provides students with the knowledge and skills necessary to analyze business requirements and design a directory service architecture that includes: unified and Windows NT domains: connectivity between and within systems; system components, and applications; and data replication, such as directory replication and database replication. This course maps to Microsoft test 70-219.

ITN 211 WINDOW 2000 SECURITY DESIGN (NEW) **(4 CR.)** Prerequisite: ITN 111 or instructor permission. Designing security framework for small, medium, and enterprise networks using Microsoft Windows 2000 technologies. This course contains information that provides secure access to local networks, secure access to remote users and remote offices, secure access between private and public networks and secure access to partners. This course maps to Microsoft test 70-220.

ITN 212 MANAGING A WINDOWS 2000 NETWORK ENVIRONMENT (NEW) **(3 CR.)** Prerequisite: ITN 215 (can be a corequisite). Creating, configuring, managing, securing and troubleshooting file, print, and web resources; the network infrastructure; server and client computers; active directory organizational units and group policy; and remote access with Windows 2000. Maps to Microsoft test 70-218.

ITN 215 WINDOWS 2000 NETWORK INFRASTRUCTURE DESIGN (NEW) **(3 CR.)** Prerequisite: ITN 111. Analysis of business requirements for a network infrastructure and design a network infrastructure that meets business requirements including network topology, routing, IP addressing, WINS, DNS, VPN remote access and telephony in an enterprise environment. Maps to Microsoft test 70-221.

ITN 240 WINDOWS 2003 ACTIVE DIRECTORY AND NETWORK INFRASTRUCTURE DESIGN (AD-NID) (NEW) **(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.

ITN 241 WINDOWS 2003 SECURITY DESIGN (SD) (NEW) **(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.

ITN 242 WINDOWS MICROSOFT EXCHANGE 2003 SERVER (ES03) (NEW) **(3 CR.)** Prerequisite: ITN 115. This course teaches the student how to implement, manage, and troubleshoot an Exchange Server 2003 organization. Maps to Microsoft Test 70-284.

ITN 243 WINDOWS 2003 SECURITY IMPLEMENTATION AND ADMINISTRATION (S-IA) (NEW) **(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.

ITN 263 INTERNET/INTRANET FIREWALL AND E-COMMERCE SECURITY (IST 248) **(3 CR.)** Prerequisite: ITN 101 or substantial network background and instructor permission. Provides an in-depth exploration of firewall, Web security and e-commerce security. Course content also explores firewall concepts, types, topology and the firewall's relationship to the TCP/IP protocol. Course content also includes client/server architecture, the Web server, HTML and HTTP in relation to Web Security, and digital certification, D.509, and public key infrastructure (PKI).

ITN 271 UNIX II (NEW) **(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.

ITP – INFORMATION TECHNOLOGY PROGRAMMING

ITP 112 VISUAL BASIC .NET I (IST 176) **(4 CR.)** Prerequisite: (or corequisite) ITE101 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.

ITP 120 JAVA PROGRAMMING I (IST 149) **(4 CR.)** Prerequisite: (or corequisite) ITE101 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.

ITP 132 C++ PROGRAMMING I (IST 156) **(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.

ITP 152 RPG PROGRAMMING I (IST 168) **(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.

ITP 155 OPERATIONS OF MID-RANGE COMPUTERS (IST 155) **(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.

ITP 159 CONTROL LANGUAGE I (IST 159) **(3 CR.)** Prerequisite: ITP 155 (can be a corequisite). 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.

ITP 170 PROJECT MANAGEMENT (NEW) **(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.

ITP 175 CONCEPTS OF PROGRAMMING LANGUAGES (IST 153) **(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.

ITP 212 VISUAL BASIC .NET II (IST 276) **(4 CR.)** Prerequisite: ITP 112, ITD 136 (corequisite). 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.

ITP 215 XML WEB SERVICES (NEW) **(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.

ITP 216 ANALYZING REQUIREMENTS FOR MICROSOFT .NET SOLUTION ARCHITECTURES (NEW) **(4 CR.)** Prerequisite: ITP 112 or instructor permission. This certification exam measures your ability to analyze requirements and define Microsoft .NET solution architectures. This includes envisioning the solution, gathering and analyzing business requirements, developing specifications, creating the conceptual, physical, and logical design, and creating standards and processes. Maps to Microsoft test 70-300.

ITP 220 JAVA PROGRAMMING II (IST 249) **(4 CR.)** Prerequisite: ITP 120, ITD 136 (corequisite). 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.

ITP 244 ASP.NET -- SERVER-SIDE PROGRAMMING (IST 229) **(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.

ITP 246 SERVER-SIDE JAVA (IST 227) **(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.

ITP 248 E-COMMERCE APPLICATION INTEGRATION (IST 211) **(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.

ITP 252 RPG PROGRAMMING II (IST 268) **(4 CR.)** Prerequisite: ITP 152. Provides instruction in advanced structured programming techniques and procedures for complex applications using RPG.

ITP 255 ADVANCED CONCEPTS IN MID-RANGE COMPUTING (IST 209) **(3 CR.)** Prerequisite: ITP 155. Provides instruction in advanced concepts and capabilities of data communication and networking on midrange systems, types and uses of integrated business-based applications, and detailed operations. Course content includes emerging technologies as it relates to specific systems.

ITP 259 CONTROL LANGUAGE II (IST 282) **(3 CR.)** Prerequisite: ITP 159. Provides instruction in advanced techniques of Control Language (CL). Course content includes working with message queues and messages, using override commands, accessing system functions using APIs, displaying and changing command attributes, interpreting jobs logs and dumps, creating menus, and writing CL programs using advanced techniques.

ITP 298 CAPSTONE (IST 255) **(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.

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 199 COORDINATED INTERNSHIP IN LEGAL ASSISTING (3 CR.) Supervised on-the-job training in law-related fields approved by the College.

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 220 ADMINISTRATIVE PRACTICE AND PROCEDURE (3 CR.) Surveys applicable administrative laws, including the Privacy Act, the Administrative Process Act, and the Freedom of Information Act. Studies practice and procedure involving the ABC Commission, State Corporation Commission, Division of Workers' Compensation, Social Security Administration, the Virginia Employment Commission, and other administrative agencies. Lecture 3 hours per week.

LGL 225 ESTATE PLANNING AND PROBATE (3 CR.) Introduces various devices used to plan an estate, including wills, trusts, joint ownership and insurance. Considers various plans in light of family situations and estate objectives. Focuses on practices involving administration of an estate, including taxes and preparation of forms. Lecture 3 hours per week.

LGL 230 LEGAL TRANSACTIONS (3 CR.) Presents an in-depth study of general contract law, including formation, breach, enforcement, and remedies. May include an overview of the Uniform Commercial Code sales, commercial paper, and collections. Lecture 3 hours per week.

LGL 235 LEGAL ASPECTS OF BUSINESS ORGANIZATIONS (3 CR.) Studies the fundamental principles of agency law and the formation of business organizations. Includes sole proprietorship, partnerships, corporations, limited liability companies, and other business entities. Reviews preparation of the documents

necessary for the organization and operation of businesses. Lecture 3 hours per week.

LGL 238 BANKRUPTCY (3 CR.) Provides a practical understanding of nonbankruptcy alternatives and the laws of bankruptcy including Chapters 7, 11, 12 and 13 of the Bankruptcy Code. Emphasis will be placed on preparing petitions, schedules, statements and other forms. Lecture 3 hours per week.

MAC – MACHINE TECHNOLOGY

MAC 131 MACHINE LAB I (3 CR.) Teaches fundamental machine shop operations, bench work, layout, measuring tools, and safety. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEC – MECHANICAL ENGINEERING TECHNOLOGY

MEC 113 MATERIALS AND PROCESSES OF INDUSTRY (3 CR.) Studies engineering materials and accompanying industrial manufacturing processes. Investigates nature of materials structure and properties from a design standpoint. Analyzes the effects of the various processes on materials and the process themselves. Includes machining, casting, forming, molding, hot/cold working, chipless machining, and welding. Addresses quality assurance and inspection procedures. Lecture 3 hours per week.

MEC 119 INTRODUCTION TO BASIC CNC AND CAM (3 CR.) Prerequisite: MAC 131 or permission of instructor. 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.

MEC 211-212 MACHINE DESIGN I-II (4 CR.) (4 CR.) Prerequisite: MEC 132. Introduces analytical design of bearings, clutches, coupling, brakes, springs, gearing systems, and power shafting. Emphasizes methods of construction, machine parts and specifications of materials, and manufacturing processes. Lecture 3 hours. Laboratory 3 hours. Total 6 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.

MKT – MARKETING

MKT 100 PRINCIPLES OF MARKETING (3 CR.) Presents principles, methods, and problems involved in the marketing of goods, services and ideas to consumers and organizational buyers. Discusses present-day problems and policies connected with distribution and sale of products, pricing, promotion, and buyer motivation. Examines variations of the marketing mix and market research, plus legal, social ethical and international considerations in marketing. Lecture 3 hours per week.

MKT 110 PRINCIPLES OF SELLING (3 CR.) Presents fundamental aspects of personal selling, sales, and selling methods. Emphasizes professional sales techniques and ethics. Examines organization necessary for a well-coordinated sales effort, including the training of sales personnel for maximum efficiency in selling and organization of the sales division within the business enterprise. Introduces sales management in planning, organizing, directing, and controlling the total sales effort. Lecture 3 hours per week.

MKT 220 PRINCIPLES OF ADVERTISING (3 CR.) Emphasizes the role of advertising in marketing goods, services and ideas. Discusses the different uses of advertising; types of media; how advertising is created; agency functions; and legal, social, and economic aspects of the industry. Lecture 3 hours per week.

MKT 275 INTERNATIONAL MARKETING (3 CR.) Examines the role of the multinational firm, as well as the environments in which they operate. Covers such factors as exchange rates, government foreign trade policy, and social-cultural factors. Compares international and domestic marketing strategies. Lecture 3 hours per week.

MKT 276 INTERNATIONAL MARKETING MANAGEMENT (3 CR.) Presents the process of marketing and management and applies it to the marketing of products within the global marketplace. Introduces the student to activities involving the gathering and analyzing of information in the development and implementation of an international marketing plan. Lecture 3 hours per week.

MTH – MATHEMATICS

MTH 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.) Corequisite: 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.) Corequisite: 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.) Corequisite: MTH 176 or equivalent. Presents topics in mathematical Structures of value to students majoring in Computer Science or other disciplines requiring programming skills. Covers logic, set theory, number theory, combinatorics, functions, relations, and graph theory. Lecture 3 hours per week.

MTH 291 DIFFERENTIAL EQUATIONS (3 CR.) Prerequisite: 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 per week. 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 per week. Recitation and laboratory 3 hours per week. Total 6 hours per week.

NAS 171 HUMAN ANATOMY AND PHYSIOLOGY I (4 CR.) Presents the human organ systems and their functions as they relate to allied health science. Emphasizes systems of importance to Radiography. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week.

NAS 185 MICROBIOLOGY (4 CR.) Prerequisite: High school biology or BIO 101. Surveys microorganisms, presenting their characteristics and activities as related to health and disease. Lecture 3 hours per week. Recitation and laboratory 2 hours per week. Total 5 hours per week.

NUR – NURSING

NUR 26 NURSING ASSISTANT ADVANCED (3 CR.) Focuses on theory and provides laboratory experiences in asepsis, sterile techniques, tube feedings, and other skills required by nursing assistants in health care agencies. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

NUR 27 NURSE AIDE I (3-5 CR.) Teaches care of older patients with emphasis on the social, emotional, and spiritual needs. Covers procedures; communication and interpersonal relations; observation, charting and reporting; safety and infection control; anatomy and physiology; personal care, nutrition and patient feeding; death and dying. May include laboratory or clinical hours. Lecture 2-4 hours. Laboratory 3-9 hours. Total 6-11 hours per week.

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 (4 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 4 hours. Total 4 hours per week.

NUR 121 NURSING FUNDAMENTALS I (10 CR.) Corequisite: 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. Corequisites: 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 221-222 SECOND LEVEL NURSING PRINCIPLES AND CONCEPTS I, II (10 CR.) (10 CR.) Prerequisites for NUR 221: NUR 122, NAS 185, BIO 141, BIO 142. Corequisite for NUR 221: PSY 200. Prerequisites for NUR 222: NUR 221 and PSY 200. Corequisite for NUR 222: PSY 238. Focuses on 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. 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 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.) 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.) 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.

PBS – PUBLIC SERVICE

PBS 100 INTRODUCTION TO PUBLIC ADMINISTRATION (3 CR.) Focuses on principles underlying public administration in federal, state and local government. Examines the role of government, administrative and policy processes, organizational structure, basic problems of management, administrative responsibility, and the future of public administration. Lecture 3 hours per week.

PBS 105 PERSONNEL MANAGEMENT IN THE PUBLIC SECTOR (3 CR.) Studies modern public service, including personnel in government; personnel management, benefits and wages, staffing, and growth and development. Also examines issues of public personnel management, motivation, productivity, labor management relations, equal opportunity through affirmative action, and professionalism. Lecture 3 hours per week.

PBS 116 PUBLIC BUDGETING AND FINANCE (3 CR.) Reviews history of different approaches to public budgeting and examines the budgeting process in government. Examines the development of public planning at all levels of government with an emphasis on budgetary process. Gives consideration to revenue sources, administration, and structure. Lecture 3 hours per week.

PBS 136 GRANTSMANSHIP (3 CR.) Examines development, sources, and purposes of grants in intergovernmental cash flow. Focuses on application procedures, applications management and financial reporting, and development of management systems in accordance with grant pacing factors. Students develop written grant proposals, including objectives, plan of implementation, budget, and evaluation. Lecture 3 hours per week.

PBS 266 GROUP LEADERSHIP (3 CR.) Focuses on the dynamics of individual behavior and group processes. Examines the role of group members decision making, use of power, creativity and controversy, problem solving, and group goals. Lecture 3 hours per week.

PED – PHYSICAL EDUCATION AND RECREATION

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. Lecture 1 hour. Laboratory 1 hour. 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. Lecture 1 hour. Laboratory 1 hour. 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. Lecture 1 hour. Laboratory 1 hour. 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. Lecture 1 hour. Laboratory 1 hours. 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. Lecture 1 hour. Laboratory 1 hour. 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. Lecture 1-2 hours. Laboratory 0-2 hours. Total 1-3 hours per week.

PED 133-134 GOLF I-II (1 CR.) Teaches basic skills of golf, rules, etiquette, scoring, terminology, equipment selection and use, and strategy. Lecture 1 hours. Laboratory 1 hours. 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. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 137-138 MARTIAL ARTS I-II (2 CR.) Emphasizes forms, styles, and techniques of body control, physical and mental discipline, and physical fitness. Presents a brief history of development of martial arts theory and practice. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 139 ICE SKATING (1 CR.) Introduces the skills of figure skating with emphasis on form. Includes equipment selection and safety. Lecture 1 hour. Laboratory 1 hour. Total 2 hours per week.

PED 141-142 SWIMMING I-II (1 CR.) Introduces skills and methods of swimming strokes. Focuses on safety and physical conditioning. Lecture 1 hour. Laboratory 1 hour. Total 2 hours per week.

PED 152 BASKETBALL (1 CR.) Introduces basketball skills, techniques, rules, and strategies. Lecture 1 hour. Laboratory 1 hour. Total 2 hours per week.

PED 154 VOLLEYBALL (2 CR.) Introduces skills, techniques, strategies, rules, and scoring. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 245 LIFEGUARD TRAINING (2 CR.) Prerequisite: Ability to swim continuously for 500 yards for a minimum of 100 yards each of crawl/freestyle, breaststroke, and sidestroke; submerge to a minimum of 7 feet, retrieve a 10 pound object and return it to the surface; tread water for 2 minutes using legs only; and be 15 years of age by the first class. Introduces basic swimming and non-swimming rescues, swimming approaches and carries, water survival, first aid and safety. Focuses on preparation for the American Red Cross Lifeguard Certificate. Lecture 1 hour. Laboratory 2 hours. Total 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 PHOTOGRAPHY I (3 CR.) Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Lecture 1 hr. Laboratory 4 hrs. Total 5 hrs. per week.

PHT 107 NATURE PHOTOGRAPHY (3 CR.) Teaches fundamentals of 35mm color slide photography of natural objects. Emphasizes selection of equipment and film, compositional theory, and the flash photography formula. Lecture 2 hours. Laboratory 2 hours. Total 4 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 247 ALTERNATIVE PHOTOGRAPHIC PROCESSES (3 CR.) Explores manipulated imagery including traditional and non- traditional processes such as non-silver and electronic imaging. Uses enlarged film negatives in order to investigate a variety of methods. Prerequisite PHT 102 or equivalent. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHY – PHYSICS

PHY 201-202 GENERAL COLLEGE PHYSICS I-II (4 CR.) (4 CR.) Prerequisites: MTH 113 or MTH 163 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 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 4-7 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 173 PHARMACOLOGY FOR PRACTICAL NURSES (2 CR.) Studies history, classification, sources, effects, uses and legalities of drugs. Teaches problem solving skills used in medication administrations. Emphasizes major drug classes and specific agents within each class. Lecture 2 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.

PNE 195 TOPICS IN PRACTICAL NURSING. (5 CR.) Studies etiology, symptoms, prescribed medical treatment, nutritional and kinesiological principles, and nursing interventions appropriate for the care of patients with selected disorders. Lecture 5 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 126 PSYCHOLOGY FOR BUSINESS AND INDUSTRY (3 CR.) Focuses on the application of psychology to interpersonal relations and the working environment. Includes topics such as group dynamics, motivation, employee-employer relationship, interpersonal communications. May include techniques for selection and supervision of personnel. 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 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 hrs. per week.

REA 215 REAL ESTATE BROKERAGE (3 CR.) Prerequisite: REA 100. Considers administrative principles and practices of real estate brokerage, financial control, and marketing of real property. Lecture 3 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.

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 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 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 145 QUALITY ASSURANCE (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 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 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 244 PROFESSIONAL SEMINAR (1 CR.) Prerequisites/Corequisites: All Radiation Oncology Core Courses. Designed to correlate all major radiation oncology subject areas in preparation for national certification. Lecture 1 hour 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 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.

SAF – SAFETY

SAF 120 SAFETY & HEALTH STANDARDS: REGULATIONS AND CODES (3 CR.) Teaches development of safety standards, the Occupational Safety and Health Act (OSHA), its rules and regulations; penalties for non-compliance, and methods of compliance. Includes an examination of Government Regulatory Codes and appraisal of consensus, advisory, and proprietary standards. Lecture 3 hours per week.

SAF 126 PRINCIPLES OF INDUSTRIAL SAFETY (3 CR.) Teaches principles and practices of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, housekeeping, occupational diseases, first aid, safety organization, protection equipment and general safety principles and promotion. Lecture 3 hours per week.

SAF 140 INTRODUCTION TO INDUSTRIAL HYGIENE (3 CR.) Studies environmental energy, physical and chemical hazards, including gases, vapors, dusts, fumes, and mists; the importance of personal protective equipment, and contamination control methodology. Lecture 3 hours per week.

SAF 246 HAZARDOUS CHEMICALS, MATERIALS, AND WASTE IN THE WORKPLACE (3 CR.) Introduces the rules and regulations governing use, exposure to, and disposal of hazardous chemicals, materials and waste by-products. Discusses OSHA "Right to Know Laws," EPA and RCRA regulations. Provides the techniques to interpret and understand the code of Federal Regulations. Emphasis on management mandates, strategies, and options to comply with these regulations. Lecture 3 hours 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 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 136 THEATRE WORKSHOP (1-6 CR.) Enables students to work in various activities of play production. The student participates in performance, set design, stage carpentry, sound, costuming, lighting, stage managing, props, promotion, or stage crew. May be repeated for credit. Variable hours per week.

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.

STD – STUDENT DEVELOPMENT

STD 100 ORIENTATION (1 CR.) Assists students in transition to college. Provides overviews of college policies, procedures, 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.

STD 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.

STD 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.

STD 105 PERSONAL DEVELOPMENT FROM A WOMAN'S PERSPECTIVE (2 CR.) Addresses the psychological and educational adjustment needs of the female college student. Covers three segments: personal development, career education, and study skills. Emphasizes the special needs of the re-entry woman. Provides education and support for the individual. Lecture 2 hours per week.

STD 107 CAREER EDUCATION (2 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 STD 100. Lecture 2 hours per week.

STD 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.

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 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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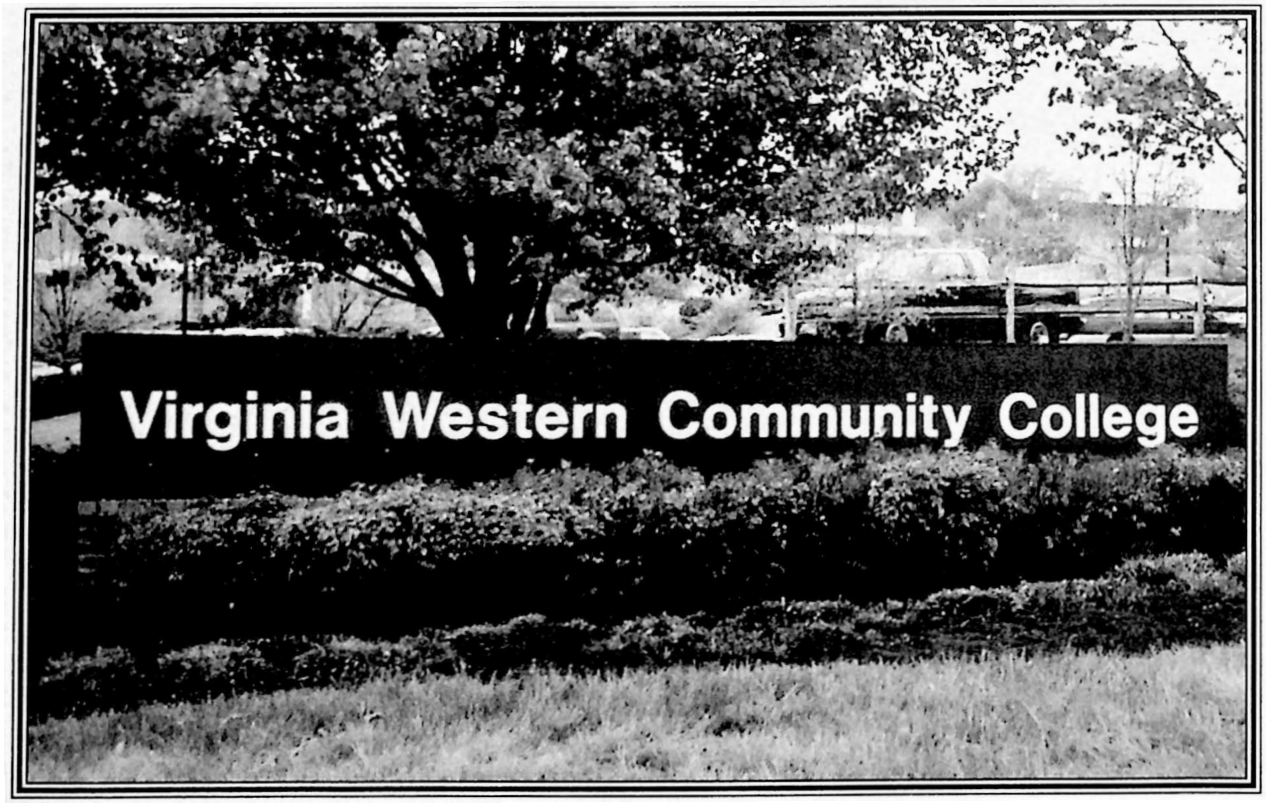

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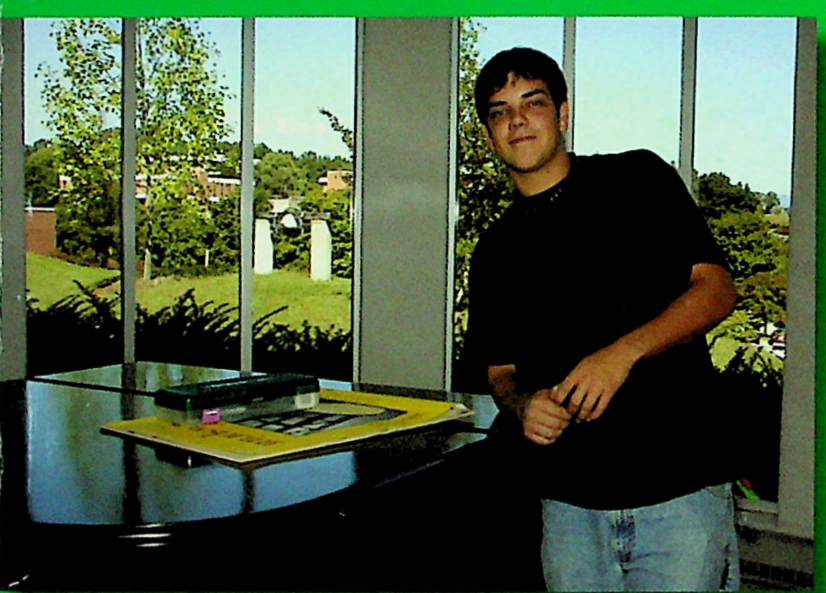

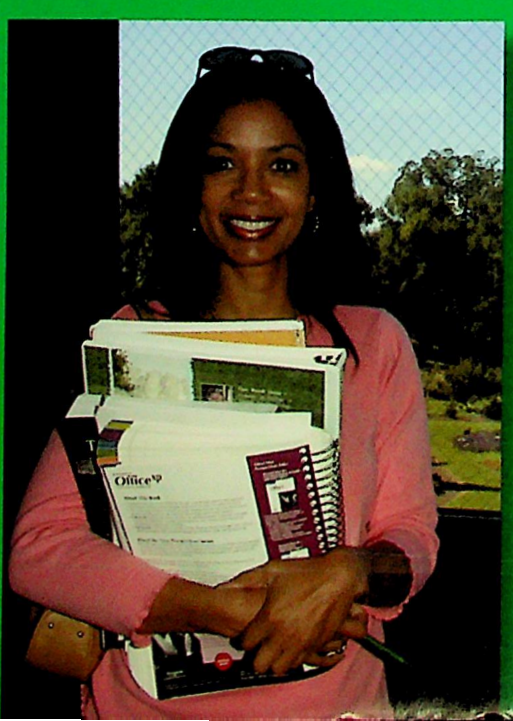

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