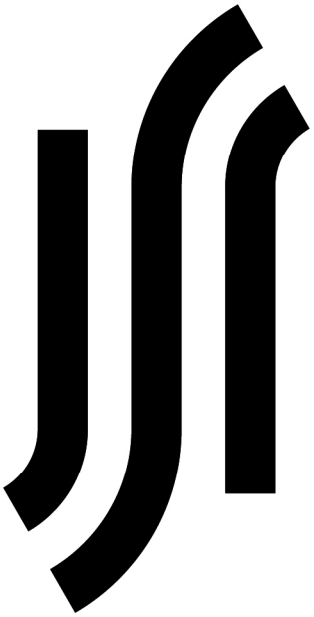
J. Sargeant Reynolds Community College

2010-2011 CATALOG

the opportunity college

J. Sargeant Reynolds Community College



College Catalog 2010-2011

J. Sargeant Reynolds Community College
Post Office Box 85622
Richmond, Virginia 23285-5622

The procedures, programs, courses, regulations, rules and policies listed in this catalog are subject to change by the college, the College Board, the Virginia Community College System, or the State Board for Community Colleges. For the most up to date catalog information visit the college website at www.reynolds.edu.

A MESSAGE FROM THE PRESIDENT

Welcome to J. Sargeant Reynolds Community College—where your dreams are closer than you think! Each year thousands of students enroll at Reynolds for a wide variety of reasons. In some cases, many of are successfully employed but seek a promotion or career change. Some decide not to go away to college right after high school and Reynolds is a convenient option for them. Still, others take advantage of a second chance to go back to college after a number of years away from campus to complete a certificate or degree program. Whatever the reason, Reynolds offers an opportunity to develop real skills and knowledge for the new economy.

Our mission is to offer you a quality education that is comprehensive, innovative, accessible, affordable, and responsive to the changing workforce needs of the community. Our promise is that we will provide exciting opportunities for quality learning and personal development that unlock doors to your success.

This catalog contains useful and important information about our academic programs, support services, and workforce development initiatives that will help you make informed decisions about your education and your future.

I believe you will find that your time spent with us will have laid the foundation for a future with unlimited possibilities. Long after you leave us, you will often reflect upon the faculty and staff members who cared about you as a person and who ultimately made a real difference in your life.

We welcome you to the J. Sargeant Reynolds Community College family and we wish you much success as you work toward your educational and career goals.

Sincerely,

Gary L. Rhodes
College President


SYDNOR & HUNDLEY
J. SARGEANT REYNOLDS COMMUNITY COLLEGE

GENERAL INFORMATION

College History

Responding to the recommendation of a legislative study committee that "every citizen of the Commonwealth be given an opportunity to attend an institution of higher learning offering academic, occupational/technical, and community service programs at a nominal cost," in 1966 the General Assembly of Virginia established a state-wide system of community colleges. A newly established State Board for Community Colleges, prepared a master plan for a system of 23 institutions.

The Lieutenant Governor, J. Sargeant Reynolds, heralded the creation of the community college system by the General Assembly as "one of its finest acts and finest hours in this century."

J. Sargeant Reynolds Community College, the last of these colleges, is named in honor of the late Lieutenant Governor of the State, who championed legislation creating the state-supported community colleges. Opened in 1972 in temporary headquarters, the college is now a three-campus institution and the third largest in the Virginia Community College System.

The community college master plan called for J. Sargeant Reynolds Community College to consist of three permanent instructional centers, serving a geographic district comprising the Virginia counties of Goochland, Hanover, Henrico, and Powhatan, and the city of Richmond (north of the James River). Louisa County was subsequently added to the college's service region on a shared basis with Piedmont Community College. With the opening of the Western Campus in Goochland County in the spring of 1978, the college completed its plan for three campuses, located at urban, suburban, and rural sites. Additionally, in the spring of 1996, the State Board for Community Colleges added Richmond south of the James to its service region.

The Downtown Campus is now housed in a modern, high-rise structure at Seventh and Jackson Streets, having moved in the fall of 1981 from leased facilities in the 100 block of East Grace Street. In the fall of 1995 a major addition to this facility was completed, adding 84,000 square feet to the existing structure. In September 1974, the Parham Road Campus opened in a newly constructed, contemporary building located on a 105-acre site in northern Henrico County. A second instructional building was completed on this suburban campus in time for the opening of classes in the fall of 1980. With the instructional facility at the Western Campus opening in the fall of 1981 and its subsequent addition, which opened in 2001, the college now operates with modern facilities at all its instructional sites. A three-story structure adjacent to the Parham Road Campus houses executive and central administrative offices.

J. Sargeant Reynolds Community College (JSRCC) and John Tyler Community College (JTCC) joined forces in 2003 to create a new workforce development entity that provides business, industry and government in the region with a single source for workforce development. The new organization is named the Community College Workforce Alliance (CCWA). The alliance is a cooperative partnership dedicated to supporting economic development and providing world-class workforce training and services to both the public and private sectors. The vision behind the new organization is to maximize the talents and resources of both institutions' current workforce development centers in an effort to provide Richmond, Tri-cities and surrounding counties with a world-class regional workforce development organization.

The college currently offers 20 two-year occupational/technical degree programs, 9 occupational/technical certificate programs, 5 two-year college transfer programs, 1 transfer certificate program, and 43 career studies certificate programs requiring less than one-year of full-time study. Having enrolled more than 285,881 persons in credit courses since its opening, J. Sargeant Reynolds Community College continues to strive to meet the aspirations of its namesake to provide "a practical and economic answer to the future educational needs of thousands of ...Virginians."

COLLEGE MISSION, VISION AND VALUES

Mission
J. Sargeant Reynolds Community College provides access to education that develops individuals for employment and career advancement, prepares students for successful transfer to colleges and universities, promotes personal enrichment and lifelong learning, and builds a skilled workforce that contributes to regional economic development.

Vision
J. Sargeant Reynolds Community College will provide a dynamic learning environment that will change people's lives and enrich our community.

Values
J. Sargeant Reynolds Community College will be guided by the following values in all actions and decisions:

Student Success
We are committed to our students' success and support their reach for higher goals.

Serving Our Community
We are committed to meeting the needs of our community through involvement, partnerships, and volunteerism.

Teaching and Learning
We value learning, scholarship, personal growth, and access to diverse learning experiences for our students, employees, and the community.

Inclusiveness and Collaboration
We value inclusiveness of people and ideas, individual diversity, and the unique contributions of all. We work together with respect, trust, and honesty within the college and with the communities we serve.

Excellence
We are committed to upholding high academic standards, maintaining quality in all aspects of our work, and continuously seeking avenues for improvement.

Ethics
We are committed to following ethical practices in all aspects of the college.

Innovation
We seek the best and most creative ways to conduct our work.

Our People
We value our people and are committed to their professional and personal growth.

Academic Calendar 2010-2011

2010 Fall Semester

Important Dates

Advising	July 12-23, 2010
Early-Bird Registration	July 12-25, 2010
Registration (on-site)	July 26-August 22, 2010
Labor Day (college closed)	September 6, 2010
Convocation/Planning (no classes/no services)	November 23, 2010
Faculty Research Day (no classes)	November 24, 2010
Fall Break (college closed)	November 25-28, 2010
Grades Due by Noon	December 20, 2010

Regular Session (Sixteen-weeks)

Classes Begin	August 23, 2010
Late Registration and Add/Drop	August 23-27, 2010
Last Day to Add Class	August 27, 2010
Last Day to Drop with a Refund	September 8, 2010
Last Day to Withdraw from Class with a Grade of W	October 28, 2010
Classes End	December 11, 2010
Examination Period	December 13-18, 2010

First Eight-Week Session

Classes Begin	August 23, 2010
Late Registration and Add/Drop	August 23-25, 2010
Last Day to Add Class	August 25, 2010
Last Day to Drop with a Refund	August 30, 2010
Last Day to Withdraw from Class with a Grade of W	September 24, 2010
Classes End	October 18, 2010

Second Eight-Week Session

Classes Begin	October 19, 2010
Late Registration and Add/Drop	October 19-21, 2010
Last Day to Add Class	October 21, 2010
Last Day to Drop with a Refund	October 26, 2010
Last Day to Withdraw from Class with a Grade of W	November 19, 2010
Classes End	December 18, 2010

2011 Spring Semester

Important Dates

Advising	November 8-19, 2011
Early-Bird Registration	November 8-28, 2011
Registration (on-site)	November 29 – December 17, 2011; Jan. 3-7, 2011
MLK Day (college closed)	January 17, 2011
Spring Break (no classes)	March 14-20, 2011
Professional Development Day (no services)	March 14, 2011
Assessment Day (no classes)	April 5, 2011
Grades Due by Noon	May 11, 2011
Professional Development Day	May 12, 2011
Graduation	Saturday, May 14, 2011

Regular Session (Sixteen-weeks)

Classes Begin	January 10, 2011
Late Registration and Add/Drop	January 10-14, 2011
Last Day to Add Class	January 14, 2011
Last Day to Drop with a Refund	January 26, 2011
Last Day to Withdraw from Class with a Grade of W	March 24, 2011
Classes End	May 3, 2011
Examination Period	May 4-10, 2011

First Eight-Week Session

Classes Begin	January 10, 2011
Late Registration and Add/Drop	January 10-12, 2011
Last Day to Add Class	January 12, 2011
Last Day to Drop with a Refund	January 18, 2011
Last Day to Withdraw from Class with a Grade of W	February 11, 2011
Classes End	March 7, 2011

Second Eight-Week Session

Classes Begin	March 8, 2011
Late Registration and Add/Drop	March 8-10, 2011
Last Day to Add Class	March 10, 2011
Last Day to Drop with a Refund	March 22, 2011
Last Day to Withdraw from Class with a Grade of W	April 18, 2011
Classes End	May 10, 2011

2011 Summer Term

Important Dates

Advising	April 11-22, 2011
Early-Bird Registration	April 11-24, 2011
Registration (on-site)	April 25-May 20, 2011
Memorial Day (college closed)	May 30, 2011
Independence Day (college closed)	July 4, 2011
Grades Due by Noon	August 4, 2011

Ten-Week Session

Classes Begin	May 23, 2011
Late Registration and Add/Drop	May 23-26, 2011
Last Day to Add Class	May 26, 2011
Last Day to Drop with a Refund	June 2, 2011
Last Day to Withdraw from Class with a Grade of W	July 5, 2011
Classes End	August 1, 2011
Make-up Day for July 4	August 2, 2011

First Five-Week Session

Classes Begin	May 23, 2011
Late Registration and Add/Drop	May 23-24, 2011
Last Day to Add Class	May 24, 2011
Last Day to Drop with a Refund	May 26, 2011
Last Day to Withdraw from Class with a Grade of W	June 13, 2011
Classes End	June 27, 2011

Second Five-Week Session

Classes Begin	June 28, 2011
Late Registration and Add/Drop	June 28-29, 2011
Last Day to Add Class	June 29, 2011
Last Day to Drop with a Refund	July 1, 2011
Last Day to Withdraw from Class with a Grade of W	July 19, 2011
Classes End	August 1, 2011
Make-up Day for July 4	August 2, 2011

Accreditation Statement

J. Sargeant Reynolds Community College was established by the State Board for Community Colleges of Virginia and has been granted the authority by this board to award the Associate of Arts, Associate of Science, Associate of Applied Arts, and Associate of Applied Science Degrees and certificates. The College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools–1866 Southern Lane, Decatur, Georgia 30033-4097; Telephone: (404) 679-4501–to award the associate degree.

Note: The Commission on Colleges of the Southern Association of Colleges and Schools is to be contacted only if there is evidence that appears to support significant non-compliance with a requirement or standard.

College Directory (Visit www.reynolds.edu for most recent telephone numbers.)

	Downtown	Parham	Western	Central
Reynolds Information Center				371-3000
Academic Schools				
Humanities and Social Sciences	523-5177	523-5263		
Business and Engineering		523-5225	523-5432	
Nursing and Allied Health	523-5375			
Math and Science	523-5374	523-5225		
Academic Computing Centers (Student Computing)	523-5158	523-5377	523-5419	
Academic Support Centers (Tutoring)	523-5687	523-5927	523-5927	
Bookstores	786-8580	371-3266	371-3266	
Business Office	523-5285	523-5212	523-5404	523-5186
Career, Employment, and Transfer Center	523-5970	523-5061	523-5400	
Community College Workforce Alliance (Non-credit Courses)			523-2292	
Counseling	523-5970	523-5061	523-5400	
Distance Education				523-5612
				or 1-800-711-1628
Domicile Officer (in-state tuition appeals)				523-5029
Dual Enrollment				523-5789
English as a Second Language (ESL) Program		523-5020		
International Admissions/Services			523-5029	
Libraries	523-5211	523-5220	523-5419	
PAVE Program	523-5572	523-5572		
Placement Testing	523-5470	523-5411	523-5421	
REYNET --				371-3308
Security	523-5472	523-5219	523-5407	
Services for Students with Disabilities	523-5628	523-5289	523-5400	
Student Affairs	523-5296			
Student Activities	523-5082	523-5983	523-5400	
Success Centers (Admissions, Advising, Financial Aid)	523-5455	523-5368	523-5400	
Telecommunications Devices for the Deaf (TDD)	786-8800			
Veteran Affairs	523-5455	523-5368	523-5400	

CAMPUS LOCATIONS

College Administration Building The College Administration Building is located just west of Parham Road Campus. The offices of the Central Admissions and Records, Central Financial Aid, Educational Foundation, Scholarship Office, Central Business Office and other administrative staff are in this location.

Downtown Campus
700 East Jackson Street

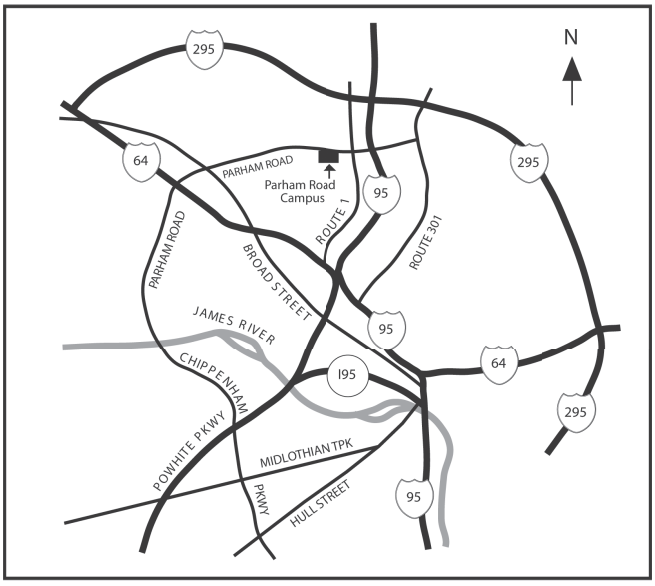
The Downtown Campus, located at 700 East Jackson Street near the Richmond Coliseum, provides one- and two-year occupational/technical programs in a number of allied health, business, and community service areas, as well as college transfer programs in liberal arts, business, science, and computer science.

Parham Road Campus
1651 East Parham Road

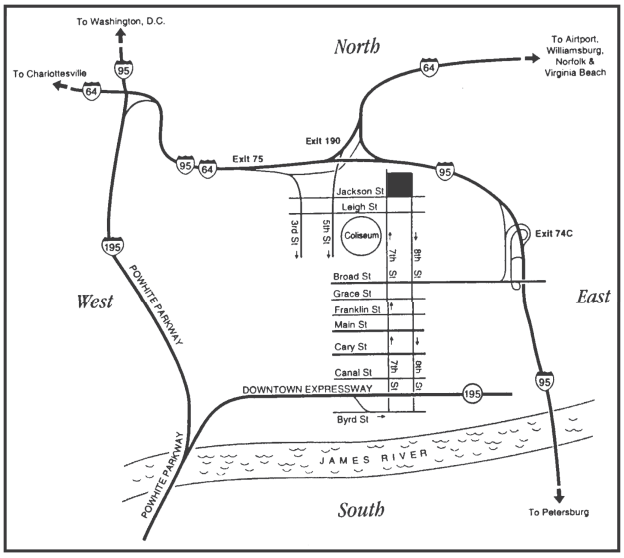
The Parham Road Campus, located one mile west of I-95 in Henrico County, offers college-transfer programs in liberal arts, education, engineering, science, and computer science, as well as a broad range of occupational/technical programs in the areas of business, engineering, and public service.

Western Campus
Rt. 6 (Goochland Courthouse)

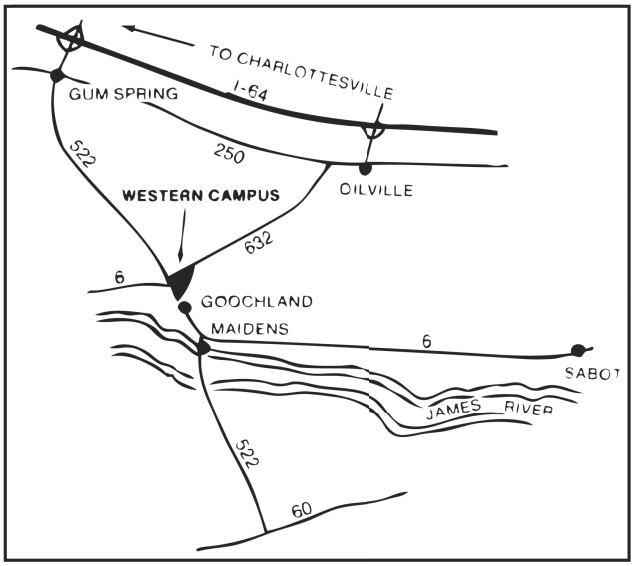
Routes 6 and 632 in the community of Goochland Courthouse border the Western Campus. This campus offers curriculums in horticulture, automotive and diesel mechanics, equine management, welding, and manufacturing.



Parham Road Campus



Downtown Campus



Western Campus

ADMISSION & ENROLLMENT

Admission Requirements

It is the policy of the VCCS and JSRCC to prohibit educational and employment discrimination on the basis of race, sex, color, national origin, religion, age, political affiliation, or against otherwise qualified persons with disabilities. Inquiries concerning the affirmative action policy should be addressed to the college's Affirmative Action Officer.

Consistent with its mission of providing educational access and development in its region, the college admits as either a non-curricular or curricular student, anyone with a recognized high school diploma, a GED, or certificate of completion of home schooling, or who is 18 years of age and has passed the ability-to-benefit (ATB) test.

Non-curricular applicants are persons who plan to enroll in credit courses without earning a degree or certificate at the college.

Curricular applicants are persons who plan to enroll in credit courses in order to earn a degree or certificate. Admission into selected programs, as specified in the Program Information section of this catalog, may require applicants to satisfy additional program–level entrance requirements.

New students, students returning from an absence of at least three years, or students that submitted an application and did not attend within one year must complete a JSRCC Application for Admission. Official high school transcripts that include graduation date or official GED exam results are required of applicants who are in the process of completing secondary studies. Applicants to the Nursing or Practical Nursing programs must submit official high school transcripts that document graduation or a GED. For reinstatement from suspension or dismissal refer to the Classroom and Instructional Policies and Procedures section in this catalog.

Newly admitted curricular students should complete the college's placement tests and meet with an advising specialist either through the new student orientation program (Refer to the First Year Initiatives Section of this catalog), group advising session or individually during walk-in advising prior to registering. The specialist will evaluate the student's career and educational objectives, level of preparation, and developmental needs, and may recommend adjustment of the student's intended curriculum (program plan). Students whose primary language is not English must also complete the college's English Language Proficiency test battery before taking the Compass or other placement tests. For additional placement testing information, refer to the Student Affairs section of this catalog.

The Central Admissions and Records Office will evaluate requested advanced standing and transfer credit for curricular students, preferably prior to the student's first registration at the college (see Advanced Standing section of Classroom and Instructional Policies and Procedures in this catalog).

The college reserves the right to evaluate special cases and, when considered in the best interest of the college, refuse admission to applicants. Furthermore, when enrollments must be limited for any curriculum, priority shall be given to all qualified applicants who are residents of the political subdivisions supporting the college and to Virginia residents not having access to a given program at their local community college, provided such students apply for admission to the program prior to registration or by a deadline established by the college. In addition, residents of localities with which the college has a clinical-site or other agreements may receive equal consideration for admission.

Applications may be submitted through the college website (www.reynolds.edu), in person, by mail, or by fax. Send or mail to:

Office of Admissions and Records
J. Sargeant Reynolds Community College
P. O. Box 85622
Richmond, Virginia 23285-5622
Telephone: (804) 523-5029
FAX: (804) 371-3650

Placement Testing/Test Waiver

At J. Sargeant Reynolds Community College, the goal of the Placement Testing program is to enroll students in courses that maximize their opportunity for success. Before registering, all students entering as curricular students must take placement tests in reading, writing, and mathematics. A $6 (cash only) testing fee is required. Testing times can be found on the Testing Center website at www.reynolds.edu/testing or by contacting any campus Testing Center (Downtown Campus, 523-5470; Parham Road Campus, 523-5411; Western Campus, 523-5421). In general, students may not take a placement test in the same subject area more than one time in a four month period. Placement test scores are valid for a period of one year.

Non-curricular students registering for English, mathematics, biology, chemistry, and other courses requiring tests as listed in the college catalog and/or class schedule, must take the appropriate placement tests. Non-curricular students who have accumulated nine or more semester credits in college courses and are experiencing academic difficulty in one or more areas will also be required to take placement tests. *(Academic difficulty is defined as having a cumulative GPA of less than 2.0 or receiving an "F" or "U" in a course.)*

A placement test may be waived on the basis of one or more of criteria listed below. Students must provide official documentation of college AP scores, SAT, PSAT or other scores used to waive the placement tests or provide documentation of college courses taken that would qualify the student for the waiver. Scores must be within one year of the date the student is requesting the waiver.

Reading

- Hold a degree from an accredited college
- Successfully completed an appropriate developmental reading course at another Virginia community college
- AP score of 3 or higher on the English Language test
- Received a reading placement recommendation above the developmental level from another college (Compass or Asset Placement Tests only)
- Transient students who submit an appropriately completed Transient Student Form
- GPA of 2.5 for 9 or more general education credits at this college
- Have completed at least 9 credits of college-level work with a grade of C or better
- Present a PSAT critical reading score of 52+
- Present an SAT verbal or reading score of 500+
- Present an ACT reading score of 20+

The SAT/PSAT or ACT tests must have been taken within one year prior to the requested test waiver.

Writing

- Hold a degree from an accredited college
- Successfully completed an appropriate developmental writing course at another Virginia community college
- AP score of 3 or higher in English
- Received a writing placement recommendation above the developmental level from another college (Compass or Asset Placement Tests only)
- Transient students who submit an appropriately completed Transient Student Form
- Successfully completed a writing course equivalent to ENG 111 or higher
- Present a PSAT writing score of 52+
- Present an SAT writing score of 500+
- Present an ACT writing score of 19+

The SAT/PSAT or ACT tests must have been taken within one year prior to the requested test waiver.

Mathematics

- Completed an appropriate developmental course at another Virginia community college
- Successfully completed a college level math course at another college equivalent to a college-level math course at JSRCC

- Transient students who submit an appropriately completed Transient Student Form
- Present a score of 500 or higher on the math portion of the SAT (and have high school prerequisite courses – see below)
- Present a score of 52 or higher on the math portion of the PSAT, if the SAT has not yet been taken, and have high school prerequisite courses (see below).
- Present a score of 20 or higher on the math portion of the ACT (and have high school prerequisite courses – see below)

The following conditions must also be met for SAT or PSAT scores:

- A transcript review will be made to determine if the student earned an A or B in the highest level prerequisite course and at least a C in earlier prerequisite courses. The highest level prerequisite course must have been taken within the last two years.
- The SAT/PSAT tests must have been taken within one year prior to the requested course waiver

Students who waive the mathematics portion of the placement test may be placed into one of the following courses:

- MTH 115
- MTH 151
- MTH 163
- MTH 166
- MTH 170

Students who wish to take a math course higher than those courses listed above must take the mathematics portion of the placement test.

Ability-to-Benefit (ATB) Assessment

Students who are at least 18 years of age seeking admission into one of the college's curricular programs and who lack a recognized high school diploma or the recognized equivalent (General Equivalency Diploma or Home School Completion Certificate) will be instructed to take an ability-to-benefit (ATB) test.

Students who pass the ATB test may be admitted to the college as either non-curricular or curricular students, provided they have also satisfied other admission requirements. The ATB test cannot be used to gain admission into the Nursing and Practical Nursing programs; these programs require completion of a high school diploma or GED.

The ATB test must be completed in one sitting. Students who do not pass the ATB test may enroll as non-curricular students, until they satisfy curricular admission requirements. Students who fail at least one section of the ATB test must satisfy the requirement by retaking the entire ATB test. Students may be allowed to retake the test for mitigating circumstances or after one semester has elapsed.

High School Students Enrolled at the College

High school students may be permitted to enroll in college-level courses at JSRCC prior to graduating from high school. Students enrolled in local school systems may enroll as dual-enrollment students. The college has dual enrollment agreements with local school systems to offer college-level courses at the college or high school locations. Dual enrollment is initiated through the students' high schools and is approved by the college's dual enrollment coordinator. Other students, including home school students, may enroll via concurrent enrollment. High school students approved to take courses at JSRCC, may receive both high school and college credit.

Only high school juniors and seniors may be permitted to enroll in college-level courses. Exceptions may be considered for freshmen and sophomore students interested in attending the college that demonstrate college readiness through the ability-to-benefit test.

The college must receive written permission from the student's high school principal for each semester or term the student would like to enroll. The parent of home school students will be recognized as the high school principal. High school students cannot register for developmental, health, or physical education courses.

High school students are not eligible to apply for financial aid.

Transient Students

Students indicating that they are enrolling at the college in order to satisfy program requirements at their home institution (college or university) will be admitted as non-curricular transient students. Such students should submit a completed JSRCC Transient Student Approval Form signed by the student's home institution advisor for each semester of enrollment at JSRCC. This form ensures transfer of the courses to the home institution program. Based on the certification of readiness by the home institution, JSRCC may waive certain placement tests, as well as not require college transcripts or proof of the completion of certain course prerequisites.

International Student Admissions

J. Sargeant Reynolds Community College is authorized under Federal law to enroll nonimmigrant students. The deadline for submission of international student applications with accompanying documentation is:

- June 1 for the fall semester
- October 1 for the spring semester

Contact the international student advisor for more information and to request an International Student packet for admission. F-1 applicants will be considered for admission to an Associate degree program or to the ESL program depending on TOEFL test scores. Admission is not guaranteed and is particularly selective for A.A. and A.S. (university transfer) degree programs. The college does not admit F-1 applicants to any health technology programs with a mandatory Career Studies Certificate pre-requisite. Also, applicants will not be considered for admission to the Hospitality Management program.

Contact the international student advisor in the Central Admissions and Records Office at (804) 523-5029, for the International Student packet which explains the admission process and the eligibility requirements for a student visa.

Student Identification

Social Security Number and Date of Birth

It is highly recommended that individuals provide their social security number at the time of application (per Section 6050S of the Restructuring and Reform Act of 1998). An individual's social security number will be used in accordance with federal/state reporting requirements and/or identification and research purposes within the VCCS.

Applicants for financial aid are required to submit their Social Security numbers. Pell Grant program applicants are advised the U. S. Department of Education requires Social Security numbers when processing applications. The Internal Revenue Service also requires valid Social Security numbers.

Student Identification Number (EMPlID)

The college assigns a student identification number at the time of application. Students must use this number to access services on campus or through REYNET or Reynolds Online. When requested through the college application, students new to J. Sargeant Reynolds that have attended another VCCS college should supply the EmplId assigned by the other college. Students that have records that exist at J. Sargeant Reynolds and another VCCS college should contact the Admissions & Records office, or a campus Student Success Center for guidance on the student identification number to select.

EXPENSES AND FINANCIAL AID

Domicile Determination for In-State Tuition Eligibility

The college makes an initial determination of a student's eligibility for in-state tuition rates (domiciliary status) based on the information the applicant and/or the applicant's parent, legal guardian, or spouse supplies on the Application for Admission. WEB applicants certify that they have provided accurate information on behalf of parents, legal guardians, and spouses. The determination is made under the provisions of section 23-7.4 of the Code of Virginia (on file in Central Admissions and Records). Non-U.S. citizens seeking eligibility for in-state tuition rates must provide immigration and other required documents. Occasionally the college may require clarification or additional information from the applicant before making the determination.

Students requesting to appeal out-of-state status must submit a completed "Student Supplemental Application" for Virginia In-state Tuition Rates. This form is available at any campus Student Success Center or the Central Admissions and Records Office. The completed form, with needed supporting documentation, must be submitted at least two weeks prior to the first day of classes of the semester the student is attempting to enroll. The determination will be issued in writing prior to the first official day of classes. Requests for review of domicile and domicile appeals that are received after the first day of classes will be considered for subsequent semesters only. Residency status must be determined prior to the start of the term. Appeals and domicile status changes are not retroactive.

Financial Aid

Financial aid is money provided to students to help pay college expenses, including direct educational expenses such as tuition, fees, books, and supplies, as well as cost of living expenses like food, housing, and transportation. JSRCC processes over 9,000 financial aid applications each year. Each year more than 4,000 degree- and certificate-seeking students receive over $10.0 million in loans, grants, and work-study.

This section contains a brief overview of selected financial aid information and is subject to revision without notice. Current details on aid programs, policies, and procedures are available on the JSRCC site at http://www.reynolds.edu/studentaffairs/faid.htm. Students wishing assistance should contact a campus Student Success Center. The staff within the Student Success Centers can assist students with completing applications, reviewing verification documents and worksheets, obtaining financial aid information, understanding financial aid policies, and will work with students to collect requested documents to ensure timely processing of their financial aid. To receive printed information about financial aid programs and regulations, submit a written request to the Office of Financial Aid at P.O. Box 85622, Richmond, VA 23285-5622.

Eligibility Criteria

Program Eligibility

Students may be eligible for financial aid assistance in the form of a loan, grant, or work-study award.

To be eligible for most federal and state aid programs, a student must:

- Be a U.S. citizen or an eligible non-citizen;
- Be admitted to, and pursuing, an eligible degree or certificate program;
- Have a high school diploma or a General Education Development (GED) certificate, or pass an Ability-to-Benefit test if admitted to one of the college's certificate programs;
- Have a valid Social Security number;
- Make satisfactory academic progress;
- Certify on the Free Application for Federal Student Aid (FAFSA) that federal student aid will be used only for educational purposes;
- Certify on the FAFSA that they are not in default on a federal student loan and do not owe money on a federal grant;
- Register with the Selective Service if required (males only); and
- Be enrolled in credit courses. No financial aid is available for non-credit or audited courses.

Note: To be considered for Virginia state financial aid programs, applicants must qualify for the in-state tuition rate.

General Eligibility Criteria

A student's eligibility for financial aid is determined using the following formula:

(Estimated Cost of Attendance) – (Expected Family Contribution) = (Demonstrated Financial Need).

The federal government, using information reported on the Free Application for Federal Student Aid (FAFSA), computes the Expected Family Contribution (EFC).

The Office of Financial Aid at JSRCC develops a financial aid package that attempts to meet students' demonstrated financial need. However, because the various funding sources are limited, the amount of financial aid funds awarded may not meet full need. Students should contact a Student Success Center if they believe that there are changes in their financial circumstances, not covered by information provided on the FAFSA that could have an impact on their financial aid eligibility.

Students admitted as non-curricular, transient, dual-enrolled or concurrent are ineligible to receive financial aid. Students enrolled in career studies certificate programs that require less than 16 credits to complete are ineligible to receive financial aid. Certain other career studies certificate programs are also ineligible for financial aid. If you have any questions regarding a specific program's eligibility for financial aid, contact a Student Success Center.

Application Process

1. If new to JSRCC, apply for admission to the college as a degree/certificate candidate. Students must be admitted into an approved curricular program in order to be eligible for financial aid.

2. Complete a Free Application for Federal Student Aid (FAFSA) at the US Department of Education's free website: www.fafsa.ed.go . FAFSA on the Web is the best way to apply for aid. Students do not need to receive an admissions decision before applying for financial aid. Students must complete a new or renewal FAFSA that coincides with the new academic year to reapply for financial aid. For more information on the process, please visit our website at: www.reynolds.edu/studentaffairs/faid.ht and select "Applying for Financial Aid." It is important that students list JSRCC (federal code #003759) as an institution that will receive their completed FAFSA information.

3. Renewal applicants may access their renewal FAFSA at www.fafsa.ed.go by selecting "Fill out a Renewal FAFSA" and requesting a PIN.

Note: The College encourages applicants to apply electronically using FAFSA on the Web. The web application will automatically prompt the student to enter all required fields and will question any erroneous data. In addition the results of a FAFSA completed electronically are received in approximately 7 to 14 days, whereby a paper FAFSA takes approximately 4-6 weeks.

4. After completing the 2010 – 2011 FAFSA, applicants will be mailed a Student Aid Report (SAR) from the US Department of Education. If any corrections are necessary, students should correct the information on the web, or on the signed SAR and mail it back to the Central Processor at the address listed on the SAR. Students are randomly selected by the federal government to verify the financial information that is listed on the FAFSA. Students that are selected for verification will receive a request for additional information from the JSRCC Office of Financial Aid. This information should be returned to a Student Success Center; students will not be awarded financial aid until all requested information has been submitted.

5. Students should promptly respond to any financial aid or admissions inquiries sent by JSRCC. The student should be sure to complete and return other

financial aid materials, such as loan applications, if applying for an educational loan. Students must have applied and have ALL requested documents on file, to include Verification materials and SAR corrections, in the Office of Financial Aid on or before the posted deadline for each semester. FAFSAs and incoming documents received on or before the posted deadline will receive priority processing. FAFSAs and incoming documents received after the posted deadline will be processed after the priority applications are completed. (Refer to the Financial Aid Deadlines section.)

6. After a completed FAFSA is received by the federal processor, the results will be sent to the student (SAR) and to JSRCC. The Office of Financial Aid will use the information from the FAFSA to determine a student's eligibility, develop an award package and notify the student of the award by mail. It is anticipated that award letters or response letters will be mailed out beginning in July. All financial aid is awarded assuming full-time enrollment (i.e. 12 or more credit hours) for each of two semesters (fall and spring). If a student enrolls less than full-time, the award amount will be prorated accordingly. A chart is sent with the award letter that may be used to determine a student's financial aid awards at less than full-time enrollment levels.

Deadlines

To ensure the timely processing of financial aid applications (FAFSA), students should complete and submit the FAFSA to the federal processor by no later than April 15 for the fall semester; September 15 for the spring semester; and February 15 for the summer semester. The chart below lists deadlines for the FAFSA and for other information related to the financial aid application process.

Document	Fall 09 Deadline	Spring 10 Deadline	Summer 10 Deadline
FAFSA	April 15, 2009	Sept 15, 2009	March 15 ,2010
Loan Request	July 1, 2009	Oct 15 , 2009	April 1, 2010
Admission & Program Placed	June 15, 2009	Nov 15, 2009	April 15, 2010
Verification & SAR Corrections	June 15, 2009	Nov 15, 2009	April 15, 2010
Other Missing Information	June 15, 2009	Nov 15, 2009	April 15, 2010

Loan Applications

Students interested in applying for federal student loans must complete the FAFSA and a separate loan application. Students interested in this type of assistance must submit their loan request forms and master promissory notes, in addition to having a valid SAR reflecting correct data on file, to a Student Success Center by July 1 if applying for a loan for the fall, October 15 for the spring and April 1 for the summer. The last day a loan packet may be submitted for processing is October 15 for the fall semester; April 1 for the spring semester; and July 1 for the summer semester. Students must complete an entrance interview their loan application being processed. In addition, students must maintain enrollment in at least six (6) semester hours in order to remain eligible for a loan.

Program	Who is Eligible	Value	Application Procedure
Children of Law Enforcement Officers	Children, ages 16 to 25, of Virginia law enforcement officers, fire fighters, or rescue squad members who have been killed in the line of duty.	May be eligible for full tuition and fees.	Contact the Central Admissions and Records Office.
College Scholarship Assistance Program (CSAP)	Undergraduates, enrolled at least half-time, who prove financial need. Virginia domicile required.	The amount of tuition and fees, or proven need, whichever is less.	Complete the FAFSA.
Commonwealth Award (COMA)	Undergraduates, enrolled at least half-time, who prove financial need. Virginia domicile required.	The amount of tuition and fees, or proven need, whichever is less.	Complete the FAFSA.
Federal Pell Grant	Undergraduate students, who prove exceptional financial need.	$400 to $5,500 per year (Subject to yearly change)	Complete the FAFSA.
Federal Academic Competiveness Grant	Undergraduate student, U.S. citizen, enrolled full-time in a degree program, who received the Federal Pell Grant. Available for the 1st and 2nd year of undergraduate education. Must have completed a rigorous secondary program of study.	1st year - $750 2nd year - $1,300	Complete the FAFSA.
Federal Direct Stafford Loan Subsidized	Students enrolled at least half-time, who prove financial need.	Up to $3,500 for the 1st year of undergraduate education. Up to $4,500 for each subsequent year of undergraduate education. (Subject to change)	Complete the FAFSA. Obtain a Federal Stafford Loan Request from a Student Success Center or the JSRCC Financial Aid Office website.
Federal Direct Stafford Loan Unsubsidized	Students enrolled at least half-time. Financial need is not a factor.	Up to $6,000 for each year of Undergraduate Education. (Subject to change)	
Federal Supplemental Educational Opportunity Grant Program (FSEOG)	Undergraduate students who prove exceptional financial need, and who qualify for a Federal Pell Grant.	$100 to $4,000 per year. (Subject to change)	Complete the FAFSA.
Federal Work-Study Program (FWS)	Undergraduate student who prove financial need.	Varies with the hourly wage and hours worked. Students awarded FWS are not guaranteed employment.	Complete the FAFSA. Interview and be selected for a job.
Part-Time Tuition Assistance Program Grant (PTAP)	Undergraduate students, enrolled for 1-5 credit hours, who prove financial need. Virginia domicile required.	The amount of tuition and fees, or proven need, whichever is less.	Complete the FAFSA.
Senior Citizen Program	Senior citizens, age 60 or older, who have been legally domiciled in Virginia for a year. For credit courses, senior citizens must meet Virginia taxable income guidelines.	May take advantage of tuition-free courses, on a space available basis, after paying students have been enrolled.	Contact the Central Admissions and Records Office.
Veteran's Administration Educational Assistance	Veterans; active duty, Reserve & National Guard personnel; & certain spouses & children of veterans.	Varies according to the program. Usually a monthly benefit check.	Contact a Student Success Center, or the VA Regional Office in Roanoke, Virginia.
Virginia Guaranteed Assistance Program Grant (VGAP)	Initial awards made to first-time students enrolled full-time, who graduated from a Virginia high school with a cumulative grade point average of 2.5 or higher. Must prove financial need, be a dependent student for federal financial aid purposes, and Virginia domicile required.	The amount of tuition and fees plus an allowance for books, or proven need, whichever is less.	Complete the FAFSA and submit a copy of high school transcript to the Financial Aid Office.
Virginia Military Survivors and Dependents Education Program (VMSDEP)	Children, ages 16 to 29, and Spouses of certain wounded, disabled, or deceased Virginia veterans or armed service personnel may be eligible for educational assistance.	The amount of the student's tuition and required fees.	Contact a Student Success Center.
Vocational Rehabilitation	Students with disabilities.	Determined by the Virginia Department Rehabilitative Services.	Contact your local Rehabilitative Service Office.

State Financial Aid Programs Offered at J. Sargeant Reynolds Community College

Disbursement

Students who are receiving financial aid will have their aid applied directly to tuition and fees. Financial aid recipients may use a portion of their award to purchase books and supplies at a campus bookstore if the amount of their financial aid award exceeds the cost of tuition and fees. Typically, students may begin charging books to their financial aid at least one week prior to the first week of classes; the exact date is published in each semester's Schedule of Classes. The last day to drop a class with a refund for the regular session is also the last day students may charge books and supplies to their financial aid.

Financial aid funds will be disbursed to student accounting approximately four weeks into the semester and balance checks will be mailed to students beginning the sixth week of classes. The balance checks represent the amount of the student's semester award, minus any funds used to pay tuition and fees or to purchase books and supplies. Because balance checks are mailed to recipients, it is imperative that students maintain an accurate mailing address on the Student Information System (SIS).

Students who have obligations will not receive a financial aid balance check until the obligation is paid. In addition, all services will be withheld from a student who owes money to the college or who has books and materials outstanding from the college's libraries. This means no transcripts will be issued, the student will not be permitted to reregister, and no other college services will be provided.

Students must pay tuition and fees, or have sufficient anticipated aid by the published payment deadlines or they will be dropped from all or some courses for non -payment. Anticipated financial aid will hold a student's registered classes if that aid is greater than or equal to the total tuition and fees. Students who want to use financial aid to pay bookstore charges must first register for classes. Students who are not certain if their aid is sufficient to cover their tuition and fees can contact a Student Success Centers, a campus Business Office, or review the information on SIS.

Students Attending Two Colleges at the Same Time

Students who are enrolled at two different college or universities are not able to receive financial aid at both institutions. A student who is enrolled concurrently at JSRCC and another college must decide which college financial aid will be received and communicate that decision to the financial aid office of that institution.

Students who receive financial aid from two different institutions as a result of concurrent enrollment will lose eligibility for further financial assistance and may be required to repay financial aid funds received at one of the institutions.

Impact of Drops/ Withdrawals from Course(s)

Students are eligible for a refund of tuition and fees paid for those credit hours dropped during the published drop period. After the published drop period has passed, there will be no refunds, except under the following conditions: major medical emergency, administrative error, extreme financial hardship, and certain situations where a financial aid recipient withdraws completely from the college. In all cases of dropped courses, any financial aid the student received based on those credits will be canceled, and the student will owe funds to the college and/or federal government.

To obtain a refund during the published drop period, a student must complete an official Drop form and submit it to a Student Success Center. To request a refund after the published drop period, a student must complete an Tuition Refund/Late Drop Request Routing Slip. This form, along with documentation supporting the request, must be submitted to a Student Success Center coordinator.

Federal and state financial aid regulations state that a student's financial aid must be recalculated based on the number of calendar days they attended classes if he/she officially or unofficially withdraws from all classes on or before completing 60% of the semester or term. The calculated unearned portion of the total of Title IV funds awarded a student (Pell Grant, SEOG, ACG, Federal Direct Stafford Loan, Federal Direct PLUS Loan but not Federal Work-Study, COMA, and VGAP) must be returned, according to the provisions of the Higher Education Amendments of 1998. The calculation of the return of these funds will likely result in the student owing a balance to JSRCC and/or the federal government.

Satisfactory Academic Progress

Federal and state guidelines require that institutions monitor students' academic progress towards the completion of a degree or certificate. Students must make satisfactory academic progress (SAP) from both qualitative and quantitative measures. SAP is measured by cumulative GPA, completion rate and maximum time frame. In order to be in compliance with SAP, a student must meet all three criteria. Failure to make satisfactory academic progress results in the loss of financial aid eligibility.

Cumulative grade point average (GPA): A student must achieve a minimum grade point average which is listed below.

Credit Hours Attempted	Minimum Expected GPA
17 - 23	1.0
24 - 35	1.5
36 - 48	1.75
48 -	2.0

- **Completion Rate:** (Number of credit hours earned in relation to the number of credit hours attempted, not including transfer credits) Students must successfully complete two thirds (67%) of the credit hours attempted at the time satisfactory progress is assessed. For students in associate degree and certificate programs, the first time completion rate can be assessed is when they have attempted at least 17 semester hours. For students in career studies certificate programs, the first time completion rate can be assessed is when they have attempted at least 12 credit hours. By law, the College must count developmental, ESL, and all credit courses. Successful completion is considered earned grades of A, B, C, D, P, S, or R. Courses are not considered successfully completed when grades of F, I, U, W or missing grades are earned.

- **Maximum Time Frame:** (Number of credit hours **attempted** in relation to number of credit hours necessary to **complete** the degree or certification program, including transfer credits). Students must complete their program within 150% of the program's total credit requirements. Developmental credits are not included in this calculation. All non-developmental and transfer credits are included, regardless of whether or not financial aid was received.

Veterans Benefits

Eligible veterans are entitled to receive certain educational benefits. The educational benefits for which an eligible veteran may qualify can only be used for courses taken towards the completion of a degree or certificate program.
To receive these benefits, eligible veterans must:

1. Apply to use their Montgomery GI Bill benefits via the GI Bill website (www.gibill.va.gov).
2. Apply to JSRCC and be accepted into a degree or certificate program.
3. Register for classes and request certification each semester from the veterans certifying officer at a campus Student Success Center.
4. Notify the certifying officer if repeating a course or taking a course for no
5. Ensure college transcripts from any institutions previously attended are submitted to the Central Admissions and Records office.

6. Notify the certifying officer if he/she drops or withdraws from classes, or stops attending JSRCC.

For more information on veterans benefits for educational assistance, contact the veterans certifying officer at any campus Student Success Center.

Downtown Campus- 523-5455
Parham Road Campus- 523-5368
Western Campus - 523-5400

State Educational Assistance Programs

Information about benefits and eligibility for the programs listed below is available in the Central Admissions and Records Office:

Senior Citizens Program (Policy 1-33): Senior citizens 60 years of age or older and legally domiciled in Virginia for one year, as determined by the Application for In-state Tuition of the college application, may take advantage of tuition-free classes. For credit courses, senior citizens must also provide documentation indicating a taxable individual income not exceeding $15,000 for the year preceding the year in which enrollment is sought. Under this provision senior citizens may also register for and audit courses offered for academic credit regardless of income level. In any one term, regardless of income, senior citizens may take up to three courses for audit or enroll in non-credit courses. Requests from senior citizens to register for tuition-free classes will be considered beginning the first day of scheduled classes for each course for which they wish to register. All classes, credit and non-credit, must achieve a minimum enrollment of tuition-paying students, who will be accommodated before senior citizens participating in this program are enrolled. Senior citizens interested in utilizing this benefit should visit any campus Student Success Center. Requests for tuition refunds will not be granted for senior citizens who enroll and pay for courses prior to the first day of class, in order to utilize the Senior Citizens Program. Additional information about this policy can be found at http://www.reynolds.edu/studentaffairs/policy.htm

Virginia Military Survivors and Dependents Education Program (VMSDEP): This program provides education to spouses and children of military members killed, missing in action, taken prisoner, or who became at least 90 percent disabled as a result of military service in an armed conflict. Children, ages 16 to 29, and no age restriction for spouses, may be eligible for educational assistance at a state-supported college and university in Virginia, including community colleges.

Children of Law Enforcement Officers: Through this program, children, ages 16 to 25, of Virginia law enforcement officers, firefighters, or rescue squad members killed in the line of duty, may be eligible to receive payment for full tuition and fees.

SCHOLARSHIPS

Through the kind generosity of individuals, businesses, and organizations, J. Sargeant Reynolds Community College offers scholarships to full-time and part-time students. Specific application criteria apply to each scholarship; however, students may apply for any or all scholarships by completing a J. Sargeant Reynolds Community College Scholarship application. The deadline for submission of a scholarship application is March 31st of each year for the fall semester and October 1st for the spring semester. All scholarship awards are subject to availability of funds during the year of award. To apply for scholarships a student must:

1. Complete and submit an Application for Admission to JSRCC, if not currently attending
2. Complete and submit a JSRCC Scholarship Application online (reynolds.edu/scholarship). Applications are also available in the Student Success Centers (all campuses), Student Government Association Offices (all campuses), and the Scholarship Office (Central Administration Building, Room 300, adjacent to the Parham Road Campus).
3. Be enrolled in a curricular program
4. Submit a letter of recommendation
   - High School Students: An instructor, advisor or administrator
   - Current College Students: A faculty member or advisor
   - Other Prospective Students: An employer, mentor, manager, etc.
5. Have a minimum 2.0 cumulative grade point average
6. Incoming students and current students with less than 12 credit hours completed at JSRCC, should submit transcripts from their most recent school (college or high school)

Scholarship List

(This list is subject to change each year. For the most current listing of available scholarships, visit the web at Reynolds.edu/scholarship)

Endowed Scholarships

Allison and James Aman Memorial
George and Mae Bartek
S. A. Burnette
Dennis Foundation
Dimitri and Maggie Georgiadis
Robert and Lucylle Gordon Memorial
Nathaniel and Sophia Gumenick Family Foundation
Dennis and Hanh Hellenguard
Josephine Holcomb Memorial
Robert Lane Memorial
Eric and Jeanette Lipman
Markel Business Scholars
Nursing Program
Betty Green Parson Memorial
Mary Morton Parsons Foundation
Evelyn D. Reinhart Memorial Nursing
The Reynolds Family Scholarship in Memory of J. Sargeant Reynolds
Grace Crank Sargeant
J. Franklin Sargeant
Science Program
Ukrop's Center for Culinary Education
VAMAC, Inc., Wholesale Distribution
Margaret Whitesel
John H. Wilton, Jr., Memorial/Home Builders Association of Richmond

Memorial Scholarships

Lillian Amburgey Reentry/Hermitage Women's Club
Nelson Beane
John Augustine Boothe (PAVE)
Becky Briggs
Sara Bruehl
Brian Cho
Artie M. Church
Jason C. Collins
Betty Sams Christian
Michael David Dobbs
Doenges Respiratory Therapy
Thomas J. Fleischer
George H. Flowers, Jr.
James Bauer Funkhouser
Thomas F. Hughes
Robert T. Greene, Sr.
Stuart and Bland Noel
Nina K. Peace
Clyde and Dorothy Pittman
Harry and Virginia Ritchie
Paul Rooney
Albert Shoosmith

Earl Smith
Clarence and Vivian Stitzer
Lorraine B. Stopkey Nursing
William A. Sutton, Sr.
Alan Waters

Named Scholarships
Art Scholarship
Association for Corporate Growth
Auto Paint Supply Company, Inc.
Barnes & Noble Bookstore
Bay Diesel and Generators
Berkeley Hotel Hospitality
Bon Secours Health System Nursing
Capital Relocation Group
Central Virginia Nursery & Landscape Association
Circuit City Foundation
Community Memorial Health Center Auxiliary
Community Pride High Achievement Program
Covenant Woods Nursing
Dennis Foundation
Dominion Foundation
Dual Enrollment Program
Eastwood Scholarship for Young Professionals
Engineering Program
Enterprise Rent-A-Car Auto Body
Ethyl Corporation Automotive
EWI Adult Students in Scholastic Transition
Firestone Automotive
Flagler Foundation Nursing
Ford Asset Program
Dimitri and Maggie Georgiadis
General Scholarship
Grace Hospital Alumnae Association Nursing
L. Michael Gracik, Jr. Accounting
Gwathmey Foundation Nursing
Hanover Female Assertiveness
HCA Cares Healthcare
HCA-Retreat Hospital Nursing
Henrico Business Council Business
Henrico Doctors' Hospital Nursing
Hutchens & Hutchens Legal Assisting
JSRCC Classified Council
JSRCC College Board
JSRCC Society of Retired Faculty
Ladysmith Volunteer Fire Auxiliary
Legal Assisting
Linwood Jacobs Achievement (Wal-Mart)
Lettie Pate Whitehead Foundation
Liberal Arts
Lowe's Community
Luck Stone Internship
Mathematics Department
Ivor and Maureen Massey VA Commonwealth Legacy
Fred McConnell Engineering
Merrill Lynch, Inc. Scholarship
Metropolitan Health Foundation
Louise Hoyt Minor
Motorola Semi-Conductor Products Sector
Nunnally Foundation Middle College
Owens and Minor Nursing
Philip Morris Vocational/Technical Career
Pediatric Connection
Pinchbeck Child Care
Protech Dental Studio, Inc.
Richmond Academy of Medicine Alliance
Richmond Remodelers Association
Rotary Club of Hanover County
Rotary Club of Henrico North
Rotary Club of Innsbrook GED
Rotary of West Richmond
School of Arts, Humanities and Social Sciences
School of Information Systems, Business and Public Safety
William H., John G., and Emma Scott
Sheltering Arms Hospital Nursing
Sherwin-Williams Automotive Finishes
State Farm Auto Body
Toyota Automotive
Tri-Club Women's Club
Tyson Family Foundation
Ukrop's Super Markets, Inc. Internship
VCU Health System Community College Nursing
VCU Health System Community College Respiratory Therapy
Virginia Automotive Services Co-op
Virginia Hospitality and Travel Industry
Virginia Landscaping and Nursery
Virginia Military Institute Alumnae Transition
Virginia Nonprofit Housing Coalition
Virginia Respiratory Care Association
Wachovia Bank
Mary Washington Hospital Foundation Nursing
Western Campus
Westminster Canterbury
Wholesale Distribution

ACADEMIC SUPPORT SERVICES

Academic Advising

J. Sargeant Reynolds Community College is committed to providing a variety of services to help students experience success during their time at the institution. Academic advising, as one of these services, is designed to assist students in developing and following an educational plan that is meaningful and compatible with their educational and career goals. Such assistance includes: selecting the right program; developing a plan or timetable for completing the program; developing student and semester-specific course schedules; monitoring and following up on students' academic progress; identifying/referring students to appropriate learning assistance opportunities, as necessary; and re-evaluating career and educational goals in light of job market shifts and other considerations.

The college's advising services vary based on the individual student's needs. Academic advisors are available in the Student Success Centers who are specialists trained to engage students in an intentional advising process. All new students should meet with a Student Success Center advising specialist prior to their first enrollment in the college. During this initial session, the student's educational and career goals are discussed in relationship to their academic preparation. Although students are assigned faculty advisors during the college application process, students may use advising specialists within the Student Success Centers until they have successfully earned 30 credits. Curricular students who have completed more than 30 credit hours are strongly encouraged to meet with their assigned faculty advisor each semester for assistance with course selection, developments relating to their educational and career objectives or graduation requirements. Non-curricular students who have earned a cumulative GPA of 2.0 or above are strongly encouraged to meet with an advisor in the Student Success Center each semester prior to enrolling in courses. However, both curricular and non-curricular students may self-advise. Self-advising allows curricular students to select and schedule courses without their advisor's approval each semester. Students who self-advise agree to accept full responsibility for their course selection decisions and for following their curriculum requirements for graduation.

Any student who has earned less than a cumulative grade point average of 2.0 will be blocked from self-advising, and will need to consult with the appropriate academic advisor, based on their curricular status and program.

College Advising Days

In support of the college's academic advising initiatives, specific advising days are designated each semester. These days provide an opportunity for both faculty and students to focus on the advising function. Students approved to self-advise may make an appointment to consult their assigned advisor, if they wish to do so.

Transfer Advising

Students who plan to transfer to a four-year college or university should become acquainted with the senior institution's requirements in the intended major and be guided by those in selecting their curriculum and electives. The advisor and/or transfer specialist will assist students with the selection of an appropriate institution and with the interpretation of its requirements. The campus' student services specialists for career and transfer services can be of additional assistance. Students are advised that courses with grades below "C" normally are not accepted at other institutions. (See Transfer Opportunities section of this catalog)

STUDENT AFFAIRS

Career, Employment and Transfer Centers

http://www.reynolds.edu/studentaffairs/career.htm

The college provides services for students and alumni to assist with career development and exploration and employment preparation. Career staff are available to assist students in deciding on career goals and how to plan and prepare for a chosen occupation. Specialists provide assistance in planning a job-seeking campaign, resume assistance and critiques, and interview preparation. Workshops and individual sessions are available for these purposes.

Employers contact the Career, Employment and Transfer Center (CETC) with job vacancies. These opportunities are posted on College Central Network, an online jobs database system. Students interested in full time, part time or summer positions, should visit http://www.collegecentral.com/reynolds to view posted job announcements.

Students who plan to transfer to a four-year college or university should become acquainted with the senior institution's requirements in the intended major and be guided by those in selecting their programs and electives. The staff of the CETC on each campus can assist students with the selection of an appropriate institution and with the interpretation of its requirements.

Computers and published materials are available for student use in the CETC at each campus. Computers are available for resume development, job search, employment research, and college transfer preparation. Published materials provide students with helpful information for making career, educational, and personal decisions. These materials include directories of colleges, college catalogs, transfer guides, college applications, and job search materials. Other resources describe the entrance requirements, working conditions, employment outlook, and compensation for thousands of career and job opportunities.

College Success Skills

http://www.reynolds.edu/studentaffairs/success.htm

College Success Skills (100) is a one-credit course in which students receive valuable information and participate in numerous experiences that will help them succeed in college. Information concerning career development, study skills, academic advising and college policies and procedures is covered in this class. Instructors assist students throughout the course and provide individual assistance and referrals to students as needed. Completion of a 100 course is required for all students enrolled in associate, applied associate and certificate programs. 100 is also a general education requirement within the Virginia Community College System. The course should be taken within the student's first 15 credit hours at JSRCC. Special topic 100 classes are offered for students participating in Learning Communities, Teacher Education, Leadership Development and Automotive Technology.

Counseling

Students experiencing non-academic difficulties should contact the Office of Student Affairs at (804) 523-5296. Staff is able to assist students connect with appropriate community resources. *The college does not provide personal or mental health counseling.*

First-Year Initiatives

http://www.reynolds.edu/studentaffairs/firstyr.htm

The Office of First Year Initiatives supports the College's efforts to provide a successful start for new students at JSRCC by offering on-campus and on-line orientation programs for new students.

JSRCC offers three ways for new students to become oriented to the college: New first-time college students for the fall semester are invited to participate in on-campus orientation [SOAR (Student Orientation, Advising & Registration)], or a Group Advising session.

Students entering for the fall semester who are unable to participate in SOAR or Group Advising Sessions may complete Online SOAR.
Students entering for the spring semester may participate in a Group Advising Session and are also encouraged to attend an orientation-only program before classes begin.

SOAR and Group Advising sessions are designed to assist students with the following:

- Learning about student success resources at the College.
- Having placement test score results interpreted for accurate placement in courses.
- Answering any questions related to academic programs or course requirements.
- Establishing a sound class schedule for the upcoming term.
- Becoming familiar with Blackboard and the JSRCC Student Information System.
- Learning the location of campus resources (for SOAR participants only).
- Gaining a better understanding of JSRCC, college policies, and attendance.

Research has shown that students who participate in SOAR or Group Advising before their first semester have higher first semester grade point averages, stay in college longer, and have an easier transition into college.

Both Orientation programs (SOAR and Spring Orientation) and Group Advising sessions require advance registration. Please contact soar@reynolds.edu or 804.523.5917 for more information.

Program for Adults in Vocational Education (PAVE)

http://www.reynolds.edu/jsr_sds/pave/default.htm

The Program for Adults in Vocational Education (P.A.V.E.) is a two-year career studies certificate program that provides vocational and technical training for adults with intellectual disabilities, severe learning disabilities and emotional disabilities. Certificates are awarded in the following areas: Child Care Assistant, Clerical Assistant, Food Service Assistant, and Health Care Assistant.

The overall purpose of P.A.V.E. is to provide post-secondary training programs that incorporate functional academic instruction, job skills training, and community-based internships, which prepares the student to apply for employment in the competitive job market. Successful completion of a Career Studies Certificate through P.A.V.E. can lead to the development of effective work skills and increased confidence in the work place. Applicants must meet both the College's general admission requirements and the program's specific requirements. These requirements include: completion of a high school program with a diploma recognized by the Virginia Community College System (VCCS), or GED; active or pending client status with the Virginia Department of Rehabilitative Services; and possession of social skills necessary to function independently among peers in the college environment.

For additional information regarding the P.A.V.E. program contact 804.523.5572 or email PAVE@reynolds.edu.

Services for Students with Disabilities

http://www.reynolds.edu/studentaffairs/accom.htm

The College complies with both the letter and the spirit of the Americans with Disabilities Act, the Rehabilitation Act of 1973, and other laws protecting the rights of individuals with disabilities. The Office of Student Accommodations (OSA) seeks to provide access to educational opportunities for individuals with disabilities by removing barriers that would otherwise eliminate their ability to participate. Students with disabilities may request reasonable accommodations through the OSA. In order to be considered for accommodations, students must comply with the institution's established process. The college does not exclude any otherwise qualified individual, solely by reason of their disability, from participation in any program or service offered by the college.

For additional information contact a Student Accommodations Specialist: Downtown Campus (804) 523-5628, Parham Road Campus (804) 523-5289 Western Campus (804) 523-5421, or email OSA@reynolds.edu.

Student Development Workshops

http://www.reynolds.edu/studentaffairs/success.htm

Each semester the Division of Student Affairs offers a series of workshops for students interested in personal development. Topics are offered on a rotating basis and cover a variety of interests. Past topics have included note-taking, test-taking, stress management, goal setting, money management, resume writing, navigating the academic environment, and job interviewing skills. All workshops are free to students.

Student Life

http://www.reynolds.edu/studentaffairs/studentlife.htm

The Office of Student Life is dedicated to providing social, educational, and service activities that promote student engagement and learning, cultural awareness, and social responsibility. The office emphasizes the importance of respect by creating an environment where students can freely express their opinions and beliefs with good intentions of achieving a common goal.

JSRCC has many active student clubs. Getting involved in student clubs and organizations is an exciting way for students to meet fellow students, develop leadership skills, and enhance their classroom experiences. By planning or participating in student activities, students can help make a positive impact on the campuses of JSRCC. Students who do not find an on-campus club that meets their interests can work with the Office of Student Life to possibly start a new club.

If interested in applying to JSR LEAD, the college's student leadership development program, the Office of Student Life (or Office of First-Year Initiatives) can assist students with how to get involved in this program. Applications are accepted and selections are made at the beginning of each fall semester.

The Office of Student Life coordinates trips to sporting events, theaters, and four-year colleges and universities. It also plans a variety of student forums and fairs as well as hosts national speakers and entertainers on campus.

For more information about campus-wide activities or student clubs, please call 804.523.5986 or 804.523.5082 or email at studentlife@reynolds.edu.

Student Success Centers

http://www.reynolds.edu/studentaffairs/testing.htm

Student Success Centers provide services and resources to meet the specialized needs of students in a centralized location. Specifically, the Student Success Centers provide advising services to new and returning students in the areas of admissions, registration, financial aid, academic advising, and veterans affairs. The focus of the Student Success Centers is to engage students in an intentional advising process, from application to the college through the completion of the first 30 academic credits. The staff in the centers assist students with educational planning and monitor students' progress through individual advising sessions.

For more information, contact any Student Success Center.
Downtown Campus- 523-5455
Parham Road Campus- 523-5368
Western Campus- 523-5400

SPECIALTY CENTERS AND RESOURCES

Academic Support Centers

The Academic Support Centers are home to the college's tutorial programs. Faculty and peer tutors provided one-on-one and small group tutorial conferences for J. Sargeant Reynolds Community College students.Free tutoring is available to students at JSRCC who are currently enrolled in JSRCC credit courses. However, each term, there may be courses for which tutors are not available.

- The Academic Support Center tutors can

– Clarify Assignments
– Increase understanding of course materials
– Give pointers on how to study
– Help reduce test anxiety

- The Academic Support Center tutors cannot do work or assignments for students, including take-home tests.
- The Academic Support Centers cannot provide tutoring for students in courses that have already been successfully completed, in non-credit courses, in audited courses, for seniors taking tuition-free courses or students from special programs at the college that incorporate tutoring or reduced-sized classes.
- Students may use a maximum of two 50-minute sessions per week per course of peer tutorial services. Walk-in sessions may be available with faculty volunteers for some courses. Please check with the ASC each term for walk-in tutoring opportunities.
- To receive tutoring, students must complete a REQUEST FOR TUTORING application and bring evidence of their enrollment, e.g, a current registration form or college ID.
- The Academic Support Centers are located:

– Downtown Campus	804.523.5687	Room 174
– Parham Road Campus	804.523.5927	Room 114
– Western Campus	804.523.5927	Parham Road

Bookstores

A bookstore is located on each of the college's campuses. Students may purchase new, used, and digital textbooks, supplies, JSRCC logo clothing and items, etc. Special orders may be placed for non-stocked items with any form of payment.

The bookstores accepts personal and company checks as well as major credit cards (VISA, MasterCard, Discover and American Express) and Barnes & Noble gift cards. Students receiving financial aid may only charge textbooks and supplies to their financial aid awards. Authorized agency charge accounts may be maintained for students who are financially supported by recognized state, federal, or private institutions. Students may charge to their financial aid or third party account during specific charge dates during each semester. Check with your local store for dates pertaining to a specific semester.

Textbooks are stocked by course identification and section number, i.e., BUS 211 81B. When returning books for a refund , they must be in the original purchased condition. New books must be free from any writing, marks, names, tape, or other signs of usage. A full refund will be given in the original form of payment if textbooks are returned during the first week of class with a receipt.

Students have the opportunity to sell textbooks back to the bookstores if they are in good condition. In order to sell back textbooks to the bookstore, the student must present a valid JSR student ID. The students can sell their books back all year round. However, students can receive up to 50% back of the purchasing price until our limits are reached during the week of finals.

For additional information regarding the hours of operation, contact the Downtown Campus Bookstore at 786-8580 and the Parham Road/Western Campus Bookstores at 371-3266.

Center for the Deaf

http://www.jsr.vccs.edu/studentaffairs/accom.ht

The Center for the Deaf, which is a part of the Office of Student Accommodations (OSA) at the College's Downtown Campus, coordinates support services for the Deaf and hard of hearing enrolled in college programs. Students who require services, inclusive of interpreters, note taking auxiliary supports and quiet testing environments must contact OSA. Due to the amount of planning required to coordinate appropriate services, students should submit their request for service at least three weeks before the start of the semester they are planning to enroll. For more information visit the Center in room 160 of the Downtown Campus or phone (804) 523-5628 (VOICE) or (804) 796-8800 (TDD) or email OSA@Reynolds.edu .

Center for Distance Learning

The **Center for Distance Learning** provides the option to take courses in a variety of settings and through alternative delivery methods that allow access to instruction from the home, office, off-campus sites throughout the state, and a desktop or laptop computer wherever there is Internet access. These options are designed to increase access to educational opportunities for students who have work schedules, family responsibilities, or other demands that make it difficult to attend traditional on-campus classes. Distance learning offers an opportunity to prepare for career advancement, for transfer to a four-year college or a university, for job re-certifications, to complete the requirements for the Associate's degree, or to study for personal enrichment.

J. Sargeant Reynolds Community College now offers three kinds of distance learning courses:
1. **Online courses**: All course work and interactions with the instructor and classmates are completed online. The course is accessed through Blackboard.
2. **Distance learning courses with in-person or proctor requirement**: Most of the instruction is online. However, students will be required make a limited number of trips to a campus site for labs, presentations and other class activities or to a community site for clinicals or internships. Some courses may require proctored testing that can be done at JSRCC testing centers, testing sites at other VCCS college, or any **approved** site outside of the state of Virginia.
3. **Teleconferencing/video-conferencing courses** – Students meet on site at one of the JSRCC campuses, at a site at another VCCS college, or at a connected off-campus site. Class meetings are scheduled weekly, just like on-campus classes. The instructor is connected to the class by a closed video network. Students see the instructor and students at other sites on television monitors in the classroom. Some instruction and communications will be in Blackboard or via the Internet.

The course schedule ***section notes*** will indicate the specific kind of distance learning course for that section. Students should carefully read section notes before registering for a distance learning course

In order to enroll in any distance learning courses at J. Sargeant Reynolds Community College, students must have consistent Internet access, e-mail, and telephone access or be able to go to a JSRCC campus location to access the computer lab, the library and other student support resources. Some courses may require special software that is available only in college Academic Computing Centers. All courses offered through the Center for Distance Learning require students to be independent learners with proficient reading, writing, and research skills and to be able to commit to a consistent schedule that may include at least 8-10 hours per week of study for each course. Before enrolling in distance learning courses, students must take the JSRCC placement tests, including the ***READI***, and complete any recommendations and course prerequisites.

To learn more about distance learning at JSRCC and to experience an online course, complete the ***CDL001 – Orientation to Distance Learning***. If you are already a JSRCC student, to enroll in ***CDL001 – Orientation to Distance Learning***, contact the Center for Distance Learning at distance-ed@reynolds.edu or 804-523-5612 or 1-800-711-1628 (Virginia only) and you will be enrolled in this ***free*** orientation course. If you have not yet applied and been accepted at JSRCC but would like to explore the format for distance learning courses, you may explore an non-interactive ***CDL 001*** linking this link: http://bit.ly/aWnn7j.

Through a combination of delivery formats*, students may complete the requirements for any of these degree or certificate programs:

Science - AS degree
Business Administration - AS degree
Early Childhood Education – AAS degree, Certificate
eCommerce – Certificate
Hospitality Leadership – Certificate
Opticianry AAS degree, Apprenticeship – Certificate
Pre-Nursing and Pre-Allied Health programs – Certificate
Respiratory Therapy – AAS degree, Certificate

Some courses or programs will require limited campus and/or and or community or clinical site meetings.

Center for Teacher Education

J. Sargeant Reynolds Community College serves as a gateway to teacher J. Sargeant Reynolds Community College serves as a gateway to teacher education. Students can complete their first two years of teacher preparation courses, receive an associate degree at J. Sargeant Reynolds Community College, and then transfer to a four-year college or university. In Virginia, most individuals seeking a license to teach should earn a Bachelor's degree in an arts and sciences area. Many four-year institutions require prospective teachers to obtain their professional education studies during a fifth year of study resulting in a Masters Degree. J. Sargeant Reynolds Community College offers Teacher Preparation Specializations of the Associate degrees in Science, Social Sciences, and Liberal Arts for prospective teachers that transfer to Virginia's four-year colleges and universities. J. Sargeant Reynolds Community College advisors work closely with students to ensure optimum transferability. The College also has transfer centers where catalogs and transfer guides for many four-year colleges are available.

Teacher Licensure Requirements for the Community College Student

The Virginia Board of Education has established the following general requirements for initial teacher licensure. The candidate must be at least 18 years of age; have earned a baccalaureate degree from an accredited institution of higher education with a Board-approved teacher education program; possess good moral character; have satisfied requirements for a teaching endorsement area; have met general and professional studies requirements (including student teaching), and have obtained passing scores on the VCLA: Virginia Communication and Literacy Assessment and the appropriate Specialty Area test (Praxis II). The teaching license provides the prospective teacher with a credential to serve as a teacher in Virginia while the endorsement describes the subject area or grade levels to which the prospective teacher may be appropriately assigned to teach.

Students seeking licensure at the elementary level (grades PreK-3 or PreK-6) may major in a wide range of disciplines. However, some majors such as English, mathematics, history, and the sciences have greater relevance since teachers will teach these subjects to their students.

Students seeking licensure at the middle school level (grades 6-8), should select one of the four basic content areas--mathematics, a science, history/social science or English—as a major. Two concentration areas are no longer required for middle school licensure, so elective choices do not have to emphasize a second content area.

Students seeking licensure to teach at the secondary level (grades 9-12), major in the area in which they will seek endorsement. Possible majors include biology, chemistry, computer science, English, French, German, history, mathematics, physics, political science, and Spanish.

Special education students may choose a major from the humanities, social sciences, or sciences.

If possible, community college students should choose their bachelor's degree major by the end of the first year at the College in order to ensure that the students' course selections at J. Sargeant Reynolds Community College meet as many of the four-year institution's requirements as possible.

Students who have decided on their teacher licensure endorsement area and selected their four-year transfer institution should contact their advisor to explore whether a Teacher Education Admission Agreement exists between the Virginia Community College System and that institution. The advisor can provide further information about the requirements and benefits of the agreement.

Special Activities at J. Sargeant Reynolds Community College for Teachers

J. Sargeant Reynolds Community College is committed to assisting in the preparation of high quality teachers for the community. The College offers various opportunities to current and prospective teachers:

- Education coursework providing early field experiences in area schools for pre-service teachers
- Courses for in-service teachers seeking licensure renewal, additional endorsements, or professional development
- The Virginia Community College System Career Switcher Program (a fast track to teacher licensure in selected critical shortage teaching areas) for persons with a Bachelor's Degree and at least five years of work experience
- Teacher Institutes designed to contribute to teacher development and improvement of teaching in public schools

Virginia Teaching Scholarship Loan Program–Tuition Now, Service Later

The Virginia Teaching Scholarship Loan Program is an incentive to students interested in pursuing a teaching career in a critical shortage teaching area. The critical shortage teaching areas are determined annually, but usually include fields such as special education, mathematics, earth science, career and technical education, foreign language, English as a second language, middle grades, library media, art, and reading specialist. Males preparing to teach in the elementary grades and people of color in all teaching fields are also eligible. More information is available from the Virginia Department of Education.

Visit http://www.jsr.vccs.edu/jsr_cte/ for more information about Teacher Education.

Community College Workforce Alliance

The Community College Workforce Alliance (CCWA), the workforce development partnership between J. Sargeant Reynolds and John Tyler Community Colleges, serves the training needs of the region. This partnership combines the strengths of the two colleges in order to provide the highest quality of training at affordable prices. CCWA is unique not only to Virginia community colleges but nationally as well. Virginia businesses, government leaders and economic developers have applauded the Alliance and its positive impact on the region's workforce. CCWA's service area includes four (4) cities and twelve (12) counties and served more than 22,000 employees and 800 companies last year.

CCWA provides non-credit training, individual and custom-designed instruction, consulting, skills assessments and educational programs. CCWA offers on-line registration, customer support and courses delivered by adjunct faculty . CCWA's professional trainers have industry experience, skills and certifications to assist both companies and individuals to achieve their professional development goals.

With a focus on responding to regional business needs, CCWA works with new and expanding businesses in the areas of recruitment and candidate assessments

to identify employee skills, to design and conduct startup operations or to facilitate the retooling of training programs.

Programs and services may be offered at one of CCWA's three locations, online or at client locations.

Non-credit classes include, but are not limited to:

- Management & Supervision
- Computer Applications
- Contractor/Tradesmen Licensing Courses
- ISO & Productivity
- Manufacturing & Engineering
- English as a Second Language (ESL)
- IT Programming/Systems/Networking and Certification Prep
- Quality Improvement
- Certificates
- Human Resource Management
- Customer Service
- Administrative Professionals
- Communications
- Workplace Spanish
- Project Management Certification Prep
- Truck Driver Training

Individuals are not required to apply for admission to the college in order to take CCWA classes. Registration can be by phone, walk-in and on-line at www.ccwa.vccs.ed. Facility rentals are also available for business meetings and corporate training sessions.

CCWA locations include:

- North Run Business Park, 1630 Parham Road(Richmond), phone: (804) 371-CCWA (2292)
- Chester Campus-Bird Hall, 13101 Jefferson Davis Highway(Chester), phone: (804) 706-5175
- Featherstone Professional Center, 1807 Huguenot Road, Suite 108 (Midlothian), phone: (804) 440-2447

Libraries

JSRCC Libraries consists of three libraries, one on each campus. Our mission is to provide an environment where lifelong habits of learning, self-improvement and self-expression are encouraged and where users can meet their educational, informational, and socialization needs. The libraries are drastically and dramatically changing as emerging technologies offer exciting pathways for teaching and learning.

The libraries provide access to over 84,000 books in print, online, and audio format, plus an ever increasing collection of educational and popular videos. The libraries also subscribe to over 300 print periodicals and more than 200 online databases in partnership with Virtual Library of Virginia (VIVA) and the Virginia Community College System (VCCS). These databases include millions of full-text journal, magazine, and newspaper articles, books, reports, pamphlets, proceedings, etc. that can be accessed from both on- and off-campus. We are constantly adding new titles to our collection to meet students' research and informational needs. In addition, as a member of the Richmond Academic Libraries Consortia (RALC), we have access to resources among the RALC member libraries.

Each campus library provides high-end computer workstations with access to the Internet and Microsoft Office suites. The library staff can assist you in accessing and using the libraries' resources and services in person, by phone, email, and live chat. Professional librarians offer workshops every semester on various topics to help you improve your research skills, grades, overall academic achievement, and lifelong learning.

Our website at www.reynolds.edu/librar serves as a gateway to all the above resources and services. You are welcome to visit us online or in person.

Academic Computing Centers for Students

Academic Computing Centers provide students access to a wide range of software applications in support of the college's academic programs. These centers have most of the necessary software to complete your coursework (if we don't have it then it has limited license and your instructor will give you instructions on how to access that software). You must be a currently registered student to use these centers and must show your JSR student ID to access these centers. The department of Academic & Instructional Computing Support coordinates the support for these centers (department manager's phone: 523-5901). Hours of operation generally match those of the campus libraries or check the web www.reynolds.edu/jsr_acs

Parham Road Campus – ACC
Massey Hall, Room 137
Telephone: 523-5377

Downtown Campus - ACC
Room 462
Telephone: 523-5158

Western Campus – Library & ACC
Room 200 & 215, Main Building
Telephone: 523-5419

ENROLLMENT POLICIES AND PROCEDURES

Classification of Students

Curricular
Curricular students are students who have satisfied general college curricular and any additional program admission requirements and are enrolled in credit or developmental courses for the purpose of earning a degree, certificate, or career studies certificate.

Non-Curricular
Non-curricular students are students who are enrolled in credit and/or developmental courses without curricular admission and who do not currently intend to earn a degree, certificate, or career studies certificate at the college. The Virginia Community College System recognizes the following types of non-curricular enrollments:

- Upgrading Skills for Present Job
- Developing Skills for New Job
- Career Exploration
- Personal Satisfaction and General Knowledge
- Transient Student
- Non-degree Transfer Student
- High School Student (Dual/Concurrent enrollment/Home School enrollment)
- Curricular Admission Pending

Freshman
Students are classified as freshmen until they have earned 30 semester credits.

Sophomore
Students are classified as sophomores after they have earned more than 30 semester credits.

Registration Information
Current information about the registration schedule and procedures is located in on the college website at www.reynolds.edu each semester and summer term.

Registration Periods
Early Bird registration periods are scheduled during the preceding semester or term, primarily to provide priority to continuing students and to those who are prepared to select courses in advance. Early Bird registration is available only through REYNET or Reynolds Online. High school students intending to register for classes must register during the general registration period on campus.

General registration periods are available to students to register in person or through REYNET and Reynolds Online. Students that have academic or financial holds must come to campus for registration.

Late registration periods are scheduled for each semester or term to permit adjustment of class schedules. Except under extenuating circumstances, students may not enter a new class after the add/drop period. Requests for entry after this time must receive special approval.

Self-Registration
Students who are in good academic standing (2.0 GPA or higher) and who are either non-curricular or curricular may generally register (without approval) using REYNET or Reynolds Online. All other students are required to meet with their advisors before registering in person.

Academic Course Load
A full-time course load is 12 or more credit hours. Any student wishing to carry an academic load of more than 18 credits should have a 3.0 GPA or higher and should have the recommendation of a faculty advisor prior to seeking the approval of the school dean. This approval must be presented in person when registering beyond the limit. A student who has received academic warning or academic probation may be required to take less than the normal load for the next semester.

Prerequisites and Course Sequencing
If any prerequisites are required before enrolling in a course, they will be identified in the course description or by an indication of course sequence (please refer to the Course Information section of this catalog). Courses listed ACC 211-212 and ENG 111-112, for example, must be taken in sequence unless otherwise noted in the course description. Courses in special sequences (usually identified by the numerals I-II) must also be taken in sequence, unless otherwise noted in the course description. Prerequisites must be satisfactorily completed before enrolling in a course unless special permission is obtained from the school dean, or designee. Co-requisite courses are to be taken simultaneously.

Repeating a Course
Students are normally limited to two (2) enrollments in the same course. Prior to registering to take a course for a third time, students must submit a completed Request to Repeat Course Form with all required approvals, and documentation of extenuating circumstances to a campus Student Success Center. Repeat approval is not required for certain exempted courses, and all attempted hours and grade points for these courses will be calculated in the GPA. (Also see Repeated Grade.)

Please note: Repeating courses may negatively affect financial aid eligibility.

Withdrawal From Courses
Students are strongly encouraged to meet with the instructor of the course to discuss their academic standing in the course prior to withdrawing from the course. Withdrawal transactions are final and will not be rescinded or modified unless an administrative error by the college has taken place.

<u>On-Time Withdrawals</u>
After the add/drop period and within the first 60% of a semester or term, a student may withdraw from a course without academic penalty and receive a grade of "W" for each withdrawn course. After that time, students shall receive a grade of "F", except under documented mitigating circumstances.

The student must submit a completed "Request to Withdraw from Course" form to one of the Student Success Centers prior to the college's published withdrawal deadline. The form must be submitted prior to the completion of 60% of the class. Students should consult their instructor for withdrawal deadlines for classes that are not the standard semester length.

<u>Late Withdrawals</u>
Withdrawal requests received after 60% of the semester or term will not be granted except under mitigating circumstances. To request a withdrawal after the appropriate withdrawal deadline or after the term has ended, the student must submit a "Late Request for Withdrawal from Course" Form with documentation to support a claim of mitigating circumstances to a campus Student Success Center.

In certain very unusual circumstances (such as extended hospitalization past the end of a term), withdrawals with grades of "W" may be granted after the end of a semester or term and under the conditions described above. In no case, however, will a withdrawal with a grade of "W" be given in any course more than one year after the end of the semester or term.

Official withdrawal for a student, if approved, will become effective on the date the withdrawal form is received by the Student Success Center. Course withdrawals (on time and late) should be presented in person or by the student's authorized representative

Auditing a Course
Students who enroll in a course with audit status are exempt from course examinations or other course achievement measures. Registrations for audit will not be accepted before the late registration period each semester and will require approval of the instructor and school dean. The regular tuition rates will be

charged. Requests for credit enrollment in a class will be given priority over audit enrollment.

Audited courses carry no credit and do not count as part of the student's course load. Students who wish to change the status of a course from audit to credit or from credit to audit must do so within the add/drop period for the semester or session.

Military Students During National Emergency

Reserves/National Guard who are called to active duty and active military that are mobilized during a National Emergency should contact a campus Student Success Center Coordinator for special assistance with their enrollment needs.

Non-Native Speakers of English (English Proficiency)

Admitted curricular and non-curricular students from countries other than Australia, English speaking Canadian provinces, English speaking Caribbean island nations, the Republic of Ireland, the United Kingdom, New Zealand, or the United States will be required to demonstrate their proficiency in English prior to enrollment. To document English proficiency, applicants may forward TOEFL (Test of English as a Foreign Language) scores or appropriate substitute documents to the Central Admissions and Records Office. A minimum score of 550 is required on the paper TOEFL; a score of 213 is required on the computerized TOEFL. A minimum rating of '5' on the Test of Written English is also required. Appropriate substitute documents would include completion of a post-secondary degree or the equivalent of ENG111 (English Composition) with a grade of 'C' or better at an institution located in one of the countries listed above. Non-native speaking applicants who cannot present the minimum required TOEFL score or a substitute document must schedule an English as a Second Language (ESL) test with the ESL office. The college's ESL assessment will also involve a personal interview and submission of a written assignment. Questions about ESL test waivers should be directed to the ESL Department.

The ESL assessment will result in one of the following:

- Clearance to take the college's COMPASS placement tests with native speakers of English (no ESL classes required);
- Initial placement into intensive ESL classes only (no academic classes permitted until ESL department documents preparedness); or,
- Initial placement into certain ESL classes with permission to enroll in a limited area of academic subjects.

Note: Admitted students with ESL requirements will be required to satisfactorily complete the requirements prior to progressing in certain curricular programs, such as Nursing. Please refer to the Program Information section in this Catalog. F-1 Visa applicants should refer to the International Admission section in this catalog.

CLASSROOM AND INSTRUCTIONAL POLICIES AND PROCEDURES

Pass/Unsatisfactory Grading Option

The pass/unsatisfactory (P/U) grading option may be used in non-developmental credit courses. Grades available under the Pass/Unsatisfactory option are "P" and "U". A student that takes a course that is offered with this grading option receives one or the other of these two grades, except where an "I" or "W" is appropriate. The "P" grade is not included in GPA calculations. A maximum of 7 semester credit hours from courses for which the "P" grade has been awarded may be applied toward completion of a degree or certificate.

Minimum performance level for the grade of "P" is equivalent to that required for a grade of "C" in the course. Policy 1-5 (Pass/Unsatisfactory Grading) in its entirety can be found in the Office of Student Affairs, in the Student Handbook and at http://www.reynolds.edu/studentaffairs/policy.htm.

Grading — Developmental Studies

A grade of "S" (Satisfactory) shall be assigned for satisfactory completion of each course in developmental studies or English as a Second Language (ESL) courses numbered 1 - 99. "S" grades are not included in grade point average calculations.

Students making satisfactory progress but not completing all of the instructional objectives for courses in developmental studies or ESL courses shall be graded with an "R" (Reenroll). A student who has earned an "R" must enroll again and successfully complete the course.

Students not making satisfactory progress in developmental studies or ESL courses shall be given a "U" grade. Students on financial aid should check each semester on their grade requirements for making satisfactory progress.

The "I" and "W" grades may be utilized, as appropriate, for developmental studies and ESL courses.

Grade Point Average

The term and cumulative grade point average (GPA) is determined by dividing the total number of grade points earned in courses by the total number of credits attempted. Courses which do not generate grade points are not included in credits attempted (audits, developmental courses, ESL courses, courses taken with pass/unsatisfactory option). The GPA is carried out to three digits past the decimal point (i.e. there is no rounding). See Repeated Grade and Academic Renewal sections below.

Repeated Grade

Effective with the Summer 1994 term the Virginia Community College System (VCCS) implemented a policy which provided that when a course was repeated, only the most recent attempt would be used in the calculation of the student's cumulative grade point average (GPA). This policy only applied to courses attempted and repeated during or after the summer 1994 term. While only the most recent attempt was used in the calculation of the cumulative GPA, all previous attempts remained on the academic record.

Effective with the fall 1996 semester, the policy was made retroactive to summer 1988. Therefore, when students repeat a course taken fall 1996 or later that was repeated summer 1988 or later, only the most recent attempt is used to calculate the cumulative GPA. Courses completed and repeated during the initial period of the repeat policy (summer 1994 - summer 1996) for which GPA adjustments have already been made, are not affected. Additionally, adjustments made as a part of "academic renewal" (see page 33) are not affected. Only the latest attempt is used in determining if graduation requirements are met.

Certain courses are exempt from consideration as repeats and an adjustment to the GPA is not made, including but not limited to courses with course numbers 090, 190, 290, 095, 195, 295, 096, 196, 296, 097, 197, 297, 098, 198, 298, 099, 199, and 299.

Periodically the VCCS will rename or renumber courses but they remain equivalent to the previous named and numbered courses. In such cases, completion of a renumbered/renamed course may be determined to be a repeat of a course completed previously under a different department and/or course number. These determinations are made on a college-wide basis, and exceptions cannot be made for an individual student.

Implementation of this policy does not revise any GPA calculations for prior terms or any academic, financial, or administrative events that have occurred in the past. Any questions should be directed to the Registrar.

Final Grades

Final grades for each semester will be available by phoning REYNET, or they can be viewed and printed using Reynolds Online. Students must have their JSRCC EMPLID and password to obtain their grades.

The grades of A, B, C, D, P, and S are passing grades. Grades of F and U are failing grades. R and I are interim grades. Grades of W and X are final grades carrying no credit.

Academic Renewal

Students who re-enroll at the college after a separation of at least sixty consecutive months may submit the "Petition for Academic Renewal" form to the Central Admissions and Records Office or to a campus Student Success Center. If the student is found eligible, an Academic Renewal notation will be placed on the student's permanent record and transcript. All "D" and "F" grades earned prior to the re-enrollment will appear on the record, but they will be deleted from the cumulative grade point average, subject to the following conditions:

- Prior to petitioning, the student must earn at least a 2.500 grade point average (using grades of "A," "B," "C," "D," and "F") in the first twelve hours after re-enrollment.
- Any course credit with a grade of "D" earned prior to the re-enrollment will not count toward graduation requirements. Previous diplomas, certificates, or degrees will not be rescinded in order to qualify the student.
- Academic Renewal adjustment will be granted only once and cannot be revoked.
- The granting of Academic Renewal does not affect any previous academic, financial, or administrative decisions made by the college.

Academic Standing

President's Honor Roll

The President's Honor Roll is awarded to curricular and non-curricular students who demonstrate the highest level of academic achievement at the college. In order to receive this recognition, students must have:

- Earned a cumulative GPA of 3.8 or higher
- Earned a semester GPA of 3.5 or higher
- Carried at least 6 non-developmental credit hours for the semester
- Earned 20 or more credit hours at JSRCC
- Earned no grades of D, F, I, or U for the semester
- Earned no more than 1 W for the semester

** Students who earn this distinction will receive a letter and certificate during the beginning of the subsequent semester.*

Dean's List

The Dean's List is awarded to curricular and non-curricular students who demonstrate a high level of academic achievement at the college. In order to receive this recognition, students must have:

- Earned a semester GPA of 3.2 or higher
- Carried at least 6 non-developmental credit hours for the semester
- Earned no grades of D, F, I, or U for the semester
- Earned no more than 1 W for the semester
- Students who earn this distinction will receive a letter and certificate during the beginning of the subsequent semester.

Good Standing

Students are considered to be "in good academic standing" if they maintain a GPA of 2.000 each semester and are not on academic suspension or dismissal. They are eligible to reenroll at the college.

Academic Warning

Students who fail to attain a minimum grade point average of 2.000 for any semester will receive an academic warning which is placed on the student's permanent record.

Academic Probation

Students who fail to maintain a cumulative grade point average of 1.500 will be on academic probation until such time as their cumulative average is 1.500 or better. The statement "Academic Probation" will be placed on the permanent record. Generally, students on academic probation are ineligible for appointed or elected office in student organizations unless the associate vice president of student affairs or another appropriate administrator grants them special permission. Students usually will be required to carry less than a normal course load the following semester. Students on academic probation are required to consult with their academic advisor prior to enrollment. 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 cumulative grade point average of 1.500 will be placed on suspension only after they have attempted 24 semester credit hours. Academic suspension normally will be for one semester. The statement "Academic Suspension" will be placed on the student's permanent record. Suspended students may be readmitted after termination of the suspension period without appealing for reinstatement. Upon reinstatement the student will be required to meet with an academic advisor and develop an educational plan to be followed until such time that the cumulative grade point average reaches 2.000.

Academic Dismissal

Students who do not maintain at least a 2.000 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 2.000 grade point average for the semester of their reinstatement must maintain at least a cumulative 1.500 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 1.500. Failure to earn a semester 1.500 grade point average in each subsequent semester until cumulative GPA reaches 1.500 will result in academic dismissal. Academic dismissal is normally permanent. The statement "Academic Dismissal" will be placed on the student's permanent record. Dismissed students who wish to re-enroll must appeal for reinstatement.

Reinstatement from Suspension or Dismissal

To be considered for immediate reinstatement, a suspended student must submit a Reinstatement Form or written appeal along with any documentation that helps support the request for reinstatement prior to the late registration period for the semester they wish to attend.

Dismissed students that would like to be considered for reinstatement must submit the Reinstatement Form along with supporting documentation by the following deadline:

- July 1st for Fall reinstatement
- November 1st for Spring reinstatement
- April 1st for Summer reinstatement

The college will ensure consideration of all appeals for reinstatement, including a review of the student's academic history at the college and documentation of mitigating circumstances. Decisions to reinstate may be accompanied by conditions designed to ensure the student's improved performance. Decisions to deny reinstatement will result in the continued enforcement of suspension or dismissal terms. Students who are not granted reinstatement will be dropped from any courses for which they may have pre-registered, and their tuition will be refunded automatically.

Advanced Standing and Transfer Credit from Other Colleges

Advanced standing is defined as the application of awarded credit, earned by means other than instruction at this institution, toward satisfying program requirements. No more than 75% of a degree or certificate may be earned through advanced standing credit. Transcripts are evaluated for curricular students only. Courses from a student's official transcript that are equivalent and relevant to the curriculum in which he or she is enrolled will be applied towards credit in his or her program. Awarded credit is added to the student's permanent record, but is not used for computation of the grade point average and does not carry a letter grade.

The Central Admissions and Records Office evaluates requested advanced standing and places advanced standing, by type, on the permanent record and transcript. It is the student's responsibility to ensure that all relevant and official documents have been forwarded to the Central Admissions and Records Office. Transcripts are considered official, if they are in a sealed envelope and carry the seal of the institution or are printed on official college letterhead. Credit evaluation for courses taken at other VCCS colleges can be requested in writing; official transcripts from other VCCS colleges are not necessary.

Transfer credit awarded is available to view on the Student Information System. Official transcripts received four weeks prior to the beginning of the desired semester or term will be placed on the Student Information System prior to the final registration period. Transcripts received after that point will be evaluated as time permits and in date priority. Students should address questions regarding advanced standing with the college registrar.

Credit will be awarded only for courses earning a grade of "C" or better or the equivalent. When the course contains equivalent content and credit, the course may transfer to satisfy a program requirement at this institution. This college evaluates credit for transfer from other colleges and universities, using the guidance of the American Association of Collegiate Registrars and Admission Officers or the National Association for Foreign Student Affairs, and the Southern Association of Colleges and Schools.

Transfer Credit from International Institutions

Credit from international post-secondary institutions may be awarded upon evaluation by a private evaluation agency that is a member of the National Association of Credential Evaluation Services (www.races.org). This process pertains to both international students seeking JSRCC transfer credit and JSRCC students earning

credits at foreign institutions during study-abroad experiences. The student will send official trnacripts to an approved agency to obtain a course-by-course evaluation. All fees must be paid by the students directly to the evaluation agency. This evaluation is provided to Central Admissions and Records so that credit can be assigned based on the student's chosen curriculum in accordance with established college policies.

Credit by ABLE (Local Examination)

Credit by ABLE is available at the discretion of the academic program and is not available for all courses taught at JSRCC. Academic deans and program heads have the discretion to deny requests for credit by ABLE. In programs where CLEP/AP/IB credit are not available as a means to test to receive academic credit, credit by ABLE may be a means of earning college credit for prior learning by demonstrating satisfactory academic competency in a particular subject.

Students interested in pursuing credit by ABLE should contact the appropriate academic program head of the curriculum.

Prior Learning Activity for Credit Evaluation

This process is designed for adults who have gained college level learning through work, volunteer activities, participation in civic and community assignments and similar life experiences. The process allows for students to develop portfolios, based on their experiences, to demonstrate learning equivalency to one or more college courses. Credit can only be applied if it is accepted by the faculty and after the student has successfully completed at least one course at JSRCC. Portfolio-based credit for prior experiential learning may be awarded for no more than 25 percent of the credit hours applied toward a degree. The determination of such credit must be determined by the program head and approved by the school dean.

Military Credit

Credit will be granted for military service school courses and skills if the awarding of credit is recommended in the current edition of the American Council on Education publication, *a Guide to the Evaluation of Educational Experiences in the Armed Services*, and approved by the division dean of the student's chosen curriculum.

Credit for Occupational Experience

Credit for occupational experience may be granted for courses or programs offered by employers, professional organizations and other agencies only if those courses or programs have been evaluated by the American Council on Education (ACE). Non-traditional sources of college-equivalent learning may include a combination of formal and/or informal workplace training programs as evaluated by ACE and military training programs.

Credit by Advanced Placement

Students may receive advanced standing through the administration of the College Level Examination Program (CLEP), the College Entrance Examination Board (CEEB), advanced placement (AP) program, or the International Baccalaureate (IB) program, provided the examination scores are acceptable for credit. The required scores and appropriate credit hours awarded are listed on the following page:

CLEP Exam Title	Written Test Minimum Score for credit prior to 7/1/01	Computer Test Minimum Score for credit as 7/1/01	# of Credits Awarded	JSRCC/VCCS Course Equivalent
GENERAL EXAMS				
English Composition with Essay	420	50	3	ENG 111
College Composition with Essay		50	3	ENG 111
Humanities	460	50	3	Humanities Elective
College Mathematics	450	50	6	MTH 151-152
Social Sciences and History	430	50	3	Social Science or History Elective
SUBJECT EXAMINATIONS				
Composition and Literature				
American Literature	46 plus essay	50	6	ENG 241-242
English Literature	46 plus essay	50	6	ENG 243-244
Freshman College Composition	44 plus essay	50	3	ENG 111
Foreign Language				
French • Level 1 • Level 2	 39 45	 50 52	 8 14	 FRE 101-102 FRE 101-102,201-202
German • Level 1 • Level 2	 36 42	 50 63	 8 14	 GER 101-102 GER 101-102,201-202
Spanish • Level 1 • Level 2	 41 50	 50 54	 8 14	 SPA 101-102 SPA 101-102, 201-202
History and Social Science				
American Government	47	50	3	Social Science Elective
History of United States I Early Colonization to 1877	45	50	3	HIS 121
History of United States II, 1865 to Present	45	50	3	HIS 122
Human Growth and Development	45	50	3	PSY 230
Principles of Macroeconomics	44	50	3	ECO 201
Principles of Microeconomics	41	50	3	ECO 202
Introduction to Psychology	47	50	3	PSY 201
Introduction to Sociology – Comparative	47	50	3	SOC 200

On July 1, 2010, CLEP will discontinue the English Composition with Essay and Freshman College Composition Exams.

Some four-year institutions do not allow transferred CLEP credits to satisfy degree requirements. If planning to transfer to a college or university, contact its Admissions office to find out how it uses CLEP credits.

AP Exam Title	Minimum Score for Credit	# of Credits Awarded	JSRCC/VCCS Course Equivalent
THE ARTS			
Art History	3	6	ART 101-102 History and Appreciation of Art I-II, 3 credits each
Art, Studio: Drawing	3	4	ART 121 Drawing I, 4 credits
Art Studio: 3D Design	3	4	ART 131 Fundamentals of Design I, 4 credits
Music Theory	3	4	MUS 111
THE SCIENCES			
General Biology	4	8	BIO 101-102
Chemistry	4	8	CHM 111-112
Computer Science A	4	4	CSC 201
Computer Science AB	3	4	CSC 201
Calculus AB	3	5	MTH 173
Calculus BC	3	5	MTH 174
Physics B	4	8	PHY 201-202
Physics C Mechanics	N/A	0	There is none. This is not equivalent to PHY 241 University Physics
Physics C Electricity and Magnetism	N/A	0	This is not equivalent to PHY 242 University Physics
LANGUAGES AND LITERATURE			
English, Language & Composition	3	3	ENG 111
English, Literature & Composition	3	6	ENG 111-112
French, Language	3	8	FRE 101-102
French, Literature	3	6	FRE 233-234
German, Language	3	6	GER 201-202
Spanish, Language	3	6	SPA 201-202
Spanish, Literature	3	6	SPA 233-234
SOCIALSCIENCES			
Human Geography3	3	3	GEO 210
United States Government and Politics	3	3	PLS 211
Comparative Government and Politics	3	6	Social Science Elective
History, United States	3	6	HIS 121-122
History, European	3	6	HIS Elective
Economics, Macro	3	3	ECO 201
Economics, Micro	3	3	ECO 202
Psychology	3	6	PSY 201-202
World History	3	3	History Elective

All Virginia community colleges shall accept a score of three (3) and higher for Advanced Placement (AP) courses, however, students are encouraged to check required scores for transferability to four-year institutions. The amount of credit awarded for each examination will be consistent with The College Board's recommendations.

IB Exam Title	Minimum Score for Credit	# of Credits Awarded	JSRCC/VCCS Course Equivalent
ARTS AND SOCIAL SCIENCES			
Art Design HL	4,5 6,7	4 8	ART 131 – Fundamentals of Design ART 131-132 - Fundamentals of Design I & II
English A1	4,5 6,7	3 6	ENG 111 College Composition I ENG 111-112 College Composition I and II
English B	4,5,6,7	3	ENG 111 College Composition I
French Language HL	5,6, 7	12	FRE 101, 102, 201, 202
German Language HL	5,6,7	12	GER 101, 102, 201, 202
History: Americas HL	4,5,6,7	6	HIS 121 – 122 United States History I-II
History: Americas SL	6,7	3	HIS 121 United States History I
History: Africa HL	4,5,6,7	3	HIS 203- History of African Civilization
History: Europe HL	4,5,6,7	6	HIS 101-102 History of Western Civilization I-II
History: Europe SL	6,7	3	HIS 101 History of Western Civilization I
Philosophy HL	4,5,6,7	3	PHI 101 – Introduction to Philosophy
Philosophy SL	6,7	3	PHI 101 – Introduction to Philosophy
Spanish HL	5,6,7	12	SPA 101, 102, 201, 202
Theory of Knowledge	A,B,C	3	PHI 101 – Introduction to Philosophy
MATHEMATICS AND SCIENCES			
Biology HL	4,5 6 7	4 4 8	BIO 106 Life Science BIO 101 General Biology I BIO 101-102 General Biology I - II
Biology SL	5,6 7	4 4	BIO 106 Life Science BIO 101 General Biology I
Chemistry HL	5 6,7	4 8	CHM 111 College Chemistry I CHM 111-112 College Chemistry I-II
Chemistry SL	6 7	4 8	CHM 111 College Chemistry I CHM 111-112 College Chemistry I-II
Physics HL	4,5 6,7	4 8	PHY 201 General College Physics PHY 201-202 General College Physics 201-202
Physics SL	5,6 7	4 8	PHY 201 General College Physics PHY 201-202 General College Physics 201-202
Mathematics (Further) SL	4,5,6,7	3	MTH 163 - Precalculus
Mathematics (Higher) HL	4 5,6 7	3 5 10	MTH 163 – Precalculus MTH 173 – Calculus/Analytic Geo. I MTH173-174 - Calculus/Analytic Geo. I-II
Mathematical Methods SL	5,6,7	5	MTH 166 – Precalculus with Trigonometry
Mathematical studies	4,5,6,7	3	MTH 163 - Precalculus
Computer Science HL	4,5 6,7	4 8	CSC 201 CSC 201-202
Computer Science SL	5,6 7	4 8	CSC 201 CSC 201-202

PROGRAM INFORMATION

Educational Choices

College Transfer Programs
Awards – Associate of Arts (AA)
Associate of Science (AS)

The college transfer programs include freshman- and sophomore-level courses in arts and sciences and preprofessional education, meeting standards acceptable for transfer to bachelor degree programs in four-year colleges and universities. These programs are specifically designed for transfer at the junior level.

University Parallel Study The college offers programs leading to the Associate of Arts (AA) degree or the Associate of Science (AS) degree. Commonly referred to as college transfer or university parallel study, these programs are designed for students who plan to complete the freshman and sophomore years of college work at J. Sargeant Reynolds Community College and then transfer to universities and four-year colleges of their choice. Each university has different requirements for baccalaureate programs. College advisors and specialists in the Career, Employment and Transfer Centers will assist students in the selection of the curriculum of study most applicable to their baccalaureate plans. Earned credits in the program are generally transferable to the senior college or university and applicable toward a bachelor's degree. Students should work with their academic advisors and transfer specialists to select their courses to match the requirements of the transfer institution.

The college has articulation agreements for specific academic programs with several Virginia universities and colleges. Such agreements guarantee that the student with the associate degree has complete transferability of all credits. A student transferring prior to the receipt of the Associate of Arts or Associate of Science degree is not assured of such status. Advisors and transfer specialists can provide information about articulation agreements.

J. Sargeant Reynolds Community College offers the following specific programs of study leading to the Associate of Arts or Associate of Science degrees:

Associate of Arts Degree
Liberal Arts
  Teacher Preparation Specialization
Associate of Science Degree
Business Administration
Engineering
Science
  Computer Science Specialization
  Mathematics Specialization
  Teacher Preparation Specialization
Social Sciences
  American Sign Language/Deaf Studies Specialization
  Teacher Preparation Specialization

The foundation courses are available (through the Associate of Arts or Associate of Science degrees) for advanced professional degree programs in the following fields:
Dentistry
Law
Medicine
Optometry
Pharmacy
Veterinary Medicine

The college also offers two-year programs that lead to the Associate of Applied Science (AAS) degree. These occupational/technical programs are specifically designed to prepare students for immediate employment. Some four year colleges and universities have accepted courses into their program counterparts from AAS degree programs that are not designed for transfer purposes. It is the responsibility of the four-year institution to determine and publish its policies on the admission of transfer students and the criteria for determining the acceptability of transfer credits completed at another institution. Additional general education courses may be required to transfer with junior status from AAS degree programs. Students should work closely with their academic advisors and the transfer specialists to select courses that match requirements of the transfer institution.

State Policy on Transfer from Community Colleges to Senior Institutions
Virginia's system of public colleges and universities has extended higher education throughout the Commonwealth from Eastern Shore to Big Stone Gap and from Fairfax to Southside. The system gives students ready access to college and enables them to choose from among many two- and four-year institutions. Ideally, students should be able to move through Virginia's public education system as if it were a continuum, rather than a system of distinct levels or separate stages. The State Board for Community Colleges and the Council of Higher Education for Virginia have endorsed a coherent statewide policy to facilitate transfer between state-supported community colleges and senior colleges and universities. This policy requires commitment by both community colleges and senior institutions to common goals on behalf of students and education.**Notes from State Policy on Transfer, VCCS/SCHEV.

Transfer Articulation Agreements
J. Sargeant Reynolds Community College has agreements with many senior Institutions covering the conditions for student transfer from the college to a baccalaureate program at the four-year college or university. These formal arrangements are referred to as articulation agreements. The arrangements fall into two categories—the master articulation agreement which provides general guarantees to transferring students and the program specific articulation agreement covering the conditions for the transfer into a particular curriculum. Students transferring prior to the receipt of the Associate of Arts or Associate of Science degree are not covered under these articulation agreements. Advisors and transfer specialists can provide information about these agreements.

The following list identifies colleges and universities with which J. Sargeant Reynolds Community College has current agreements, as a result of either direct negotiations between the college and the transfer institution or the creation of a system-wide agreement between the Virginia Community College System and the transfer institution.

Bluefield College
Christopher Newport University
College of William and Mary (Guaranteed Admission Agreement)
College of William and Mary (Co-Enrollment Agreement)
ECPI College of Technology
Emory & Henry College
Ferrum College
Hollins University
James Madison University (Guaranteed Admission Agreement)
James Madison University (RN-BSN Nursing Agreement)
Liberty University
Longwood University (Guaranteed Admission Agreement)
Lynchburg College
Mary Baldwin College
Norfolk State University
Old Dominion University
Radford University
Randolph College
Randolph-Macon College
Regent University
Regis University
Shenandoah Conservatory–A School of Shenandoah University (Music)
Strayer University
Sweet Briar College
Troy University
University of Mary Washington
University of Phoenix
University of Richmond, School of Continuing Studies
University of Virginia (Guaranteed Admission Agreement)
University of Virginia (Engineering)
University of Virginia's College at Wise

Virginia Commonwealth University (Guaranteed Admission Agreement)
Virginia Commonwealth University (Administration of Justice/Criminal Justice-Cadet Program)
Virginia Commonwealth University (Business Administration)
Virginia Commonwealth University (Engineering and Computer Science)
Virginia Commonwealth University (Music)
Virginia Commonwealth University (Teacher Preparation)
Virginia State University
Virginia Tech (Guaranteed Admission Agreement)
Virginia Tech (College of Agriculture and Life Sciences)
Virginia Tech (College of Engineering)
Virginia Union University
Virginia Wesleyan College

Occupational and Technical Programs

Associate of Applied Science (AAS) Certificate

The occupational and technical education programs are designed to prepare students for employment as technicians, paraprofessionals, and skilled crafts-persons.

The Associate of Applied Science degree is awarded for completion of two-year programs.

The Certificate award is given for completion of a program less than two years in length, generally two or three semesters.

Career Studies Programs

Award – Certificate

Career Studies Certificates can be completed in a shorter period of time than other certificate programs. These programs provide opportunities for upgrading occupational or technical skills, retraining for career change, and investigating new career possibilities.

--Plans of Study and Program Directory

The **Academic Plans by School** table below shows the plan's contact number for each campus location as appropriate. Also, in the appropriate Campus Location column, "**Complete**" indicates that the plan's certificate or degree can be completed at that campus. "**Courses**" indicates that one or more courses for the plan are offered at that campus.

The **Distance** campus location indicates Distance Learning courses, which are typically taught online. Some distance learning courses may require proctored exams, on-campus labs, clinicals, or other special on-campus meetings. For information on Distance Learning, contact the Center for Distance Learning at the following phone numbers: (804)523-5612 or (800)711-1628 (Virginia only).

School of Business and Engineering						
Plans	**Certificate or Degree**	**Plan Code**	**Campus Locations** (area code 804)			
			Downtown	**Parham**	**Western**	**Distance**
Accounting	AAS	203	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Accounting	C	202	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Administration of Justice	AAS	400-01	Courses	523-5301 **Complete**	Courses	Courses
Administrative Support Technology	C	398	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Architectural and Civil Engineering Technology						
Architectural/Industrial Design	AAS	895-01	Courses	523-5225 **Complete**	Courses	Courses
Building Construction Management	AAS	895-02	Courses	523-5225 **Complete**	Courses	Courses
Civil Engineering Technology	AAS	895-03	Courses	523-5225 **Complete**	Courses	Courses
Automotive Technology	AAS	909	Courses	Course	523-5432 **Complete**	Courses
Automotive Technology	C	902	Courses	Courses	523-5432 **Complete**	Courses
Business Administration	AS	213	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Computer-Aided Design Specialist	CSC	221-729-01	Courses	523-5225 **Complete**	Courses	Courses
Criminal Justice	CSC	221-400-45	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Culinary Arts[1]	AAS	242	523-5781 Courses	Courses	Courses	Courses
Diesel Mechanics Technology	C	920	Courses	Courses	523-5432 **Complete**	Courses
eCommerce	CSC	221-251-01	Courses	523-5301 **Complete**	Courses	**Complete**
Electronics Technology	CSC	221-981-15	Courses	523-5225 **Complete**	Courses	Courses
Engineering	AS	831	Courses	523-5225 **Complete**	Courses	Courses
Entrepreneurship in Small Business	CSC	221-212-10	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Fire Science Technology						
Fire Services	AAS	427-01	Courses	523-5518 **Complete**	Courses	Courses
Fire Protection System Design	AAS	427-02	Courses	523-5518 **Complete**	Courses	Courses
Fire Science Technology	C	428	Courses	523-5518 **Complete**	Courses	Courses
Floral Design	CSC	221-335-02	Courses	Courses	523-5432 **Complete**	Courses
Business	[illegible]	[illegible]	**Complete**	**Complete**	[illegible]	[illegible]
Fire Science Technology	AAS	427	Courses	523-5518 **Complete**	Courses	Courses

Horticulture Technology	AAS	335	Courses	Courses	523-5432 **Complete**	Courses
Hospitality Leadership	CSC	221-775-03	523-5069 Courses	Courses	Courses	**Complete**
Hospitality Management						
Food Service Management[2]	AAS	775-07	523-5069 Courses	Courses	Courses	Courses
Hospitality Entrepreneurship[2]	AAS	775-06	523-5069 Courses	Courses	Courses	Courses
Lodging Operations[2]	AAS	775-04	523-5069 Courses	Courses	Courses	Courses
Hotel Rooms Division Management	CSC	221-775-05	523-5069 Courses	Courses	Courses	**Complete**
Information Systems Technology						
Computer Programmer	AAS	299-01	Courses	523-5301 **Complete**	Courses	Courses
Microcomputer Technical Support (Networking)	AAS	299-03	Courses	523-5301 **Complete**	Courses	Courses
Microcomputer Applications (Administrative/ Office Applications)	AAS	299-04	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Internet Applications Development (Web Design)	AAS	299-05	Courses	523-5301 **Complete**	Courses	Courses
Information Systems Technology						
Computer Programmer	CSC	221-299-06	Courses	523-5301 **Complete**	Courses	Courses
Internet Applications Development (Web Design)	CSC	221-299-18	Courses	523-5301 **Complete**	Courses	Courses
Microcomputer_Applications	CSC	221-299-03	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Microsoft Network Administration	CSC	221-299-07	Courses	523-5301 **Complete**		Courses
Network Engineering	CSC	221-732-11	Courses	523-5301 **Complete**		Courses
Network Fundamentals	CSC	221-732-00	Courses	523-5301 **Complete**		Courses
Legal Office Technology	CSC	221-260-10	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Management						
Retail Management	AAS	212-03	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Small Business Management	AAS	212-04	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Management Development	C	223	523-5177 **Complete**	523-5301 **Complete**	Courses	Courses
Paralegal Studies						
General Practice	AAS	260-01	Courses	523-5263 **Complete**	Courses	Courses
Litigation	AAS	260-02	Courses	523-5263 **Complete**	Courses	Courses
Pastry Arts	CSC	221-242-04	523-5781 **Complete**	Courses	Courses	Courses
Public Transportation/ Diesel Maintenance	CSC	221-920-82	Courses	Courses	523-5432 **Complete**	Courses
Real Estate	CSC	221-212-70	Courses	523-5301 **Complete**	Courses	Courses
Surveying Technology	CSC	221-915-01	Courses	523-5225 **Complete**	Courses	Courses
Welding	CSC	221-995-01	Courses	Courses	523-5432 **Complete**	Courses

School of Humanities and Social Sciences						
American Sign Language	CSC	221-640-01	523-5177 **Complete**	Courses	Courses	Courses
American Sign Language - English Interpretation	AAS	640	523-5177 **Complete**	Courses	Courses	Courses
Early Childhood _Development	AAS	636	523-5374 **Complete**	Courses	Courses	**Complete**
Early Childhood _Development	C	632	523-5374 **Complete**	Courses	Courses	**Complete**
Early Childhood Education	CSC	221-636-06	523-5374 **Complete**	Courses	Courses	**Complete**
Early Childhood Education - Advanced	CSC	221-636-08	523-5374 **Complete**			Courses
Early Childhood - School-Age Child Care	CSC	221-636-07	523-5374 **Complete**	Courses	Courses	Courses
General Education	C	695	523-5374 **Complete**	523-5177 **Complete**	Courses	Courses
Human Services	AAS	480	523-5374 **Complete**	Courses	Courses	Courses
Liberal Arts	AA	648	523-5177 **Complete**	523-5263 **Complete**	Courses	Courses
Teacher Preparation	AA	648-TP	523-5177 **Complete**	523-5263 **Complete**	Courses	Courses
Social Sciences	AS	882	523-5177 **Complete**	523-5263 **Complete**	Courses	Courses
American Sign Language/ Deaf Studies	AS	882-01	523-5177 **Complete**	Courses	Courses	Courses
Teacher Preparation	AS	882-TP	523-5177 **Complete**	523-5263 **Complete**	Courses	Courses
Substance Abuse Counseling Education	CSC	221-480-30	523-5374 **Complete**	Courses	Courses	Courses
School of Mathematics and Science						
Science	AS	880-01	523-5374 **Complete**	523-5225 **Complete**	Courses	Courses
Computer Science	AS	880-02	Courses	523-5225 **Complete**	Courses	Courses
Mathematics	AS	880-05	Courses	523-5225 **Complete**	Courses	Courses
Teacher Preparation	AS	880-TP	523-5374 **Complete**	523-5225 **Complete**	Courses	Courses
School of Nursing and Allied Health						
Dental Assisting	C	120	523-5380 **Complete**	Courses	Courses	Courses
Dental Assisting	CSC	221-120-02	523-5380 **Complete**			
Dental Laboratory Technology	AAS	117	523-5931 **Complete**	Courses	Courses	Courses
Dental Laboratory Technology	CSC	221-117-02	523-5931 **Complete**	Courses	Courses	Courses
Emergency Medical Services - Paramedic	AAS	146	523-5768 Courses	Courses	Courses	Courses
Emergency Medical Services EMT-Basic	CSC	221-146-01	Courses	523-5768 **Complete**	Courses	Courses
Emergency Medical Services EMT-Intermediate	CSC	221-146-03	523-5768 Courses	Courses		Courses
Emergency Medical Services EMT-Paramedic	CSC	221-146-05	523-5768 Courses	Courses		Courses
Health Care Technician	CSC	221-190-06	523-5375 **Complete**	Courses	Courses	Courses
Health Records Coding Technician[3]	CSC	221-152-06	523-5375 Courses	Courses		Courses
Medical Laboratory Technology	AAS	151	523-5375 **Complete**	Courses	Courses	**Complete**
Nursing	AAS	156	523-5375 **Complete**	Courses	Courses	Courses

Opticianry	AAS	160	523-5415 **Complete**	Courses	Courses	**Complete**
Opticians Apprentice	CSC	221-160-04	523-5415 **Complete**			**Complete**
Pharmacy Technician	CSC	221-190-08	523-5375 **Complete**			Courses
Practical Nursing	C	157	523-5375 **Complete**	Courses	Courses	Courses
Pre-Nursing and Allied Health						
Pre-Nursing	CSC	221-156-02	523-5375 **Complete**	**Complete**	Courses	**Complete**
Pre-EMS-Paramedic	CSC	221-146-04	523-5375 **Complete**	Courses	Courses	**Complete**
Pre-Opticianry	CSC	221-160-01	523-5375 **Complete**	**Complete**	**Complete**	**Complete**
Pre-Dental Laboratory Technology	CSC	221-117-01	523-5375 **Complete**	Courses	Courses	Courses
Pre-Medical Lab Technology	CSC	221-151-01	523-5375 **Complete**	**Complete**	Courses	**Complete**
Pre-Respiratory Therapy	CSC	221-181-02	523-5375 **Complete**	**Complete**	Courses	**Complete**
Pre-Practical Nursing and Dental Assisting						
Pre-Dental Assisting	CSC	221-120-01	523-5375 **Complete**	**Complete**	Courses	**Complete**
Pre-Practical Nursing	CSC	221-157-02	523-5375 **Complete**	Courses	Courses	**Complete**
Respiratory Therapy	AAS	181	523-5009 **Complete**	Courses	Courses	**Complete**
Respiratory Therapy Advanced Practice	CSC	221-181-03	523-5009 **Complete**	Courses	Courses	**Complete**

[1]All courses in the Culinary Arts AAS degree may be completed at the Downtown Campus except HRI 119, which is offered only via distance learning.
[2] Completion of the Hospitality Management AAS degree requires that classes be taken both at the Downtown Campus and via distance learning.
[3]Completion of the Health Records Coding Technician CSC requires that classes be taken at both the Downtown and Parham Road Campuses

CURRICULAR PLANNING AND DESIGN

General Information Pertaining to Curricular Offerings

In the following section, descriptions of all Associate Degree and Certificate curriculums offered by the college are presented. Each curriculum description (1) provides a statement of purpose or intent of the curricular program, (2) states the occupational or transfer objectives for the program, (3) specifies curriculum admission requirements for entry into the program, (4) states the required courses and minimum number of credit hours for completion, and (5) provides an outline for sequencing the courses of study. Each curriculum is structured in accordance with policies established by the State Board for Community Colleges in Virginia. Additionally, the curriculums for all associate degree programs meet criteria set forth by the Commission on Colleges of the Southern Association of Colleges and Schools.

Curriculums for which the Associate of Applied Science and Certificate are awarded are all structured to ensure that graduates of these programs have a significant general education foundation, in addition to the necessary skill development training. For the AAS degree, general education comprises approximately 25 percent of the total credit hours; for Certificate programs (not Career Studies Certificates), this figure is a minimum of 15 percent.

The Associate of Arts and Associate of Science degree programs are designed for transfer to baccalaureate programs offered at four-year colleges and universities. **To avoid transfer problems, students should carefully select courses to fulfill elective requirements with the assistance of their advisors and upon an investigation of the transfer requirements of the institution to which transfer is contemplated.** Not all curriculums of study are available on all campuses due to the specialized nature of the human and physical resources required to offer the instructional program. General education courses in the curriculums, however, may be taken at any of the three campus locations.

The following table presents the requirements for associate degrees at J. Sargeant Reynolds Community College:

Minimum Requirements for Associate Degrees

General Education:	Minimum Number of Semester Hour Credits			
	AA	AS	AAA	AAS
Communication (a)	6	6	3	3
Humanities/Fine Arts	6	6	3	3
Foreign Language				
(Intermediate Level)	6	0	0	0
Social/Behavioral Sciences	9(b)	3	3	9
Sciences	7	7	0 or 3(c)	0 or 3(c)
Mathematics	6	6	0 or 3(c)	0 or 3(c)
Personal Development(d)	2	2	2	2
Other Requirements for Associate Degrees:				
Major field courses and electives (AA, AS); Career/technical courses (AAA, AAS)	18-21	24-27	49-53 (e)	49-53 (e)
Total for Degree (f)	60-63	60-63	65-69	65-69

(a) Must include at least one course in English composition.
(b) Only 6 semester hours of social/behavioral sciences are required for engineering majors who plan to transfer to a baccalaureate degree engineering program that requires 6 or fewer hours in this category, provided that the college/ university publishes such requirements in its transfer guide.
(c) AAA and AAS degree programs must include a minimum of 3 credits in

General Education Definition

General education is that portion of the collegiate experience that addresses the knowledge, skills, competencies, attitudes, and values characteristic of an educated and well-informed citizen capable of functioning effectiveness in a complex and rapidly changing world. General education is unbounded by disciplines and honors the connections among bodies of knowledge – it is that portion of the college experience that pertains to the overall development of the student and not just to the specific occupational and/or program skills.

General Education Goals and Objectives/Outcomes

J. Sargeant Reynolds Community College degree graduates will demonstrate competency in the following general education areas:

1. Communication: A competent communicator can interact with others using all forms of communication, resulting in understanding and being understood.

Degree graduates will demonstrate the ability to

1.1 understand and interpret complex materials;
1.2 assimilate, organize, develop, and present an idea formally and informally;
1.3 use standard English;
1.4 use appropriate verbal and non-verbal responses in interpersonal relations and group discussions;
1.5 use listening skills; and
1.6 recognize the role of culture in communication

2. Critical Thinking: A competent critical thinker evaluates evidence carefully and applies reasoning to decide what to believe and how to act.

Degree graduates will demonstrate the ability to:

2.1 discriminate among degrees of credibility, accuracy, and reliability of inferences drawn from given data;
2.2 recognize parallels, assumptions, or presuppositions in any given source of information;
2.3 evaluate the strengths and relevance of arguments on a particular question or issue;
2.4 weigh evidence and decide if generalizations or conclusions based on the given data are warranted;
2.5 determine whether certain conclusions or consequences are supported by the information provided; and
2.6 use problem solving skills.

3. Cultural and Social Understanding: A culturally and socially competent person possesses an awareness, understanding, and appreciation of the interconnectedness of the social and cultural dimensions within and across local, regional, state, and global communities.

Degree graduates will demonstrate the ability to:

3.1 assess the impact that social institutions have on individuals and culture—past, present, and future;
3.2 describe their own as well as others' personal ethical systems and values within social institutions; and
3.3 recognize the impact that arts and humanities have upon individuals and cultures.
3.4 recognize the role of language in social and cultural contexts.
3.5 recognize the interdependence of distinctive world-wide social, economic, geo-political, and cultural systems

4. Information Literacy: A person who is competent in information literacy recognizes when information is needed and has the ability to locate, evaluate, and use it effectively. This statement was adapted from the Association of College and Research Libraries (ACRL) definition, a division of the American Library Association (ALA).

Degree graduates will demonstrate the ability to:

4.1 determine the nature and extent of the information needed;
4.2 access needed information effectively and efficiently;
4.3 evaluate information and its sources critically and incorporate selected information into his or her knowledge base;
4.4 use information effectively, individually or as a member of a group, to accomplish a specific purpose; and
4.5 understand many of the economic, legal, and social issues surrounding the use of information and access and use information ethically and legally.

5. Personal Development: An individual engaged in personal development strives for physical well-being and emotional maturity.

Degree graduates will demonstrate the ability to

5.1 develop and/or refine personal wellness goals; and
5.2 develop and/or enhance the knowledge, skills, and understanding to make informed academic, social, personal, career, and interpersonal decisions.

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

Degree graduates will demonstrate the ability to:

6.1 use logical and mathematical reasoning within the context of various disciplines;
6.2 interpret and use mathematical formulas;
6.3 interpret mathematical models such as graphs, tables and schematics and draw inferences from them;
6.4 use graphical, symbolic, and numerical methods to analyze, organize, and interpret data;
6.5 estimate and consider answers to mathematical problems in order to determine reasonableness; and
6.6 represent mathematical information numerically, symbolically, and visually, using graphs and charts.

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

Degree graduates will demonstrate the ability to:

7.1 generate an empirically evidenced and logical argument;
7.2 distinguish a scientific argument from a non-scientific argument;
7.3 reason by deduction, induction and analogy;
7.4 distinguish between causal and correlational relationships; and
7.5 recognize methods of inquiry that lead to scientific knowledge.

General Education Electives

Following is a list of approved general education electives in the areas of humanities/fine arts, mathematics, personal wellness, science, and social/behavioral sciences. Prior to enrolling in the courses on this list, students should check the course descriptions to ensure that they meet any prerequisites or co-requisites. To avoid transfer problems, students should carefully select courses to fulfill elective requirements with the assistance of their advisors and upon an investigation of the transfer requirements of the institution to which transfer is contemplated.

Humanities/Fine Arts

ART 100	Art Appreciation
ART 101, 102	History and Appreciation of Art I, II
ART 106	History of Modern Art
ASL 125	History of the Deaf Community
ASL 220	Comparative Linguistics
ASL 225	Literature of the US Deaf Community
CST 151	Film Appreciation I
HUM 200	Survey of the Humanities
MUS 121	Music Appreciation I
MUS 195	World Music Styles
PHI 101	Introduction to Philosophy
PHI 220	Ethics
PHI 225	Selected Problems in Applied Ethics
REL 231, 232	Religions of the World I, II
REL 233	Introduction to Islam
REL 240	Religions in America
REL 255	Problems and Issues in Religion
SPA 233	Survey of Spanish Civilization and Literature

Humanities courses that require ENG 112 as a prerequisite:

ENG 241[1,2]	American Literature I
ENG 242[1,2]	American Literature II
ENG 243[1,2]	British Literature I
ENG 244[1,2]	British Literature II
ENG 251[1,2]	World Literature I
ENG 252[1,2]	World Literature II
ENG 253[1,2]	African American Literature I
ENG 254[1,2]	African American Literature II
ENG 273[1,2]	Women in Literature I
ENG 274[1,2]	Women in Literature II
ENG 295[1,2]	Topics in English: The Bible as Literature I
ENG 295[1,2]	Topics in English: The Bible as Literature II

[1] These courses have been designated ***writing-intensive*** (offer enhanced instruction in writing) by the English faculty.
[2] Students needing to take two literature courses are not required to take both Part I and Part II of the same literature course.

Additional **Humanities/Fine Arts** courses may be approved by the dean, School of Arts, Humanities, and Social Sciences.

PERSONAL WELLNESS

DIT 121	Nutrition I
EMS 111	Emergency Medical Technician Basic
EMS 112	Emergency Medical Technician I
EMS 151	Introduction to Advanced Life Support
HLT 100	First Aid & Cardiopulmonary Resuscitation
HLT 105	Cardiopulmonary Resuscitation
HLT 106	First Aid and Safety
HLT 116	Introduction to Personal Wellness Concepts
HLT 121	Introduction to Drug Use and Abuse
HLT 135	Child Health and Nutrition
HLT 200	Human Sexuality
HLT 215	Personal Stress and Stress Management
HLT 230	Principles of Nutrition & Human Develoment
HLT 247	Health and Safety in Industry Settings
NUR 111	Nursing I (for Nursing AAS students only)
PED 103, 104	Aerobic Fitness I, II
PED 109	Yoga
PED 111, 112	Weight Training I, II
PED 123	Tennis I
PED 133	Golf I
PED 137, 138	Martial Arts I, II
PED 141	Swimming I
PED 144	Skin and Scuba Diving
PED 150	Soccer I
PED 152	Basketball
PED 189	Saltwater Fishing
PED 195	Fly Fishing
RTH 135	Diagnostic and Therapeutic Procedures (for Respiratory Therapy AAS students only)

Additional **Personal Wellness** courses may be approved by the dean, School of Nursing and Allied Health.

Mathematics

MTH 120[1]	Introduction to Mathematics
MTH 151[1,2,3]	Math for Liberal Arts I
MTH 152[1,2,3]	Math for Liberal Arts II
MTH 146[1]	Introduction to Elementary Statistics
MTH 163[4]	Precalculus I
MTH 166[4]	Precalculus with Trigonometry
MTH 170	Foundations in Contemporary Mathematics
MTH 173, 174	Calculus with Analytic Geometry I-II
MTH 240	Statistics
MTH 270	Applied Calculus

[1] This course typically does not transfer to a four-year college.
[2] Enrollment in this course must be approved by a faculty advisor.
[3] This course does not count for any of the college's AA or AS (transfer) degrees.
[4] Students will not receive credit for both MTH 163 and MTH 166.

Additional **Mathematics** courses may be approved by the dean, School of Mathematics and Science.

Science

BIO 101[1]	General Biology I, II
BIO 102	General Biology II
BIO 107	Biology of the Environment
BIO 205	General Microbiology
BIO 206	Cell Biology
BIO 231, 232	Human Anatomy and Physiology I, II
BIO 270	General Ecology
CHM 111, 112	College Chemistry I, II
CHM 241/245	Organic Chemistry I, II/
CHM 242/246	Organic Chemistry Laboratory I, II
GOL 105	Physical Geology
GOL 106	Historical Geology
PHY 201, 202	General College Physics I, II
PHY 241, 242	University Physics I, II

The following are additional approved laboratory sciences for <u>non-Science AS</u> majors:

BIO 106[1]	Life Science
CHM 101, 102	General Chemistry I, II
NAS 101[2]	Natural Sciences I (Paraprofessional AAS only)
NAS 105[2]	Natural Science Topics for Modern Society
NAS 150[2]	(Dental Laboratory Technology AAS only)
	Human Biology (Practical Nursing Certificate, Health
	Care Technician CSC, Health Records Coding CSC only)
NAS 161[2], 162[2]	Health Science I, II (Emergency Medical Services AAS, Emergency Medical Services EMT – Basic CSC, Fire Science AAS and Certificate, Nursing AAS, EMT – Basic CSC, Fire Science AAS and Certificate, Nursing AAS, and Respiratory Therapy AAS only)

[1] Students will not receive credit for both BIO 101 or BIO 102 and BIO 106.
[2] This course typically does not transfer to a four-year college.

Additional **Science** courses may be approved by the dean, School of Mathematics and Science.

Social/Behavioral Sciences

ECO 120[2]	Survey of Economics
ECO 201, 202	Principles of Economics I, II
GEO 200	Physical Geography
GEO 210	Introduction to Cultural Geography
GEO 220	World Regional Geography
HIS 101, 102	Western Civilization I, II
HIS 111, 112	History of World Civilization I, II
HIS 121, 122	United States History I, II
HIS 141, 142	African-American History I, II
HIS 203	History of African Civilization
HIS 269	Civil War and Reconstruction
HIS 276	United States History Since World War II
PLS 135	American National Politics
PLS 211, 212	United States Government I, II
PSY 120[2]	Human Relations
PSY 165	Psychology of Human Sexuality
PSY 201, 202	Introduction to Psychology I, II
PSY 205	Personal Conflict and Crisis Management
PSY 215	Abnormal Psychology
PSY 235	Child Psychology
PSY 230	Developmental Psychology
SOC 200	Introduction to Sociology
SOC 210	Intro to Physical & Cultural Anthropology
SOC 215	Sociology of the Family
SOC 268	Social Problems

[2] This course typically does not transfer to a four-year college.

Additional **Social/Behavioral Sciences** courses may be approved by the dean, School of Humanities and Social Sciences.

Business Administration

Associate of Science

Purpose: With the rapid development of business and industry in Virginia, there is a great demand for qualified personnel in business administration to provide leadership for this economic growth. The Associate of Science degree with a major in Business Administration is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree program in business administration.

Admission Requirements: General college curricular admission

Program Notes: The following high school units are strongly recommended: four units of English, three units of college preparatory mathematics, and one unit of laboratory science. This curriculum requires courses in mathematics, natural sciences, social sciences, and health and physical education, in addition to principles of economics and accounting, which are usually required in the first two years of a baccalaureate business administration curriculum. With the assistance of their advisor, students are urged to acquaint themselves with the requirements of the major department in the institution to which transfer is contemplated. Students are advised to complete the AS degree at the community college, choosing courses that satisfy the mathematics, laboratory science and elective requirements of the four-year college as well as the AS degree. If students contemplate transferring to an out-of-state college, they should also make contact with the four-year college and consult that college's catalog before deciding which courses to take.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
HIS ___	United States History or History of Western Civilization	3	0	3
MTH 163[1]	Precalculus I	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
SDV 100	College Success Skills	1	0	1
BUS 100	Introduction to Business	3	0	3
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	16-17	0-2	17
ENG 112	College Composition II	3	0	3
HIS ___	United States History or History Western Civilization	3	0	3
MTH 270[1]	Applied Calculus	3	0	3
___ ___[3]	Approved Elective	3	0	3
IT__ ___[4]	Information Technology Elective	3	0	3
	TOTAL	15	0	15
ACC 211	Principles of Accounting I	3	0	3
ECO 201[5]	Principles of Economics I - Macroeconomics	3	0	3
ENG ___	English or American Literature	3	0	3
___ ___[2]	Approved Laboratory Science	3	3	4
___ ___[3]	Approved Elective	3	0	3
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	15-16	3-5	17
ACC 212	Principles of Accounting II	3	0	3
ECO 202[5]	Principles of Economics II – Microeconomics	3	0	3
ENG ___	English or American Literature	3	0	3
___ ___[2]	Approved Laboratory Science	3	3	4
	TOTAL	12	3	13

Total Minimum Credits for AS Degree in Business Administration 62

[1]Students transferring to Virginia Commonwealth University are required to complete a semester of pre-calculus and a semester of calculus. If transferring to another university, students should see the program head for substitution of an appropriate math course.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students planning to transfer must take two semesters of laboratory sciences.
[3]Students planning to transfer to Virginia Commonwealth University must take CST 100 (an approved elective). A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[4]Approved Information Technology electives include ITE 140 and ITE 150.
[5]In addition to the economics requirements, students are advised to complete a full year of social science or humanities (see footnote 2 above) if required by the four-year college or university to which they plan to transfer. University of Richmond requires MTH 240. If majoring in accounting at VCU, students should take PLS 211-212. If majoring in Information Systems at VCU, students should take an additional math course at JSRCC: MTH 286, Discrete Mathematics, or MTH 287, Mathematical Structures. Students should take either after MTH 270.

Engineering

Associate of Science

Purpose: The demand for technically trained people is increasing rapidly in Virginia as well as throughout the world. The engineer is a most important member of the technical team, which includes the scientist, technician, and skilled craftsman. Opportunities are unlimited for men and women in the field of engineering. Science is so diversified now that one may enter almost any specialization and find employment. The preparation for the engineering profession is based on a vigorous program especially in mathematics and science.

The associate of science degree major in Engineering is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree program in one of the following engineering fields: aerospace, agriculture, architecture, biomedical, chemical, civil, computer, electrical, environmental, industrial, materials, mechanical, mining, nuclear, or ocean.

Admission Requirements: General college curricular admission

Program Notes: Applicants shall have (a) completed placement testing and (b) met with their advisor to establish a planned course of study prior to being allowed to register for courses.

Satisfactory completion of the following high school units or their equivalent, at a minimum, is strongly recommended: four units of English, one unit of laboratory science (preferably physical science), one unit of social studies, and four units of mathematics (two units of algebra, one unit of plane geometry, one unit of advanced mathematics or trigonometry and solid geometry).

This program includes the courses usually required in the first two years of a baccalaureate engineering curriculum. The minimum number of credits required

for graduation from the J. Sargeant Reynolds Community College Engineering AS degree program is 68. Students should consult with their engineering advisor at the earliest possible date to acquaint themselves with the requirements of the engineering program at the college or university to which transfer is planned.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by passing the computer competency exam, administered in the testing centers on each campus, or by completing either ITE 115, Introduction to Computer Applications and Concepts, or CSC 155, Computer Concepts and Applications, or equivalent. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
CHM 111[1]	College Chemistry I	3	3	4
MTH 173	Calculus with Analytic Geometry I	5	0	5
EGR 124	Introduction to Engineering and Engineering Methods	3	0	3
SDV 100	College Success Skills	1	0	1
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	15-16	3-5	17
ENG 112	College Composition II	3	0	3
EGR 123[3]	Introduction to Engineering Design or	1	2	2
EGR 110[3]	Engineering Graphics	2	2	3
EGR 140	Engineering Mechanics – Statics or	3	0	3
EGR ___[4]	Engineering Elective			
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
MTH 174	Calculus with Analytic Geometry II	5	0	5
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	15-17	2-4	17-18
PHY 241	University Physics I	3	3	4
EGR ___[4]	Engineering Elective	3	0-3	3-4
MTH 277	Vector Calculus	4	0	4
EGR 206	Engineering Economy or	3	0	3
EGR ___[4]	Engineering Elective			
___ ___[2]	Social/Behavioral Science Elective	3	0	3
	TOTAL	16	3-6	17-18
EGR ___[4]	Engineering Elective	3	0-3	3-4
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
___ ___[2]	Social/Behavioral Science Elective	3	0	3
PHY 242	University Physics II	3	3	4
MTH 279	Ordinary Differential Equations	4	0	4
	TOTAL	16	3-6	17-18

Total Minimum Credits for AS Degree in Engineering 68

[1]CHM 112 may be required by some four–year institutions for their engineering baccalaureate degree programs. Students should verify the chemistry requirements of the institutions to which they plan to transfer.

[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

[3]EGR 123 is required for VCU, and EGR 110 is required for Virginia Tech. Students should consult their engineering program advisor for assistance with selecting the appropriate course for other institutions.

[4]Engineering electives are EGR 110, EGR 123, EGR 245, EGR 246, EGR 251, EGR 255, EGR 261, and CSC 210.

Notes: 1) Virginia Tech requires a two-credit linear algebra course. That requirement can be satisfied by completing MTH 285 at JSRCC. 2) Students should consult with their Engineering advisor at the earliest possible date to acquaint themselves with the requirements of the Engineering program at the college or university to which transfer is planned.

General Education

Certificate

Purpose: The General Education Certificate is designed to serve as an intermediate step toward the associate of arts or associate of science degree for students who plan to transfer to a four-year college or university. The curriculum provides students with a foundation in the general education core competency areas of Communication (oral and written), Critical Thinking, Information Literacy, Cultural and Social Understanding, Personal Development, Quantitative Reasoning, and Scientific Reasoning.

Admissions Requirements: General college curricular admission

Program Notes: This certificate program is approximately equivalent to the first year of study in any one of JSRCC's Associate of Arts or Associate of Science transfer degree programs. The associate degree is the gateway for transfer to a four-year college or university through one of many articulation and guaranteed admission agreements currently available to JSRCC students. Students enrolling in the General Education Certificate as their only program may not be eligible for federal or state financial aid.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115 or CSC 155. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115 or CSC 155. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	or			
CSC 155	Computer Concepts and Applications			
___ ___[1]	Approved Transfer Mathematics	3	0	3
HIS ___[2]	United States History, or African-American History, or Western Civilization,	3	0	3
	or			
	World Civilization, or Any 200-level History Course			
___ ___[2]	Laboratory Science Elective	3	3	4
	TOTAL	16	3	17
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
CST 110	Introduction to Speech Communication	3	0	3
	or			

ENG 112	College Composition I			
HIS ___[2]	United States History, or African-American History, or Western Civilization, or World Civilization or Any 200-level History Course	3	0	3
___ ___[2]	Social/Behavioral Science Elective	3	0	3
___ ___[2]	Personal Wellness Elective	0-2	0-4	2
___ ___[2]	Laboratory Science Elective	3	3	4
	TOTAL	15-17	3-7	18

Total Minimum Credits for Certificate Degree in General Education 35

[1]Students should consult their advisor and transfer institution about which math course to take. Mathematics courses that will fulfill this requirement include MTH 163, MTH 166, MTH 170, MTH 151, and MTH 173.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Liberal Arts and Social Sciences Degree Options

Liberal Arts
Associate of Arts

Specialization:
Teacher Preparation

Social Sciences
Associate of Science

Specializations:
American Sign Language/Deaf Studies
Teacher Preparation

Purpose: The Liberal Arts (AA) and Social Sciences (AS) degrees are two-year programs designed for those who plan to transfer to a four-year college or university to complete a bachelor's degree in the humanities or social sciences. The curricula consist of courses in general education (including a foreign language, natural science, and social sciences) typically required in the first two years of a baccalaureate curriculum in the humanities or social sciences.

Students from the AA degree program transfer into a wide variety of majors at senior institutions including, but not limited to, the following:

anthropology	humanities
art	mass communications
library science	journalism
English/literature	philosophy
foreign languages	pre-law

Students from the AS degree program transfer into a wide variety of majors at senior institutions including, but not limited to, the following:

anthropology	pre-law
history	social work
economics	government/political science
mass communications	sociology
psychology	speech-language pathology
education/Deaf studies	ASL: interpretation/linguistics

The programs are designed to provide transfer paths that will match the requirements of senior institutions (four-year colleges and universities); however, senior institutions differ in their requirements, so students are strongly urged to work with their assigned advisor and to acquaint themselves with the requirements of the major department in the college or university to which they plan to transfer.
The Associate of Arts degree in Liberal Arts is intended for students seeking the Bachelor of Arts (B.A.) degree, generally awarded in such fields as philosophy, foreign languages, literature (including English), archaeology, art history, and religious studies. This program includes two years of coursework in the same foreign language. The Associate of Science degree in Social Sciences is intended for students seeking the Bachelor of Science (B.S.) degree, generally awarded in such fields as anthropology, economics, political science, psychology, and sociology. This program includes one year of coursework in the same foreign language. Students should understand that the line between the humanities and social sciences is not always clear and that some colleges and universities award B.A. degrees in what are usually considered the social sciences. Each student admitted to the program is assigned an academic advisor to help plan the appropriate course of studies to transfer to the student's choice of a four-year college or university. Students who complete the program generally transfer as juniors.

The ASL/Deaf Studies specialization is designed for students who plan to transfer to a four-year college or university in a major that requires a background in American Sign Language and Deaf persons as a cultural group. These expanding fields include: speech-language pathology, deaf education, ASL instruction, interpretation, interpreter education, linguistics and Deaf studies (e.g., history, literature, research, etc.).

The Teacher Preparation specializations are designed for students who plan to transfer to a four-year college or university in a major that requires a background in the liberal arts or social sciences, and who plan to teach at the elementary, middle, or secondary school level. The Teacher Preparation specializations enable the student to participate in two field experiences in area schools.

Note to prospective teachers: Students who wish to be licensed to teach in Virginia should earn a baccalaureate degree in a liberal arts or science field. Students should consult with their advisor regarding elective choices that match their desired teaching endorsement area(s). While enrolled at the community college, students should prepare for and successfully complete Praxis I, the initial teacher licensure examination.

Admission Requirements: General college curricular admission

Program Notes: The following high school units are strongly recommended: three units of college preparatory mathematics and two years of a foreign language.

Computer Competency Requirement: Students in the Liberal Arts and Social Sciences degree programs will meet the college's computer competency requirement by successfully completing ITE 115 or CSC 155. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115 or CSC 155. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM
Liberal Arts — Associate of Arts

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SDV 10	College Success Skills	1	0	1
HIS __	United States History, or African-American History, or Western Civilization, or World Civilization or Any 200-level History Course	3	0	3
MTH 163[1]	Precalculus I	3	0	3
___ ___[2]	Personal Wellness Elective	0-1	0-2	1

___ ___[3]	Foreign Language	4	0	4
	TOTAL	14-15	0-2	15
ENG 112	College Composition II	3	0	3
HIS ___	United States History, or African-American History, or Western Civilization, or World Civilization or Any 200-level History Course	3	0	3
MTH ___[1]	Mathematics 240 or 270	3	0	3
___ ___[3]	Foreign Language	4	0	4
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
ITE 115[4]	Introduction to Computer Applications and Concepts	3	0	3
	or			
CSC 155[4]	Computer Concepts and Applications			
	TOTAL	16-17	0-2	17
ENG ___[5]	Any 200-Level Literature Course	3	0	3
___ ___[2,6]	Social/BehavioralScience Elective	3	0	3
___ ___[3]	Foreign Language	3	0	3
___ ___[7]	Approved Elective	3	0	3
___ ___[8]	Approved Laboratory Science Elective	3	3	4
	TOTAL	15	3	16
ENG __[5]	Any 200-Level Literature Course	3	0	3
___ ____[2,6]	Social/Behavioral Science Elective	3	0	3
___ ____[3]	Foreign Language	3	0	3
___ ___[8]	Laboratory Science Elective	3	3	4
	TOTAL	12	3	13

Total Minimum Credits for AA Degree in Liberal Arts 61

[1]Students should consult their advisor and transfer institution about which math courses to take. MTH 163 followed by MTH 240 or MTH 270 are more universally transferable. Students planning to transfer to VCU make take MTH 170. MTH 151 and MTH 152 do not transfer to most institutions, and they do not fulfill the requirements of this curriculum track. MTH 120 does not fulfill the requirements of this curriculum path.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3]Students must take the same foreign language through the 202 level. Students who have satisfactorily completed two years of a foreign language in high school may petition for advanced placement to the intermediate level of this foreign language. Students who place at the intermediate level of foreign language study will then need to complete eight (8) additional credit hours of Approved Electives. Proficient students may receive course credit for foreign language through the CLEP exam. Students should consult their transfer institution about language requirements. Some B.S. programs require intermediate level foreign language. Many colleges and universities accept American Sign Language as a foreign language credit. Students are advised to clarify transfer opportunities with their transfer institution.
[4]Students should consult their advisor and transfer institution about the computer literacy course to take. Students who have good backgrounds in computers may petition for credit by examination.
[5]For the AA degree, students may take any 200-level LITERATURE course. ENG 215 and 217 do NOT satisfy the requirement. For transfer purposes, students should consult their advisor and transfer institution about their literature selections. Degree requirements may be fulfilled by students taking sequential or non-sequential courses in the same or different subject area.
[6]Degree requirements may be fulfilled by students taking sequential or non-sequential courses in the same or different subject area. Students are advised to check the requirements of their transfer institution.
[7]A list of approved courses is available in the Arts, Humanities, and Social Science office.
[8]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. NAS and 01-level sciences do not satisfy this requirement. Students are advised to check the requirements of their transfer institution. A frequent transfer option for Liberal Arts students is BIO 106 or BIO 107 followed by GOL 105.

CURRICULUM
Liberal Arts — Associate of Arts
Teacher Preparation Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SDV 107	Career Education (Teaching)	2	0	2
HIS ___	United States History, or African-American History, or Western Civilization, or World Civilization	3	0	3
MTH 163[1]	Precalculus I	3	0	3
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
___ ___[3]	Foreign Language	4	0	4
	TOTAL	15-16	0-2	16
ENG 112	College Composition II	3	0	3
HIS ___	United States History, or African-American History, or Western Civilization, or World Civilization	3	0	3
MTH ___[1]	Math 240 or 270	3	0	3
___ ___[3]	Foreign Language	4	0	4
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
ITE 115[4]	Introduction to Computer Applications and Concepts	3	0	3
	or			
CSC 155[4]	Computer Concepts and Applications			
	TOTAL	16-17	0-2	17
ENG ___[5]	Any 200-Level Literature Course	3	0	3
GEO 210	People and the Land: Introduction to Cultural Geography	3	0	3
___ ___[3]	Foreign Language	3	0	3
EDU 200	Introduction to Teaching as a Profession	2	2	3
___ ___[6]	Laboratory Science Elective	3	3	4
	TOTAL	14	5	16
CST 110	Introduction to Speech Communication	3	0	3
ECO 201	Principles of Economics I-Macroeconomics	3	0	3
	or			
ECO 202	Principles of Economics II-Microeconomics			
___ ___[3]	Foreign Language	3	0	3
___ ___[6]	Approved Laboratory Science Elective	3	3	4
	TOTAL	12	3	13

Total Minimum Credits for AA Degree in Liberal Arts, Teacher Preparation Specialization 62

[1]Students should consult their advisor and transfer institution about which math course to take. MTH 163 followed by MTH 240 or MTH 270 are more universally transferable. Stu-

dents planning to transfer to VCU may take MTH 170. MTH 151 and MTH 152 do not transfer to most institutions, and they do not fulfill the requirements of this curriculum track. MTH 120 does not fulfill the requirements of this curriculum path.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3]Students must take the same foreign language through the 202 level. Students who have satisfactorily completed two years of a foreign language in high school may petition for advanced placement to the intermediate level of this foreign language. Students who place at the intermediate level of foreign language study will then need to complete eight (8) additional credit hours of Approved Electives. Proficient students may receive course credit for foreign language through the CLEP exam. Students should consult their transfer institution about language requirements. Some B.S. programs require intermediate level foreign language. Many colleges and universities accept American Sign Language as a foreign language credit. Students are advised to clarify transfer opportunities with their transfer institution.
[4]Students should consult their advisor and transfer institution about the computer literacy course to take. Students who have good backgrounds in computers may petition for credit by examination.
[5]Students may take any 200-level LITERATURE course. ENG 215 and 217 do NOT satisfy this requirement. For transfer purposes, students should consult their advisor and transfer institution about their literature selections.
[6]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Future elementary teachers are recommended to take one semester of physical science and one semester of biological science. NAS and 01- level sciences do not satisfy this requirement. Students are advised to check the requirements of their transfer institution. A frequent transfer option for Liberal Arts students is BIO 106 or BIO 107 followed by GOL 105.

CURRICULUM
Social Sciences — Associate of Science

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SDV 100	College Success Skills	1	0	1
HIS ___	United States History, or African-American History, or Western Civilization, or World Civilization or Any 200-level History Course	3	0	3
MTH 163	Precalculus I	3	0	3
___ ___[1]	Personal Wellness Elective	0-1	0-2	1
___ ___[2]	Foreign Language	4	0	4
	TOTAL	14-15	0-2	15
ENG 112	College Composition II	3	0	3
HIS ___	United States History, or African-American History, or Western Civilization, or World Civilization or Any 200-level History Course	3	0	3
MTH ___	Mathematics (240 or 270)	3	0	3
___ ___[2]	Foreign Language	4	0	4
ITE 115[3]	Introduction to Computer Applications and Concepts or	3	0	3
CSC 155[3]	Computer Concepts and Applications			
	TOTAL	16	0	16
ENG ___[4]	Any 200-Level Literature Course	3	0	3
___ ___[1,5]	Social/Behavioral Science Elective	3	0	3
___ ___[6]	Laboratory Science Elective	3	3	4
___ ___[7]	Approved Elective	3	0	3
___ ___[1]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	12-13	3-5	14
ENG __[4]	Any 200-Level Literature Course	3	0	3
___ ___[1,5]	Social/Behavioral Science Elective	3	0	3
___ ___[6]	Laboratory Science Elective	3	3	4
___ ___[7]	Approved Electives	6	0	6
	TOTAL	15	3	16

Total Minimum Credits for AS Degree in Social Sciences 61

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]A list of approved foreign language courses is provided in the Approved Electives section of the catalog under Curriculum Planning and Design. Students must take the same foreign language through the 102 level. Students who have satisfactorily completed two years of a foreign language in high school may petition for advanced placement to the intermediate level of this foreign language. Students who begin at the intermediate level of foreign language study will then need to complete two (2) additional credit hours in Approved Electives. Proficient students may receive course credit for foreign language through the CLEP exam. Students should consult their transfer institution about language requirements. Some B.S. programs require intermediate level foreign language. Many colleges and universities accept American Sign Language as a foreign language credit. Students are advised to clarify transfer opportunities with their transfer institution.
[3]Students should consult their advisor and transfer institution about the computer literacy course to take. Students who have good backgrounds in computers may petition for credit by examination.
[4]Students may take any 200-level LITERATURE course. ENG 215 and 217 do NOT satisfy this requirement. For transfer purposes, students should consult their advisor and transfer institution about their literature selections.
[5]Degree requirements may be fulfilled by students taking sequential or non-sequential courses in the same or different subject area. Students are advised to check the requirements of their transfer institution.
[6]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. NAS and 01-level sciences do not satisfy this requirement. Students are advised to check the requirements of their transfer institution.
[7]A list of approved courses is available in the Arts, Humanities, and Social Science office. For the Social Science AS degree, students are recommended to complete six hours in a course or courses designated as having an international focus. Courses having an international focus are identified on the approved list in the Arts, Humanities, and Social Science office.

CURRICULUM
Social Sciences — Associate of Science

American Sign Language/Deaf Studies Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SDV 100	College Success Skills	1	0	1
HIS ___	United States History, or African-American History, or Western Civilization, or World Civilization, or any 200-level History Course	3	0	3
MTH 163[1]	Precalculus I	3	0	3
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
ASL 261[3]	American Sign Language V	4	0	4
	TOTAL	14-15	0-2	15

ENG 112	College Composition II	3	0	3
HIS ___	United States History, or African-American History, or Western Civilization, or World Civilization or any 200-level History Course	3	0	3
MTH ___[1]	Mathematics (240 or 270)	3	0	3
ASL 262[3]	American Sign Language VI	4	0	4
ITE 115[4]	Introduction to Computer Applications and Concepts or	3	0	3
CSC 155[4]	Computer Concepts and Applications			
	TOTAL	16	0	16
ENG ___[5]	Any 200-Level Literature Course	3	0	3
___ ___[2]	Social/Behavioral Science Elective	3	0	3
___ ___[6]	Laboratory Science Elective	3	3	4
ASL 125	History and Culture of the Deaf Community	3	0	3
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	12-13	3-5	14
ENG ___[5]	Any 200-Level Literature Course	3	0	3
___ ___[2]	Social/Behavioral Science Elective	3	0	3
___ ___[6]	Laboratory Science Elective	3	3	4
ASL 220	Comparative Linguistics: ASL and English	3	0	3
ASL 225	Literature of the U.S. Deaf Community	3	0	3
	TOTAL	15	3	16

Total Minimum Credits for AS Degree in Social Sciences, ASL/Deaf Studies Specialization 61

[1]Students should consult their advisor and transfer institution about which math course to take. MTH 163 followed by MTH 240 or MTH 270 are more universally transferable. Students may select from MTH 163 or 170 as first course choices. MTH 240 or 270 may be taken as second course choices. Before registering for these courses, check to be sure that your transfer institution will accept them.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3]ASL 261 and ASL 262 satisfy the one-year foreign language requirement.
[4]Students should consult their advisor and transfer institution about the computer literacy course to take.
[5]Students may take any 200-level LITERATURE course. ENG 215 and 217 do NOT satisfy this requirement. For transfer purposes, students should consult their advisor and transfer institution about their literature selections.
[6]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. NAS and 01-level sciences do not satisfy this requirement. Students are advised to check the requirements of their transfer institution.

CURRICULUM
Social Sciences — Associate of Science Teacher Preparation Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SDV 107	Career Education (Teaching)	2	0	2
HIS ___[1]	United States History, or African-American History, or Western Civilization, or World Civilization	3	0	3
MTH 163	Precalculus I	3	0	3
___ __[2]	Personal Wellness Elective	0-1	0-2	1
___ __[3]	Foreign Language	4	0	4
	TOTAL	15-16	0-2	16
ENG 112	College Composition II	3	0	3
HIS ___[1]	United States History, or African-American History, or Western Civilization, or World Civilization	3	0	3
MTH ___	Mathematics (240 or 270)	3	0	3
___ ___[3]	Foreign Language	4	0	4
ITE 115[4]	Introduction to Computer Applications and Concepts or	3	0	3
CSC 155[4]	Computer Concepts and Applications			
	TOTAL	16	0	16
ENG ___[5]	Any 200-Level English Literature Course	3	0	3
ECO 201	Principles of Economics I-Macroeconomics or	3	0	3
ECO 202	Principles of Economics II-Microeconomics			
___ ___[6]	Laboratory Science Elective	3	3	4
EDU 200	Introduction to Teaching as a Profession	2	2	3
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	11-12	5-7	14
ENG ___[5]	Any 200-Level English Literature Course	3	0	3
GEO 210	People and the Land: Introduction to Cultural Geography Course	3	0	3
___ ___[6]	Laboratory Science Elective	3	3	4
CST 110	Introduction to Speech Communication	3	0	3
___ ___[7]	Approved Elective	3	0	3
	TOTAL	15	3	16

Total Minimum Credits for AS Degree in Social Sciences, Teacher Preparation Specialization 62

[1]Students are recommended to take one semester of United States, African-American, or Virginia History and one semester of Western or World Civilization.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3]Students must take the same foreign language through the 102 level. Students who have satisfactorily completed two years of a foreign language in high school may petition for

advanced placement to the intermediate level of this foreign language. Students who begin at the intermediate level of foreign language study will then need to complete two (2) additional credit hours in Approved Electives. Proficient students may receive course credit for foreign language through the CLEP exam. Students should consult their transfer institution about language requirements. Some B.S. programs require intermediate level foreign language. Many colleges and universities accept American Sign Language as a foreign language credit. Students are advised to clarify transfer opportunities with their transfer institution.

[4]Students should consult their advisor and transfer institution about the computer literacy course to take. Students who have good backgrounds in computers may petition for credit by examination.

[5]Students may take any 200-level LITERATURE course. ENG 215 and 217 do NOT satisfy this requirement. For transfer purposes, students should consult their advisor and transfer institution about their literature selections.

[6]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Future elementary teachers are recommended to take one semester of physical science and one semester of biological science. NAS and 01-level sciences so not satisfy this requirement. Students are advised to check the requirements of their transfer institution.

[7]Students should choose from one of these areas: Political Science (U.S. Government recommended), Ethics, Art Appreciation, or Music Appreciation.

Science

Associate of Science

Specializations:

Computer Science
Mathematics
Teacher Preparation

Purpose: The associate of science degree with a major in Science is designed for persons who plan to transfer to a four-year college or university in a major that requires a background in the natural or physical sciences and mathematics. With the many advances taking place in all areas of science, the opportunities for persons with expertise in this area are rapidly increasing. This program provides the necessary training for transfer into a broad range of scientific fields ranging from botany to zoology and from chemistry or geology, to physics. In addition, the Science major is designed to meet the requirements for admission to a professional school or upper-division major for career preparation in many of the medical professions including nursing, pharmacy, medicine, and veterinary medicine.

The Computer Science specialization is designed for persons who plan to transfer to a four-year college or university in a major that requires a background in the sciences, mathematics, and computer science. Student familiarity with or expertise in computer science is frequently a requirement for study in the disciplines of biology, chemistry, physics, science education, engineering, manufacturing, and related fields. This program will provide the opportunity to obtain this needed preparation. In this rapidly changing field, students should regularly meet with their advisor to keep up with course and curriculum updates.

The Mathematics specialization is designed for persons who plan to transfer to a four-year college or university in a major that requires a background in the sciences, mathematics, and computer science. The Mathematics specialization includes the courses usually required in the first two years of a baccalaureate degree program in mathematics.

The Teacher Preparation specialization is designed for persons who plan to transfer to a four-year college or university in a major that requires a background in the sciences, and who plan to teach at the elementary, middle, or secondary school level. The Teacher Preparation specialization enables the student to participate in field experiences in area schools.

Admission Requirements: General college curricular admission

Program Notes: The following high school units are strongly recommended for the Science major: four units of English, three units of college preparatory mathematics, one unit of laboratory science, and two units of foreign language.

in the sciences, and who plan to teach at the elementary, middle, or secondary school level. The Teacher Preparation specialization enables the student to participate in field experiences in area schools.

Admission Requirements: General college curricular admission

Program Notes: The following high school units are strongly recommended for the Science major: four units of English, three units of college preparatory mathematics, one unit of laboratory science, and two units of foreign language.

The following high school units are strongly recommended for the Computer Science and Mathematics specializations: four units of English; four units of college preparatory mathematics, including algebra (two units), geometry and trigonometry (or advanced math); two units of laboratory science; and one unit of social studies. Students in the Computer Science and Mathematics specializations are urged to begin their programs of study during the fall semester because many courses are sequential and only offered once a year.

Students are encouraged to seek information from the upper-division college, university or professional school to which transfer is intended as to specific requirements for a particular major or specific admission requirements.

Note to Prospective Teachers: Students who wish to be licensed to teach in Virginia should earn a baccalaureate degree in a liberal arts or science field. Students should consult with their advisor regarding elective choices that match their desired teaching endorsement area(s). While enrolled at the community college, students should prepare for and successfully complete Praxis I, the initial teacher licensure examination. Students preparing to take the Praxis I examination may wish to enroll in J. Sargeant Reynolds Community College courses MTH 50 and ENG 50.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by passing the computer competency exam, administered in the testing centers on each campus, or by completing CSC 155, Computer Concepts and Applications. Students not passing the computer competency exam for CSC 155 may retake the exam only once.

CURRICULUM
Science—Associate of Science

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
___ ___[1]	Approved Laboratory Science I	3	3	4
MTH 166[2]	Precalculus with Trigonometry	5	0	5
	or			
MTH 173	Calculus with Analytic Geometry I			
CSC ___	Computer Science Elective	3-4	0	3-4
	TOTAL	15-16	3	16-17
ENG 112	College Composition II	3	0	3
___ ___[1]	Approved Laboratory Science II	3	3	4
MTH 240[2]	Statistics	3-5	0	3-5
	or			
MTH 270	Applied Calculus			
	or			
MTH 173	Calculus with Analytic Geometry I			
	or			
MTH 174	Calculus with Analytic Geometry II			
___ ___[1]	Social/Behavioral Science Elective	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2

	TOTAL	12-16	3-7	15-17
___ ___[1]	Approved Mathematics, Laboratory Science, or Computer Science Elective	3-5	0-3	3-5
___ ___[1]	Approved Laboratory Science I	3	3	4
HIS 101	History of Western Civilization I	3	0	3
	or			
HIS 121	United States History I			
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
___ ___[3]	Approved Elective	3	0	3
	TOTAL	15-17	3-6	16-18
___ ___[1]	Approved Mathematics or Laboratory Science Elective	3-5	0-3	3-5
___ ___[1]	Approved Laboratory Science II	3	3	4
HIS 102	History of Western Civilization II	3	0	3
	or			
HIS 122	United States History II			
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
___ ___[3]	Approved Elective	3	0	3
	TOTAL	15-17	3-6	16-18

Total Minimum Credits for AS Degree in Science 63

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]MTH 173-174 are recommended for students planning to major in Physics or Chemistry. Students not prepared for MTH 173 may be required to take MTH 166 prior to taking MTH 173.
[3]A list of approved electives for the Science AS Degree is available in the School of Mathematics and Science office.

CURRICULUM
Science AS Computer Science Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
___ ___[1]	Laboratory Science I	3	3	4
MTH 173	Calculus with Analytic Geometry I	5	0	5
MTH 287	Mathematical Structures	3	0	3
	TOTAL	15	3	16
ENG 112	College Composition II	3	0	3
___ ___[2]	Personal Wellness Elective	0-2	0-4	2
___ ___[1]	Laboratory Science II	3	3	4
MTH 174	Calculus with Analytic Geometry II	5	0	5
CSC 201	Computer Science I	4	0	4
	TOTAL	15-17	3-7	18
___ ___[3]	Approved Mathematics, Laboratory Science, or Computer Science Elective	3-5	0-3	3-5
CSC 202	Computer Science II	4	0	4
HIS 101	History of Western Civilization I	3	0	3
	or			
HIS 121	United States History I			
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
	Total	13-15	0-3	13-15
CSC 205	Computer Organization	4	0	4
___ ___[3]	Approved Elective	3	0	3
HIS 102	History of Western Civilization II	3	0	3
	or			
HIS 122	United States History II			
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
___ ___[2]	Social/Behavioral Science Elective	3	0	3
	TOTAL	16	0	16

Total Minimum Credits for AS Degree in Science, Computer Science Specialization 63

[1]Selection of lab science depends upon the transfer institution selected. Students should consult their advisor for appropriate courses. Students transferring to VCU should take CSC 200 as a computer science elective and move the lab science sequence to the 3rd and 4th semesters.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3]Students must see their advisor for appropriate courses.

CURRICULUM
Science AS Mathematics Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
___ ___[1]	Approved Laboratory Science I	3	3	4
MTH 173[2]	Calculus with Analytic Geometry I	5	0	5
CSC ___[3]	Computer Science Elective	3-4	0	3-4
	TOTAL	15-16	3	16-17
ENG 112	College Composition II	3	0	3
___ ___[1]	Approved Laboratory Science II	3	3	4
MTH 174	Calculus with Analytic Geometry II	5	0	5
___ ___[4]	Approved Elective	3-4	0-3	3-4
	TOTAL	14-15	3-6	15-16
MTH 277	Vector Calculus	4	0	4
MTH 240[5]	Statistics	3	0	3
HIS 101	History of Western Civilization I	3	0	3
	or			
HIS 121	United States History I			
___ ___[1]	Social/Behavioral Science Elective	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	16	0	16
___ ___[6]	Approved Mathematics, Laboratory Science, or Computer Science Elective	3-5	0-3	4-5
MTH 287	Mathematical Structures	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
HIS 102	History of Western Civilization II	3	0	3
	or			
HIS 122	United States History II			

___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	12-16	0-7	15-16

Total Minimum Credits for AS Degree in Science, Mathematics Specialization **62**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]Students not prepared for MTH 173 may be required to take MTH 166 prior to taking MTH 173. MTH 166 does not meet the graduation requirements for the Mathematics Specialization.
[3]Students may take CSC 201 or another CSC programming course.
[4] Approved electives include CSC 202, CSC 205, MTH 285, or another course approved by the student's advisor.
[5]MTH 240 transfers as an elective for students majoring in mathematics at Virginia Tech and the University of Virginia. At VCU, MTH 240 transfers for a mathematics major if the student takes an additional upper-level statistics course at VCU; in this case, the student will receive credit for both MTH 240 and the upper-level statistics course.
[6]It is expected that most students intending to major in mathematics will take MTH 279, Ordinary Differential Equations, for this elective. For additional elective options, students should consult the list of approved electives in the General Education section of the catalog under Curriculum Planning and Design.

CURRICULUM
Science AS Teacher Preparation Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SDV 100[1]	College Success Skills	1	0	1
___ ___[2]	Approved Laboratory Science I	3	3	4
MTH 166	Precalculus with Trigonometry	5	0	5
	or			
MTH 173	Calculus with Analytic Geometry I			
CSC ___	Computer Science Elective	3-4	0	3-4
	TOTAL	15-16	3	16-17
ENG 112	College Composition II	3	0	3
___ ___[2]	Approved Laboratory Science II	3	3	4
MTH 240[3]	Statistics	3-5	0	3-5
	or			
MTH 270	Applied Calculus			
	or			
MTH 173	Calculus with Analytic Geometry I			
	or			
MTH 174	Calculus with Analytic Geometry II			
GEO 210	People and the Land: Intro to Cultural Geography	3	0	3
___ ___[2]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	12-16	3-7	15-17
___ ___[2]	Approved Mathematics, Laboratory Science, or Computer Science Elective	3-5	0-3	3-5
___ ___[2]	Approved Laboratory Science I	3	3	4
___ ___[2]	Approved Mathematics, Laboratory	3-5	0-3	3-5
	Science, or Computer Science Elective			
___ ___[2]	Approved Laboratory Science I	3	3	4
HIS 101	History of Western Civilization I	3	0	3
	or			
HIS 121	United States History I			
CST 110	Introduction to Speech Communication	3	0	3
EDU 200	Introduction to Teaching as a Profession	2	2	3
	TOTAL	14-16	5-8	16-18
___ ___[2]	Approved Mathematics or Laboratory Science Elective	3-5	0-3	3-5
___ ___[2]	Approved Laboratory Science II	3	3	4
HIS 102	History of Western Civilization II	3	0	3
	or			
HIS 122	United States History II			
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
ECO 201	Principles of Economics I-Macroeconomics	3	0	3
	or			
ECO 202	Principles of Economics II-Microeconomics			
	TOTAL	15-17	3-6	16-18

Total Minimum Credits for AS Degree in Science, Teacher Preparation Specialization **63**

[1]Students are encouraged to substitute SDV 107 Career Education (Teaching), which includes a field experience in an area school.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3]MTH 173-174 are recommended for students planning to major in Physics or Chemistry. Students not prepared for MTH 173 may be required to take MTH 166 prior to taking MTH 173.

Accounting

Associate of Applied Science

Purpose: The rapid expansion of business and industry in Virginia has created a large, steady demand for qualified personnel to assist in the preparation and interpretation of accounting and financial information. The AAS degree in Accounting is designed for persons who are seeking their first full-time employment in the accounting field immediately upon completion of the curriculum. In addition, the program is designed for persons presently employed in accounting who desire to increase their knowledge and update their skills.

Occupational Objectives: The AAS degree in Accounting prepares graduates to function in responsible paraprofessional positions in the current employment market. Occupational objectives include: Accounting Assistant, Senior Accounting Clerk, Bookkeeper, Junior Accountant, Tax Specialist, Fiscal Technician, and Internal Auditor.

Admission Requirements: General college curricular admission

Program Notes: Students must test into MTH 120 or a higher recommendation on the mathematics placement test. Students must also successfully complete the English placement test for ENG 111 and receive a satisfactory score on their reading test and may be recommended to take ENG 107. Students with deficiencies in reading, writing, or mathematics will require developmental studies. Students will be unable to take accounting coursework until their deficiencies are remedied.

The purpose of the Associate of Applied Science (AAS) degree curriculum is to prepare students for immediate employment upon graduation. Transfer opportunities for AAS degrees, if existing, are usually very specific in nature. Students may, however, substitute some courses in the AAS degree curriculum with courses that generally transfer to senior institutions. Students interested in transferring to a four-year college or university to major in Accounting upon completion of a degree from JSRCC should enroll in the Business Administration AS transfer program. Students considering transfer should consult their faculty advisor at the earliest possible date for further guidance and are advised to get assurances in writing in advance from the institution to which they wish to transfer.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by successfully passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ACC 211	Principles of Accounting I	3	0	3
BUS 100	Introduction to Business	3	0	3
ENG 111	College Composition I	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
MTH 120[1]	Introduction to Mathematics	3	0	3
SDV 100	College Success Skills	1	0	1
	TOTAL	16	0	16
ACC 124	Payroll Accounting	3	0	3
ACC 212	Principles of Accounting II	3	0	3
ACC 215	Computerized Accounting	3	0	3
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
ECO 201	Principles of Economics I – Macroeconomics	3	0	3
ENG 112	College Composition II	3	0	3
	TOTAL	18	0	18
ACC 219	Government and Non-Profit Accounting	3	0	3
ACC 221	Intermediate Accounting I	3	0	3
ACC 231	Cost Accounting I	3	0	3
BUS 240	Introduction to Business Law	3	0	3
ECO 202	Principles of Economics II – Microeconomics	3	0	3
ITE 140	Spreadsheet Software	3	0	3
	TOTAL	18	0	18
ACC 222	Intermediate Accounting II	3	0	3
ACC 241	Auditing I	3	0	3
ACC 261	Principles of Federal Taxation I	3	0	3
BUS 220	Introduction to Business Statistics	3	0	3
___ ___[2]	Personal Wellness Elective	0-2	0-4	2
ITE 150	Desktop Database Software	3	0	3
	TOTAL	15-17	0-4	17

Total Minimum Credits for AAS Degree in Accounting 69

[1]Students may substitute MTH 163 as a transfer option.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Accounting

Certificate

Purpose: The rapid expansion of business and industry in Virginia has created a large, steady demand for qualified personnel to assist in the preparation and interpretation of accounting and financial information. The certificate in Accounting is designed for persons who are seeking their first full-time employment in the accounting field immediately upon completion of the curriculum. In addition, the program is designed for persons presently employed in accounting who desire to increase their knowledge and update their skills.

Occupational Objectives: The certificate in Accounting prepares graduates for employment in any of the following occupations: Accounts Receivable Clerk, Accounts Payable Clerk, Payroll Clerk, Inventory Clerk, and other clerical positions in accounting.

Admission Requirements: General college curricular admission

Program Notes: Students must test into MTH 120 or a higher recommendation on the mathematics placement test. Students must also successfully complete the English placement test for ENG 111 and receive a satisfactory score on their reading test and may be recommended to take ENG 107. Students with deficiencies in reading, writing, or mathematics will require developmental studies. Students will be unable to take accounting course work until their deficiencies are remedied.

Students should consult with their faculty advisor in choosing electives or course substitutions. All program electives and course substitutions must be approved in writing by the Accounting program head.

Students in the Accounting AAS and Certificate programs must attain the grade of "C" or higher in each semester of Principles of Accounting I and II before enrolling in any other accounting courses in the curriculum.

The Accounting Certificate program may transfer at the student's option directly into the Accounting AAS degree program.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ACC 211[1]	Principles of Accounting I	3	0	3
ACC 212[1]	Principles of Accounting II	3	0	3
ENG 111	College Composition I	3	0	3
SDV 100	College Success Skills	1	0	1
	TOTAL	10	0	10
ACC 124	Payroll Accounting	3	0	3
ACC 215	Computerized Accounting	3	0	3
ACC 221	Intermediate Accounting I	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	TOTAL	12	0	12
ACC 222	Intermediate Accounting II	3	0	3
ACC 261	Principles of Federal Taxation I	3	0	3
ECO 201	Principles of Economics I – Macroeconomics	3	0	3
ITE 140	Spreadsheet Software	3	0	3
	TOTAL	12	0	12

Total Minimum Credits for Certificate in Accounting 34

[1]The Accounting Certificate can be completed in three semesters by taking the courses in a summer, fall, and spring semester sequence. In order to complete the program within the three semesters, the ACC 211-212 course sequence must be taken on an accelerated basis during the summer session.

Administration of Justice

Associate of Applied Science

Purpose: The Administration of Justice program is for students anticipating a career in the justice system as well as for persons already employed in the justice system who want to enhance their professional standing and update their skills.

Occupational Objectives: The Administration of Justice program is designed for students who are planning careers in law enforcement, corrections (juvenile and adult), or employment in related agencies.

Admission Requirements: General college curricular admission

Program Notes: All new students should take the reading, writing and mathematics placement tests immediately after applying. The following high school units are strongly recommended for the Administration of Justice program: four units of English, three units of college preparatory mathematics, one unit of laboratory science, and two units of foreign language. There are no physical requirements such as height, weight, eyesight, and physical dexterity; however, the student should understand that there may be such requirements for employment in criminal justice agencies. A grade of "C" or better is required for all courses within the Administration of Justice curriculum.

The purpose of the Associate of Applied Science (AAS) degree curriculum is to prepare students for immediate employment upon graduation. Four-year college and university transfer opportunities for AAS degrees, if existing, are usually very specific in nature. JSRCC has formal transfer articulation agreements with four-year institutions that enable graduates who qualify to transfer courses completed in the AAS degree. These transfer articulation agreements are subject to change or expiration.

In addition, students may substitute some courses in the AAS degree curriculum with courses that typically transfer to senior institutions. Students interested in transferring in general or transferring under a formal transfer articulation agreement should consult their faculty advisor upon program entry for further guidance.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully passing the college's computer competency exam, administered in the testing centers on each campus, or by completing ITE 115, Introduction to Computer Applications and Concepts, or equivalent. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
ADJ 100	Survey of Criminal Justice	3	0	3
ADJ 130	Introduction to Criminal Law	3	0	3
ADJ 212	Criminal Law, Evidence and Procedures	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	13-15	0-4	15
ENG 112	College Composition II	3	0	3
ADJ 105	The Juvenile Justice System	3	0	3
ADJ 201	Criminology	3	0	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
MTH 170[2]	Foundations in Contemporary Mathematics	3	0	3
___ ___[1]	Approved Mathematics or Science Elective	3	0	3
	TOTAL	18	0	18
ADJ ___[3]	Approved ADJ Elective	3	0	3
ADJ ___[3]	Approved ADJ Elective	3	0	3
PHI 220	Ethics	3	0	3
ENG 210	Advanced Composition	3	0	3
ADJ 290[4]	Coordinated Internship	0	15	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
	TOTAL	15	15	18
ADJ 235	Research in Criminal Justice	3	0	3
ITE 150	Desktop Database Software	3	0	3
CST 100	Principles of Public Speaking	3	0	3
___ ___[3]	Approved Elective	3	0	3

___ ___[3]	Approved Elective	3	0	3
	TOTAL	15	0	15

Total Minimum Credits for AAS Degree in Administration of Justice 66

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]A science course may be taken in place of MTH 170. See list of approved science electives for non-science majors in the General Education section of the catalog under Curriculum Planning and Design.
[3]Elective courses must be approved in advance by student's advisor or Administration of Justice program head.
[4]Students not employed in a criminal justice agency will be required to complete an internship with an approved criminal justice agency. Students currently employed in a criminal justice agency may request advanced standing credit for the internship.
[5]Prerequisites for ADJ 235 include ENG 112, ENG 210, ADJ 100, ADJ 105, and ADJ 107 or 201.
[6]Prerequisites: ITE 115 or passing score on the computer competency exam.

Administrative Support Technology

Certificate

Purpose: The Administrative Support Technology Certificate is a one-year program designed to prepare students for employment in the automated office.

Occupational Objectives: Administrative Assistant, Office Services Specialist, and key support positions

Admission Requirements: General college curricular admission

Program Notes: Credits earned in this program may be applied to the associate degree in Information Systems Technology, Microcomputer Applications specialization. Students will be required to repeat ENG, ITE, and AST courses in which grades lower than "C" are received.

Computer Competency Requirement: Students in this program will complete the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by successfully passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
AST 101[1]	Keyboarding I	0-3	0	0-3
AST 107	Editing/Proofreading Skills	3	0	3
AST 137	Records Management	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	TOTAL	13-16	0	13-16
ACC 115	Applied Accounting	3	0	3
CST 100	Principles of Public Speaking	3	0	3
AST 205	Business Communications	3	0	3
AST 243	Office Administration I	3	0	3
	TOTAL	12	0	12
ITE 215	Advanced Computer Applications and Integration	3	0	3
PSY [3]	Psychology Elective	3	0	3
BUS 240	Introduction to Business Law	3	0	3
	TOTAL	9-12	0-15	12

Total Minimum Credits for Certificate in Administrative Support Technology 37

[1]Students with previous keyboarding skills may petition the department to test out of this course.
[2]Students should consult an advisor for assistance with the choice of the coordinated internship or approved elective.
[3]Students may take any 100-level or higher psychology (PSY) course to satisfy this elective.

American Sign Language-English Interpretation

Associate of Applied Science

Purpose: The degree in American Sign Language (ASL)-English Interpretation is designed to prepare individuals for a career in sign language interpretation.

Occupational Objectives: A majority of full-time ASL-English interpretation positions in the Commonwealth are found in the K-12 public school setting. The minimum requirement to work as an ASL-English interpreter in the K-12 setting in Virginia is a VQAS Level III, an EIPA of 3.5 or higher, or national certification. Those interpreters who attain national certification may also consider freelance and contract interpreting opportunities, including the expanding fields of video relay service (VRS) and video remote interpreting (VRI), which both utilize interactive video technology via the Internet.

Admission Requirements: General college curricular admission

Program Notes: ASL-English Interpretation is a two-year, full-time course of study that enrolls new students annually to begin coursework during the spring semester with programmatic content provided year-round until completion. The program consists of 18 credits in general education requirements and 47 credits in American Sign Language and Interpreter Education (ASL&IE). Candidates for admission to the program must provide evidence of fluency in both English and ASL. Fluency in English is demonstrated by placement into ENG 111. Fluency in ASL is demonstrated by completion of the American Sign Language Career Studies Certificate and successful completion of the following courses with a "C" or higher: ASL 125, ASL 220, and ASL 261. Fluency in ASL may also be demonstrated through a placement interview with the American Sign Language and Interpreter Education program head.

As part of the ASL-English Interpretation curriculum, students are prepared to sit for the National Interpreting Certification (NIC) evaluation. Successful completion of this 3-step process results in national certification as an ASL-English interpreter, which may be maintained through the Registry of Interpreters for the Deaf (RID) via continuing education. As of July 1, 2008, individuals are required to have an associate degree, or equivalent, as determined by the National Council on Interpreting (NCI), in order to sit for the NIC evaluation. On July 1, 2012, the requirement to sit for the NIC evaluation becomes a bachelor's degree. For more information on the NIC, please visit http://www.rid.org.

The student must receive a passing score on either the VQAS, EIPA or NIC written assessment portion or a "C" or higher in INT 130 prior to initiating INT 280, Interpreter Assessment Preparation, offered during spring semester, year 2. It is typical for students to sit for the VQAS or EIPA performance exam during the spring or summer semesters, year 2. Initiation of INT 290, ASL-English Interpretation Internship, during the fall of year 2 is typical. The Virginia Quality Assurance Screening (VQAS) is a state screening, valid for three years by which time the interpreter must be screened again. For more information on the VQAS, please visit http://www.vddhh.org or contact the Virginia Department for the Deaf and Hard of Hearing (VDDHH) at 1-800-552-7917 [V/TTY]. The Educational Interpreter Performance Assessment (EIPA) is administered by Boys' Town. For more information, please visit www.classroominterpreting.org.

Financial Requirements:

Books and Supplies	$400 first semester; $200 for all other semesters
Certification/Testing Fees	Contact RID for NIC fees; contact VDDHH for VQAS fees; contact Boys' Town for EIPA fees.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam administered in the testing centers on each campus, in which they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

Spring, Year 1

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
INT 195[1]	Introduction to ASL-English	1	0	1
INT 105	Interpreting Foundations I (English)	3	0	3
INT 106	Interpreting Foundations II (ASL)	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	TOTAL	14	0	14

Summer, Year 1

ASL 225	Literature of the U.S. Deaf Community	3	0	3
ASL 262	American Sign Language VI	4	0	4
	TOTAL	7	0	7

Fall, Year 1

INT 130[2]	Interpreting: An Introduction to the Profession	3	0	3
INT 107	Translation Skills	3	0	3
INT 133	ASL-to-English Interpretation I	3	0	3
INT 134	English-to-ASL Interpretation I	3	0	3
PSY ___[3]	Psychology Elective: 200-Level	3	0	3
	TOTAL	15	0	15

Spring, Year 2

INT 233	ASL-to-English Interpretation II	3	0	3
INT 234	English-to-ASL Interpretation II	3	0	3
___ ___[3]	Personal Wellness Elective	2	0	2
INT 250	Dialogic Interpretation I	3	0	3
INT 280[1,2]	Interpreter Assessment Preparation	3	0	3
	TOTAL	14	0	14

Fall, Year 2

INT 290[5]	ASL-English Interpreter Internship	0	12	3
___ ___[6]	Social/Behavioral Science Elective	3	0	3
MTH 163[7]	Precalculus	3	0	3
CST 100[8]	Principles of Public Speaking	3	0	3
	TOTAL	9	12	12

Total Minimum Credits for AAS Degree in ASL-English Interpretation 68

[1]Submission of documentation of a passing score on either the VQAS or EIPA written assessment makes the student eligible for a credit-by-able award, which will satisfy the INT 195 requirement. Successful completion of INT 195 is required prior to enrolling in INT 280, Interpreter Assessment Preparation.
[2]Submission of documentation of a passing score on the National Interpreting Certification (NIC) Written Assessment makes the student eligible for a credit-by-able award, which will satisfy the INT 130 requirement. Submission of documentation of a passing score on the NIC Written Assessment or successful completion of INT 130 with a "C" " or higher is required prior to enrolling in INT 280, Interpreter Assessment Preparation.
[3]The 200-level psychology course should be chosen from the list of approved social/behavioral science courses in the General Education section of the catalog under Curriculum Planning and Design.
[4]Students should consult with the ASL&IE program head to select from various INT (Interpreter Education) elective offerings, which vary from semester to semester.
[5]In order to be placed in an internship (INT 290, fall year 2), the student must sit for and be awarded an interpreting credential (e.g., VQAS level, EIPA award or NIC certification) or demonstrate acceptable proficiency on a mock ASL-English interpreter assessment approved by the ASL&IE program head.
[6]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[7]Students who provide documentation from a receiving institution that supports selection of a math course other than MTH 163 to satisfy a bachelor's degree requirement may substitute that course to satisfy the math requirement for this AAS, pending ASL&IE program head approval.
[8]Students who provide documentation from a receiving institution that supports selection of a different course to satisfy the CST requirement may substitute that course pending ASL&IE program head approval.

Architectural and Civil Engineering Technology

Associate of Applied Science

Specializations:

Architectural/Industrial Design
Building Construction Management
Civil Engineering Technology

Purpose: The Architectural and Civil Engineering Technology degree program is designed to develop qualified technicians for the field of engineering. The technician serves as an important link between the engineering professional and the skilled trades person in the design, construction, and operation of engineering projects.

Occupational Objectives: This program will provide graduates with the skills and specialized knowledge for employment as highly-trained architectural drafts persons; managers for the construction industry; technicians for construction projects such as highway, bridge, dam, commercial and residential construction; and other related occupations in a highly active industry. Employment opportunities are numerous from the planning stage through project completion and inspection in the following areas: construction industry in private enterprise, government-related business, consulting, and other engineering-related activities.

Admission Requirements: General college curricular admission

Program Notes: In addition to general college admission, applicants shall (a) have completed placement testing and (b) have met with their advisor to establish a planned course of study prior to being allowed to register for courses.

Satisfactory completion of the following high school units or their equivalent, at a minimum, is strongly recommended: four units of English, one unit of laboratory

science (preferably physical science), one unit of social studies, and two units of mathematics (one unit of algebra and one unit of geometry).

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by passing the computer competency exam, administered in the testing centers on each campus, or by completing ITE 115, Introduction to Computer Applications and Concepts, or CSC 155, Computer Concepts and Applications, or equivalent. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
MTH 115	Technical Mathematics I	3	0	3
ARC 121	Architectural Drafting I	2	3	3
ARC 131	Materials and Methods of Construction I	3	0	3
DRF 231	Computer-Aided Drafting I	2	2	3
___ ___[1]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	14-15	5-7	17
ENG 112	College Composition II	3	0	3
MTH 116	Technical Mathematics II	3	0	3
ARC 122	Architectural Drafting II	2	3	3
ARC 132	Materials and Methods of Construction II	3	0	3
PHY201[2]	General College Physics I	3	3	4
___ ___[1]	Personal Wellness Elective	0-1	0-2	1
	TOTAL	14-15	6-8	17

CURRICULUM

Architectural/Industrial Design Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
BLD 210	Building Structures	3	0	3
	or			
EGR 135	Statics for Engineering Technology			
CIV 171	Surveying I	2	3	3
EGR 216	Computer Methods in Engineering and Technology	2	3	3
	or			
DRF 232	Computer-Aided Drafting II			
ARC 212	Architectural Drafting III	2	3	3
ARC 241	Building Mechanical Systems	3	0	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
	TOTAL	15	8	18
BLD 231	Construction Estimating	3	0	3
ARC 213	Architectural Drafting IV	2	3	3
ARC 242	Building Electrical Systems	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
___ ___[3]	Approved ARC or DRF Technical Elective	2-3	0-3	3
	TOTAL	13-14	3-6	15

Total Minimum Credits for AAS Degree in Architectural and Civil Engineering Technology, Architectural/Industrial Design Specialization **67**

CURRICULUM

Building Construction Management Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
BLD 210	Building Structures	3	0	3
	or			
EGR 135	Statics for Engineering Technology			
CIV 171	Surveying I	2	3	3
EGR 216	Computer Methods in Engineering and Technology	2	2	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
BUS 100	Introduction to Business	3	0	3
	or			
BLD 101	Construction Management I			
ARC 241	Building Mechanical Systems	3	0	3
	TOTAL	16	5	18
BLD 103	Principles of Residential Building Construction Inspection	3	0	3
BLD 231	Construction Estimating	3	0	3
BLD 247	Construction Planning and Scheduling	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
___ ___[3]	Approved ARC or DRF Technical Elective	2-3	0-3	3
	TOTAL	14-15	0-3	15

Total Minimum Credits for AAS Degree in Architectural and Civil Engineering Technology, Building Construction Management Specialization **67**

CURRICULUM

Civil Engineering Technology Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
BLD 210	Building Structures	3	0	3
	or			
EGR 135	Statics for Engineering Technology			
CIV 171	Surveying I	2	3	3
EGR 216	Computer Methods in Engineering and Technology	2	2	3
CIV 160	Transportation Engineering	3	0	3
	or			
CIV ____[3]	Approved CIV Elective			
CIV 241	Applied Hydraulics and Drainage I	3	0	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
	TOTAL	16	5	18
CIV 135	Construction Management and Estimating	3	0	3
	or			

BLD 231	Construction Estimating			
CIV 225	Soil Mechanics	2-3	0-2	3
	and			
CIV 226	Soil Mechanics Laboratory			
	or			
CIV ___[3]	Approved CIV Elective			
CIV 265	Curves and Earthwork	3	0	3
	or			
CIV ___[3]	Approved CIV Elective			
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
CIV 270	Utilizing Surveying Software	2	2	3
	TOTAL	13-14	2-4	15

Total Minimum Credits for AAS Degree in Architectural and Civil Engineering Technology, Civil Engineering Technology Specialization **67**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]Students considering transfer to a four-year college offering a BS degree in Engineering Technology should also consider completing PHY 202.
[3]A list of approved electives is available in the school office.
[4]Approved CIV electives are CIV 172, CIV 270, CIV 295, CIV 242, CIV 245, CIV 260, CIV 297, DRF 232, EGR 136, EGR 206, and GOL 105.

Note: Students seeking more complete job skills preparation should also consider taking ENG 115, Technical Writing.

Automotive Technology

Associate of Applied Science

Purpose: This curriculum is designed to prepare individuals for employment in the automotive repair industry or to serve the continuing education needs of the automotive technician working in the field.

Occupational Objectives: Automotive Dealership Technician, Safety Inspector, Service Manager, Parts Specialist, Service Writer, and Independent Automotive Technician

Admission Requirements: General college curricular admission

Program Notes: Students are strongly encouraged to meet with the program head before registering for the first semester of study. All automotive instructors are ASE certified.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
AUT 111	Automotive Engines I	3	3	4
AUT 241	Automotive Electricity I	2	3	3
AUT 267	Automotive Suspension and Braking Systems	3	3	4
ENG 111	College Composition I	3	0	3
	or			
ENG 137	Communication Processes			
SDV 100	College Success Skills	1	0	1
	TOTAL	12	9	15
AUT 112	Automotive Engines II	2	3	3
AUT 242	Automotive Electricity II	2	3	3
AUT 268	Automotive Alignment	1	3	2
AUT 197	Cooperative Education	0	10	2
AUT 236	Automotive Climate Control	3	3	4
___ ___[1]	Social/Behavioral Science Elective	3	0	3
	TOTAL	13	19	18
AUT 142	Auto Power Trains II	3	3	4
AUT 165	Auto Diagnosis and Tune-Up	1	3	2
AUT 245	Automotive Electronics	3	3	4
AUT 297	Cooperative Education	0	10	2
MTH 103	Applied Technical Mathematics	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	13	19	18

Total Minimum Credits for AAS Degree in Automotive Technology **69**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Automotive Technology

Certificate

Purpose: The curriculum is designed to meet the need for trained automotive mechanics in all areas of the automotive industry. The program will provide students with experience in the maintenance and repair of a wide variety of automobiles, as well as light to medium duty trucks. Program graduates will receive instruction in the basic skills and sufficient hands-on experience to be able to apply that learning to practical everyday shop situations.

Occupational Objectives: Auto Mechanic, State Safety Inspector, Service Advisor, Maintenance Technician, Parts Clerk, and Service Writer

Admission Requirements: General college curricular admission

Program Notes: Students are strongly encouraged to meet with the program head either before registering for their first semester or early in their first semester of study.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by successfully passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
WEL 120	Fundamentals of Welding	1	3	2
SDV 100	College Success Skills	1	0	1
AUT 111	Automotive Engines I	3	3	4
AUT 236	Automotive Climate Control	3	3	4
AUT 241	Automotive Electricity I	2	3	3
ENG 111	College Composition I	3	0	3
	or			

ENG 137	Communication Processes			
	TOTAL	13	12	17
AUT 242	Automotive Electricity II	2	3	3
AUT 126	Auto Fuel and Ignition Systems	4	3	5
AUT 141	Auto Power Trains I	3	3	4
AUT 197	Cooperative Education	0	10	2
___ ___[1]	General Education Elective	3	0	3
	TOTAL	12	19	17
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
AUT 142	Auto Power Trains II	3	3	4
AUT 165	Auto Diagnosis and Tune-Up	1	3	2
AUT 267	Automotive Suspension and Braking Systems	3	3	4
AUT 197	Cooperative Education	0	10	2
___ ___[2]	or Approved Elective			
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	10-12	19-23	17

Total Minimum Credits for Certificate in Automotive Technology 51

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]A list of approved electives is available from the program head.

Culinary Arts

Associate of Applied Science

Purpose: The Culinary Arts program provides a comprehensive occupational-technical education and is intended to lead to employment as a culinarian within a variety of culinary, food service and retail paths.

Occupational Objectives: The Culinary Arts Associate of Applied Science degree prepares graduates to enter kitchens as professional cooks in hotels, resorts, restaurants, catering operations and a variety of retail businesses.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission, students must demonstrate college level proficiency in reading and writing. Proficiency may be demonstrated by:

1. Submission of official college transcripts that record completion of a college level composition course, or
2. Submission of SAT or ACT scores, taken within the past five years, at the following levels:
   - ACT Verbal 19
   - SAT Verbal 480 (taken on or after April 1, 1995)
   - SAT Critical Reading 480 (taken on or after March 1, 2005, or
3. Successful completion of the COMPASS English placement test for ENG 111, with a satisfactory score on the reading test. Students with deficiencies in reading or writing may require developmental studies to be commenced during their first semester of enrollment, and completed sequentially every subsequent semester until all developmental requirements are satisfied.

Students who earn a final grade lower than "C" in any HRI course must obtain permission from their advisor to continue the major in Culinary Arts. Students will normally be required to repeat courses in their major when grades lower than "C" are earned. Exceptions must be approved in writing by the program head.
The competency-based nature of the curriculum allows students with previous educational studies or training experience to be evaluated for advanced standing. Students who believe they are eligible for such consideration are required to meet with their advisor to discuss eligibility for evaluation and possible advanced standing.

The purpose of the Associate of Applied Science (AAS) degree curriculum is to prepare students for immediate employment upon graduation. Four-year college and university transfer opportunities for Associate of Applied Science degrees, if existing, are usually very specific in nature. Students may, however, substitute some courses in the AAS degree curriculum with courses that generally transfer to senior institutions. Students should consult their advisor at the earliest possible date for further guidance and are advised to get assurances in writing in advance from the institution to which they wish to transfer.

Accreditation: The Culinary Arts Associate of Applied Science degree program is accredited by the American Culinary Federation Foundation, Inc. Accrediting Commission. Students who graduate from our Culinary Arts Associate of Applied Science degree program and are American Culinary Federation (ACF) members at time of graduation are eligible for free ACF certification as a Certified Culinarian (CC). Graduated students who utilize this benefit have an advantage when seeking employment, because certification is representative of having the knowledge and skills to be successful.

Culinary Apprenticeship: The American Culinary Federation (ACF) offers a three-year apprenticeship program. Whereas J. Sargeant Reynolds Community College does not administer the apprenticeship, it does provide the educational component of the program. Interested parties should contact the ACF Virginia Chefs Association at www.vachefs.org for further information.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing HRI 159.

Curriculum Sequence: The curriculum sequence illustrated below is one example of how courses may be completed. For complete information, visit http://www.jsr.vccs.edu/hospitality/culinarysequence.htm. Many students are academically prepared and disciplined enough to earn the Culinary Arts Associate of Applied Science degree in an accelerated manner. These students choose a ***Fast Track 15-month Schedule*** that may be viewed at http://www.jsr.vccs.edu/hospitality/culinarysequence.htm. Due to the accelerated pace and intensive workload, students should carefully consider this scheduling option prior to enrolling.

Faculty provide one-on-one advising to enhance student success. Students pursuing this degree must schedule and complete an entry interview with their faculty advisor. Once enrolled, students must meet with their advisor every semester to review their scheduling strategy and status toward graduation.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100[1]	College Success Skills	1	0	1
HRI 106[2]	Principles of Culinary Arts I	2	3	3
HRI 219[2]	Stock, Soup, and Sauce Preparation	2	3	3
HRI 158	Sanitation and Safety	3	0	3
ENG 111	College Composition I	3	0	3
	TOTAL	11	6	13
HRI 218[2]	Fruit, Vegetable, and Starch Preparation	2	3	3
HRI 220[2]	Meat, Seafood, and Poultry Preparation	2	3	3

HRI 134	Food and Beverage Service Management	3	0	3
HRI 119	Applied Nutrition for Food Service	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
	TOTAL	13	6	15
HRI 251	Food and Beverage Cost Control I	3	0	3
HRI 159	Introduction to Hospitality Industry Computer Systems	3	2	4
HLT 100	First Aid and Cardiopulmonary Resuscitation	3	0	3
	TOTAL	9	2	10
HRI 128[2]	Principles of Baking	2	3	3
HRI 145[2]	Garde Manger	2	3	3
HRI 224	Recipe and Menu Management	3	0	3
ENG 112	College Composition II	3	0	3
	TOTAL	10	6	12
HRI 207[2]	American Regional Cuisine	2	3	3
HRI 147	World Cuisines	3	0	3
HRI 206[2]	International Cuisine	2	3	3
___ ___[3]	Social/Behavioral Science Elective	3	0	3
	TOTAL	10	6	12
HRI 190	Coordinated Internship	0	10	2
HRI 299[2]	Capstone Study in Culinary Arts	0	4	2
___ ___[3]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	3	14	7

Total Minimum Credits for AAS Degree in Culinary Arts **69**

[1]SDV 100 must be taken in the student's first semester.
[2]Students enrolled in HRI classes involving food laboratory usage will be allowed in laboratories only when wearing approved uniforms. Students enrolled in HRI 106, 145, 206, 20, 218, 219, 220, and 299 will be allowed in laboratories only when possessing approved tool kits. Specifications may be obtained at www.reynolds.edu/hospitality/uniforms.htm or from program faculty.
[3]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Dental Assisting

Certificate

Purpose: (l) To prepare students to perform the following services under supervision of a dentist: chairside assistance, including preparation of impression and restorative materials; exposing and processing intra-oral and panoramic dental radiographs; laboratory and office management procedures; dental health education; recognition of emergencies; patient care as authorized by the Virginia Board of Dentistry. (2) To qualify students for the Dental Assisting National Board Certification Examination.

Occupational Objectives: This program is designed to provide essential technological and practical knowledge required for a dental assistant to perform efficiently in a dental office. Training experiences in nearby dental clinics and private dental offices are provided.

Admission Requirements: General college curricular admission

Financial Requirements: In addition to the regular college tuition and fees, the Dental Assisting Program requires the items listed below. Costs are approximate.

Textbooks	$300.00* (per semester)
Uniforms, Lab Coat, Clinic Coat, Safety Glasses, Name Tag, and Hepatitis Vaccine Series	$300.00*
Background Check	$43.00*
The following expenses are optional:	
Student Membership in the ADAA (will increase each year after expiration of student membership)	$35.00*
DANB Certification Exam	$475.00*

*Costs listed are approximate

Program Notes: This program accepts new students in the spring and fall semesters of each year. Students admitted into Dental Assisting will be approved for entry into major/clinical courses (DNA 103 and higher) when they have satisfied the following requirements:

1. Completion of all JSRCC developmental coursework prescribed as a result of JSRCC placement tests.
2. Completion of one unit of high school biology with a grade of "C" or better, or its equivalent (JSRCC BIO 1).
3. Completion of one unit of high school mathematics with a grade of "C" or better, or its equivalent (JSRCC MTH 2).
4. All applicants to the Dental Assisting program must declare their curriculum as the Pre-Practical Nursing and Dental Assisting Career Studies Certificate. (Please see http://www.jsr.vccs.edu/curriculum/plan_info.htm for information on this career studies certificate.) In order to be officially accepted into the Dental Assisting program, applicants will need to fulfill certain prerequisites included in the career studies certificate. College transfer students will need to meet and discuss options with the program head.
5. After officially being accepted into the Dental Assisting program, all applicants must have a personal interview with the program head or a designated faculty member.
6. A grade of "C" or better in each course of the Pre-Practical Nursing and Dental Assisting Certificate curriculum.
7. Completion of health forms provided by the program head for physical and dental examinations.

Any student whose final grade falls below a "C" in any course must obtain permission from the program head to continue the major in Dental Assisting. Students are responsible for transportation to and from facilities used for clinical experiences. DNA courses are sequential unless otherwise determined by the program head.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical education opportunities for its students, expert clinical preceptors, and course instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments. Additionally, the college may have to change the instructor for courses after instruction has started.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's com-

puter competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Those students not passing the computer competency exam may retake the exam only once.

Program Accreditation: The program in Dental Assisting is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of "approval without reporting requirements." The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312)440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
*SDV 100	College Success Skills	1	0	1
DNA 100	Introduction to Oral Health Professions	1	0	1
DNA 103	Introduction to Oral Health	1	0	1
DNA 108	Dental Science	2	3	3
DNA 109	Practical Infection Control	2	3	3
DNA 110	Dental Materials	2	3	3
DNA 113	Chairside Assisting I	2	3	3
DNA 190	Coordinated Internship in Dental Assisting	0	8	2
	TOTAL	11	20	17
DNA 114	Chairside Assisting II	2	6	4
DNA 119	Dental Therapeutics	1	0	1
DNA 120	Community Health	1	0	1
DNA 134	Dental Radiology and Practicum	2	3	3
DNA 140	Externship	1	12	5
	TOTAL	7	21	14
DNA 130	Dental Office Management	2	3	3
	TOTAL	2	3	3
*HLT 105	Cardiopulmonary Resuscitation	1	0	1
*ENG 111	College Composition I	3	0	3
*ITE 115	Introduction to Computer Applications and Concepts	3	0	3
*PSY 201	Introduction to Psychology	3	0	3
	TOTAL	10	0	10

Total Minimum Credits for Certificate in Dental Assisting 44

*This course is included in the Pre-Practical Nursing and Dental Assisting Career Studies Certificate.

Dental Laboratory Technology

Associate of Applied Science

Purpose: The major in Dental Laboratory Technology begins each fall semester and is designed to prepare students for employment as dental laboratory technicians to provide an essential support service for the dental professional according to the dentist's prescription or work request. The dental laboratory technician constructs and repairs all types of dental prosthetic appliances.

Occupational Objectives: Employment opportunities exist in commercial dental laboratories, hospital dental laboratories, private dental offices, dental research laboratories, and in dental sales.

Admission Requirements: General college curricular admission

Financial Requirements: In addition to the regular college tuition and fees, the Dental Laboratory Technology program requires the following:

Books and Instruments	$461 per academic year
Books and Instruments	$178 summer session

Program Notes: Students admitted into this program will be approved for entry into major/clinical courses (DNL 120 and higher) when they have satisfied the following requirements:

1. Completion of one unit of high school mathematics with a grade of "C" or better, or its equivalent (JSRCC MTH 2).
2. Completion of all JSRCC developmental coursework prescribed as a result of JSRCC placement tests.
3. All applicants to the Dental Laboratory Technology AAS degree program must declare their curriculum plan as the Pre-Nursing and Allied Health Career Studies Certificate only if they wish to enroll prior to fall semester. (Please see http://www.jsr.vccs.edu/curriculum/programs/Pre-Nursing_AlliedHealthCSC.htm.) In order to be officially accepted into the Dental Laboratory Technology program, applicants will need to meet with the program head to review their records. Career studies certificate courses or general education course do not have to be completed in order to enroll in the program for fall semester.
4. All applicants must interview with the program head and receive permission to enter major and clinical courses. The interview will include evaluation of appropriate related experience and may include a manual dexterity test. Students must provide evidence of interest, aptitude, and motivation in dental laboratory technology. Call (804)523-5931 for an appointment.

Any student whose final grade is below a "C" in any dental laboratory course must obtain permission from the program head to continue the major in Dental Laboratory Technology. DNL courses are sequential unless otherwise determined by the program head.

Some courses in this program are offered via distance learning with in-person or proctor required. For distance learning courses, tests may be taken at an approved testing center as determined by the faculty member and the program.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical educational opportunities for its students, expert clinical preceptors, and course instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures, and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments. Additionally, the college may have to change the instructor for courses after instruction has started.

Computer Competency Requirement: All applicants to this program must take the computer competency exam, administered in the testing centers on each campus, prior to enrollment in their first semester of courses. Those students not passing this exam after a maximum of two attempts will be required to complete ITE 115 or CSC 155 or equivalent prior to or concurrently with DNL 175. (See program advisor.)

Program Accreditation: The program in Dental Laboratory Technology is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of "approval without reporting requirements." The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312)440 -4653 or at 211 East Chicago Avenue, Chicago, IL 60611.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
DNL 100	Professional Ethics and Dental History	2	0	2
DNL 110	Dental Laboratory Materials	2	3	3
DNL 120	Dental Anatomy and Physiology	2	3	3
DNL 130	Introduction to Complete Dentures	3	9	6
*SDV 100	College Success Skills	1	0	1
	TOTAL	10	15	15
DNL 135	Introduction to Removable Partial Dentures	3	9	6
DNL 136	Principles of Occlusion	2	3	3
*NAS 105	Natural Science Topics for Modern Society	2	0	2
*MTH 120	Introduction to Mathematics	3	0	3
*ENG 111	College Composition I	3	0	3
	TOTAL	13	12	17
DNL 137	Orthodontic and Pedodontic Appliances	2	3	3
DNL 138	Introduction to Fixed Prosthodontics	3	9	6
DNL 160	Removable Prosthodontic Techniques	2	3	3
*___ __[1]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	7-9	15-19	14
DNL 175[2]	Dental Laboratory Management	2	0	2
DNL 220	Introduction to Dental Ceramics	3	9	6
*PSY 120	Human Relations	3	0	3
	or			
*PSY 201	Introduction to Psychology I			
*ENG 112	College Composition II	3	0	3
	TOTAL	11	9	14
DNL 216[3]	Dental Laboratory Practicum	1	15	6
DNL 231	Advanced Dental Laboratory I Techniques	2	0	2
DNL 298	Seminar and Project	1-2	0	1-2
*___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	7-8	15	12-13
Total Minimum Credits for AAS Degree in Dental Laboratory Technology				**72**

*This course is included in the Pre-Nursing and Allied Health Career Studies Certificate.

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]Students must pass the computer competency test or complete either ITE 115 or CSC 155 or equivalent prior to or concurrently with DNL 175.
[3]Students may choose one or two areas of concentration from the following specialties: complete dentures, partial dentures, crown and bridge, dental ceramics and orthodontics.

Diesel Mechanics Technology

Certificate

Purpose: The Diesel Mechanics Technology curriculum is designed to introduce the fundamentals of diesel equipment repair and provide instruction in hydraulic systems welding, diesel engine overhaul and tune-up, electrical circuits, power train maintenance and fuel injection. The Diesel Mechanics Technology program will give graduates a practical background in basic diesel equipment technology principles. The curriculum provides practical training and the option of on-the-job experience through cooperative education. The demand for trained diesel mechanic personnel and technicians is increasing.

Occupational Objectives: The Diesel Mechanics Technology curriculum prepares graduates for employment in any of the following occupations: Diesel Equipment Repair, Diesel Truck Repair, Supervisor, Shop Foreman, Heavy Duty Repair, Purchasing Agent, Salesperson, Power Train Repair, Fuel Injection Repair, Diesel Engine Repair, and Automotive Diesel Repair.

Admission Requirements: General college curricular admission

Program Notes: Students are strongly encouraged to meet with the program head either before registering for their first semester or early in their first semester of study.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
DSL 153	Power Trains I	2	2	3
WEL 120	Fundamentals of Welding	1	3	2
SDV 100	College Success Skills	1	0	1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
DSL 150	Mobile Hydraulics and Pneumatics	2	2	3
ENG 111	College Composition I	3	0	3
	or			
ENG 137	Communication Processes			
	TOTAL	12	7	15
DSL 176	Transportation Air Conditioning	1	2	2
DSL 195	Transportation Electrical Systems	2	3	3
DSL 126	Diesel Engine Reconditioning	3	6	6
DSL 131	Diesel Fuel Systems and Tune-up	2	4	4
DSL 160	Air Brake Systems	2	2	3
	TOTAL	10	17	18

DSL 154	Power Trains II	2	2	3
DSL 155	Heavy Duty Suspension and Service	2	2	3
DSL 197	Cooperative Education or Approved Elective	0	15	3
___ ___[1]	General Education Elective	3	0	3
	TOTAL	7	19	12

Total Minimum Credits for Certificate in Diesel Mechanics Technology **45**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Early Childhood Development

Associate of Applied Science

Purpose: The two-year degree program in Early Childhood Development is designed to prepare students with skills and theoretical knowledge related to the care, supervision, education and development of young children from birth to age twelve. Upon successful completion of the curriculum, students will be prepared to seek employment in a variety of positions in the childcare field.

Occupational Objectives: Graduates can seek employment as childcare center directors, assistant directors, teachers and teacher aides, camp directors, family day care providers, before and after school teachers, and playroom attendants in the following types of facilities: child day care centers, nursery schools, family day care centers, children's hospitals, Head Start centers, employer-provided childcare facilities, recreational facilities, before and after school programs, and public schools.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, all entering students will be required to take placement tests in math, writing and reading to aid placement in the appropriate courses. Students who do not meet required placement levels must enroll in developmental studies courses. It is recommended that students arrange for a personal interview and advising appointment with the program head.

It is recommended that students take courses in the sequence listed in the catalog. Students must attain a grade of "C" or higher in all courses with CHD, HLT, and PSY prefixes.

An observation and participation in an approved early childhood/primary setting is required. It is a planned learning experience for the purpose of pulling together theories and practices learned in the classroom. A Criminal Record Clearance/Sex Offender Registry check is required for placement and volunteering. Students should see the program head for a list of convictions that will prevent employment. Students will be expected to complete a tuberculosis test before placement.

Students must have a valid first aid and CPR certification in order to be eligible for graduation. Valid cards must be filed with the program head or central admissions office prior to graduation and expiration.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SDV 100	College Success Skills	1	0	1
CHD 120	Introduction to Early Childhood Education	3	0	3
CHD 145	Teaching Art, Music, and Movement to Children	2	2	3
HLT 135	Child Health and Nutrition	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	TOTAL	15	2	16
CHD 215	Models of Early Childhood Programs	3	0	3
ENG 112	College Composition II	3	0	3
CHD 146	Math, Science, and Social Studies for Children	2	2	3
CHD 205	Guiding the Behavior of Children	3	0	3
CHD 165	Observation and Participation in Early Childhood/Primary Settings	1	6	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	12-14	8-12	17
PSY 235[2]	Child Psychology	3	0	3
MTH ___[2]	Approved Mathematics Elective	3	0	3
CHD 118	Language Arts for Young Children	2	2	3
CHD 270	Administration of Child Care Programs	3	0	3
CST 100	Principles of Public Speaking	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	17	2	18
CHD 166	Infant and Toddler Programs	3	0	3
CHD 117[4]	Introduction to Reading Methods	2	2	3
CHD 210	Introduction to Exceptional Children	3	0	3
CHD 216	Early Childhood Programs, School, and Social Change	3	0	3
CHD 265[3]	Advanced Observation and Participation in Early Childhood/ Primary Settings	1	6	3
CHD 298[5]	Seminar and Project	0	2	1
	TOTAL	12	10	16

Total Minimum Credits for AAS Degree in Early Childhood Development **67**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]Students considering transfer to a four-year college should consult their advisor about the appropriate transfer course to substitute for this course requirement.
[3]Prerequisite is CHD 165.
[4]Prerequisite is CHD 118.
[5]Co-requisite is CHD 265.

Early Childhood Development

Certificate

Purpose: The one-year certificate program in Early Childhood Development is designed to prepare students with skills related to the care, supervision, education and development of young children from birth to age eight. There is also the ability to become qualified to work with children up to the age of twelve in programs which serve before and after school and recreational programs.

Occupational Objectives: Employment opportunities include preparation or upgrading of skills for positions as childcare center directors, assistant directors, teachers or assistant teachers, aides, playroom attendants, home based providers or day care workers, camp directors and before and after school teachers in the following types of facilities: child day care centers, nursery schools, family day care homes, Head Start programs, recreational before and after school programs, hospital based childcare programs, pre-school at risk programs and pre-kindergarten church sponsored programs

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, all entering students will be required to take placement tests in math, writing and reading to aid placement in the appropriate courses. Students who do not meet required placement levels must enroll in developmental studies courses. It is recommended that students arrange for a personal interview and advising appointment with the program head.

A field internship in an approved childcare center is required in the second semester of the Early Childhood curriculum. It is a planned learning experience for the purpose of pulling together the theories and practice learned in the classroom. A Criminal Record Clearance/Sex Offender Registry Check is required for placement and volunteering. See the program head for a list of convictions that will prevent employment. The student will be expected to complete a tuberculosis test before practicum placement.

Students must attain a grade of "C" or higher in all courses with CHD, HLT, and PSY prefixes.

Students must have a valid first aid and CPR certificate in order to be eligible for graduation. Valid cards must be filed with the program head or central admissions office prior to expiration and graduation.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
CHD 120	Introduction to Early Childhood Education	3	0	3
CHD 145	Teaching Art, Music, and Movement to Children	2	2	3
CHD 205	Guiding the Behavior of Children	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
SDV 100	College Success Skills	1	0	1
	TOTAL	15	2	16
CHD 216	Early Childhood Programs, School, and Social Change	3	0	3
CHD 146	Math, Science, and Social Studies for Children	2	2	3
CHD 215	Models of Early Childhood Programs	3	0	3
HLT 135	Child Health and Nutrition	3	0	3
PSY 235	Child Psychology	3	0	3
CHD 165	Observation and Participation in Early Childhood/Primary Settings	1	6	3
	TOTAL	15	8	18

Total Minimum Credits for Certificate in Early Childhood Development **34**

Emergency Medical Services – Paramedic

Associate of Applied Science

Purpose: To prepare students to be knowledgeable, competent pre-hospital care practitioners and fill positions at the level of Emergency Medical Technician – Paramedic

Occupational Objectives: Emergency Medical Technician – Paramedic

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, the student must have current Virginia or National Registry EMT-B and a valid CPR for Healthcare Providers card. Applicants to the program must have completed one unit of high school biology and one unit of high school chemistry with a minimum grade of "C" or obtain the permission of the EMS program head for a waiver to that requirement to meet the US DOT Paramedic N.S.C. A&P requirement.

All applicants to the Emergency Medical Services AAS degree program must declare their curriculum plan as the Pre-Nursing and Allied Health Career Studies Certificate. (Please see http://www.jsr.vccs.edu/curriculum/plan_info.htm for information on this career studies certificate.) In order to be officially accepted into the Emergency Medical Services program, applicants will need to fulfill certain prerequisites included in the career studies certificate and meet with the program head to review their records.

In compliance with Virginia State Board of Health, Virginia EMS regulations (12 VAC 5-31-1200 and 12 VAC 5-31-1460), students wishing to register for any of the courses with an EMS prefix in this program must be at least 18 years of age at the time of their enrollment. Students younger than 18 are encouraged to enroll in any of the non-EMS prefix courses until they reach their 18th birthday and are legally eligible for enrollment in EMS courses.

To determine current tuition and fees, go to this web page http://www.jsr.vccs.edu/jsr_ar/paying_for_college.htm, or call the School of Nursing and Allied Health office at (804)523-5375. Additional fees for the Paramedic program include certification for CPR, ACLS, BTLS, and PALS. National Registry Advanced Life Support certification exams cost approximately $150-$200, including practical testing and National Registry of EMTs application fees. The instructor will inform students of the textbooks and other required learning materials needed in the syllabus for each course.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical education opportunities for its students, expert clinical preceptors, and course

instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments. Additionally, the college may have to change the instructor for courses after instruction has started.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
EMS 111[1,2,5]	Emergency Medical Technician – Basic or	4	4	6
EMS 112[1,5]	Emergency Medical Technician – Basic and	2	2	3
EMS 113[1,2]	Emergency Medical Technician – Basic II	2	2	3
EMS 120	Emergency Medical Technician – Basic Clinical	1	0	1
*NAS 161	Health Sciences I	3	3	4
*SDV 100	College Success Skills	1	0	1
	TOTAL	9	7	12
EMS 151[5]	Introduction to Advanced Life Support	3	2	4
EMS 170	ALS Internship I	0	3	1
EMS 153	Basic ECG Recognition	2	0	2
EMS 157	ALS – Trauma Care	2	2	3
*ENG 111	College Composition I	3	0	3
	TOTAL	10	7	13
EMS 155	ALS – Medical Care	3	2	4
EMS 159	ALS – Special Populations	1	2	2
EMS 172	ALS Clinical Internship II	0	6	2
EMS 173	ALS Field Internship II	0	3	1
HLT 143	Medical Terminology	3	0	3
*ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	TOTAL	10	13	15
EMS 205	Advanced Pathophysiology	3	0	3
EMS 207	Advanced Patient Assessment	2	2	3
EMS 242	ALS Clinical Internship III	0	6	2
EMS 243	ALS Field Internship III	0	6	2
EMS 201	EMS Professional Development	2	0	2
___ ___[3,4]	Social/Behavioral Science Elective	3	0	3
	TOTAL	10	14	15
EMS 209	Advanced Pharmacology	3	2	4
*___ __[3,4]	Social/Behavioral Science Elective	3	0	3
EMS 211	Operations	1	2	2
EMS 244	ALS Clinical Internship IV	0	3	1
EMS 245	ALS Field Internship IV	0	3	1
*___ __[4]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	10	10	14

Total Minimum Credits for AAS Degree in Emergency Medical Services – Paramedic 69

*This course is included in the Pre-Nursing and Allied Health Career Studies Certificate

[1]EMS 112 and 113 taken in two consecutive semesters are equivalent to the one semester EMS 111 and are interchangeable for the degree. The required CPR certification is included in EMS 111 and 112. EMS 112 is a prerequisite for EMS 113.
[2]EMS 120 must be taken concurrently with EMS 111 or EMS 113.
[3]EMS students interested in the AAS in Nursing, or completing this program and entering the Paramedic to RN program, should take SOC 200 and PSY 230 as their two social/behavioral science electives.
[4]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[5]EMS 111, 112, and 151 fulfill the general education requirement for personal wellness.

Fire Science Technology

Associate of Applied Science

Specializations

Fire Services
Fire Protection System Design

Purpose: The major in Fire Science Technology has been designed for students desiring to advance in the fire protective service occupations and to acquire knowledge in fire protection fundamentals useful in related occupations. With the increasing complexity of modern technology in the fire protection field, it is necessary for fire protection personnel to acquire specialized knowledge and problem-solving skills to meet the challenge of a changing society.

Occupational Objectives: Firefighter, Fire Officer, Fire Protection Specialist, Fire/Emergency Instructor, Fire or Building Inspector, Fire Investigator, Rescue Service, Emergency Medical Service, Hazardous Materials Services, Emergency Manager, Occupational or Industrial Safety and Risk Management, Fire Marshal, Fire Sprinkler Designer, Design Manager, Sprinkler Installer or Mechanic, and related occupations

Admission Requirements: General college curricular admission

Program Notes: The purpose of the Associate of Applied Science (AAS) degree curriculum is to prepare students for immediate employment upon graduation. Four-year college and university transfer opportunities for AAS degrees, if existing, are usually very specific in nature. JSRCC has formal transfer articulation agreements with four-year institutions that enable graduates who qualify to transfer courses completed in the AAS degree. These transfer articulation agreements are subject to change or expiration. In addition, students may substitute some courses in the AAS degree curriculum with courses that typically transfer to senior institutions. Students interested in transferring in general or transferring under a formal transfer articulation agreement should consult their faculty advisor upon program entry for further guidance.

There are no physical requirements such as height, weight, eyesight, and physical dexterity; however, the student should understand that there may be some requirements for employment in fire or rescue service agencies.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in

which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

Fire Services Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
FST 100[1]	Introduction to Emergency Services	3	0	3
FST 110	Fire Behavior and Combustion	3	0	3
___ ___[2]	Laboratory Science Elective	3	3	4
___ ___[2]	Social/Behavioral Science Elective	3	0	3
	TOTAL	16	3	17
ENG 112	College Composition II	3	0	3
FST 112[1]	Hazardous Materials Chemistry	3	0	3
FST 115[1]	Fire Prevention	3	0	3
MTH 120[3]	Introduction to Mathematics	3	0	3
___ ___[2]	Social/Behavioral Science Elective	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	TOTAL	18	0	18
FST 240	Fire Administration	3	0	3
FST 235	Strategy and Tactics	3	0	3
___ __[2,4]	Personal Wellness Elective	0-3	0-4	2-3
	or			
EMS 112	Emergency Medical Technician - Basic I			
FST 121	Principles of Fire and Emergency Services Safety and Survival	3	0	3
FST 220	Building Construction for the Fire Service	3	0	3
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	15-18	0-4	17-18
FST 205	Fire Protection Hydraulics and Water Supply	3	0	3
FST 245	Fire and Risk Analysis	3	0	3
FST 210	Legal Aspects of Emergency Services	3	0	3
FST 215	Fire Protection Systems	3	0	3
CST 100[5]	Principles of Public Speaking	3	0	3
	TOTAL	15	0	15

Total Minimum Credits for AAS Degree in Fire Science Technology 67

[1]Students with certain fire service certifications may be awarded credit for this course. See course description or program head for more details.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3]Students planning to attend a four-year institution are recommended to take MTH 151, 170 or 163 in place of MTH 120.
[4]EMS 111 or 112 will also satisfy the general education requirement for personal wellness. Students who have a valid EMT certificate will be given credit for EMS 112 when all other curriculum requirements have been met.
[5]Students with Fire Service Instructor 1 and Train the Trainer for Firefighter 1 and 2 Instructor or Fire Service Instructor 2 certification can be awarded credit for FST 135, which will substitute for this course. See course descriptions or program head for more details.

CURRICULUM

Fire Protection System Design Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
FST 100[1]	Introduction to Emergency Services	3	0	3
MTH 115[2]	Technical Mathematics I	3	0	3
DRF 231	Computer-Aided Drafting I	2	2	3
	TOTAL	15	3	16
ENG 112	College Composition II	3	0	3
FST 215	Fire Protection Systems	3	0	3
FST 115[1]	Fire Prevention	3	0	3
___ ___[3]	Social/Behavioral Science Elective	3	0	3
FST 205	Fire Protection Hydraulics and Water Supply	3	0	3
DRF 232	Computer-Aided Drafting II	2	2	3
	TOTAL	17	2	18
FST 216	Automatic Sprinkler System Design I	3	0	3
FST 235	Strategy and Tactics	3	0	3
___ __[3,4]	Personal Wellness Elective	0-3	0-4	2-3
	or			
EMS 112	Emergency Medical Technician-Basic I			
FST 110	Fire Behavior and Combustion	3	0	3
FST 220	Building Construction for the Fire Service	3	0	3
___ ___[3]	Social/Behavioral Science Elective	3	0	3
	TOTAL	15-18	0-4	17-18
FST 245	Fire and Risk Analysis	3	0	3
FST 217	Automatic Sprinkler System Design II	3	3	4
___ ___[3]	Laboratory Science Elective	3	0	3
___ ___[3]	Humanities/Fine Arts Elective	3	0	3
CST 100[5]	Principles of Public Speaking	3	0	3
	TOTAL	15	3	16

Total Minimum Credits for AAS Degree in Fire Science Technology– Fire Protection Systems Design Specialization 67

[1]Students with certain fire service certifications may be awarded credit for this course. See course description or program head for more details.
[2]Students planning to attend a four-year institution are recommended to take MTH 163, or MTH 166, or other approved mathematics elective in place of MTH 115. Students should consult their advisor regarding course selection.
[3]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

[4]EMS 111 or 112 will also satisfy the general education requirement for personal wellness. Students who have a valid EMT certificate will be given credit for EMS 112 when all other curriculum requirements have been met.
[5]Students with Fire Service Instructor 1 and Train the Trainer for Firefighter 1 and 2 Instructor or Fire Service Instructor 2 certification can be awarded credit for FST 135, which will substitute for this course.

Fire Science Technology
Certificate

Purpose: The certificate program in Fire Science Technology is designed to provide a broad-based knowledge of current and future advances in the fire science field. Rapid advances in technology require that personnel in the field keep abreast of the latest changes in technology and equipment.

Occupational Objectives: Firefighter, Fire Officer, Fire Protection Specialist, Fire/Emergency Instructor, Fire or Building Inspector, Fire Investigator, Rescue Service, Emergency Medical Service, Hazardous Materials Services, Emergency Manager, Occupational or Industrial Safety and Risk Management, and related occupations

Admission Requirements: General college curricular admission

Program Notes: The certificate program is designed to provide full transferability to the AAS degree program where more in-depth knowledge in management is emphasized.

There are no physical requirements such as height, weight, eyesight, and physical dexterity; however, the student should understand that there may be some requirements for employment in fire or rescue service agencies.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
FST 100	Introduction to Emergency Services	3	0	3
FST 110	Fire Behavior and Combustion	3	0	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
___ ___[1]	Laboratory Science Elective	3	3	4
	TOTAL	16	3	17
ENG 112	College Composition II	3	0	3
FST 112	Hazardous Materials Chemistry	3	0	3
FST 115	Fire Prevention	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
MTH 120[2]	Introduction to Mathematics	3	0	3
___ __[1]	Social/Behavioral Science Elective	3	0	3
	TOTAL	18	0	18

Total Minimum Credits for Certificate in Fire Science 35

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]Students planning to attend a four-year institution are recommended to take MTH 151, 170, or 163 in place of MTH 120.

Horticulture Technology
Associate of Applied Science

Purpose: The Horticulture Technology program is designed to prepare students for a wide range of horticulture careers. Training is available for those who seek to begin a career track, as well as those who are changing careers. Individuals already in the green industry are invited to improve or upgrade their skills and knowledge with appropriate courses.

Occupational Objectives: The program offers hands-on laboratory work as well as classroom instruction in the design-install-maintain aspects of landscaping, in floral design, and in production of horticultural materials. Many of our graduates own and operate their own businesses, while others are employed by corporate, commercial, or governmental entities.

Admission Requirements: General college curricular admission

Program Notes: Students in the Horticulture Technology program must complete a basic core of specified horticulture technology and general education courses. In addition, the students will select technical courses which match with their career objectives, in consultation with the program head.

Students who already have a two-year, four-year, or graduate degree should request that their transcripts be sent to the college registrar if transfer credit is desired. It is strongly recommended that students meet with the program head or counselor either before registering or early in their first semester of study.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

Curriculum Sequence: The curriculum sequence below is one example of how courses may be completed. Students should work with their program advisor to determine the most appropriate sequence.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
HRT 106[2]	Practical Horticulture	0	2	1
HRT 110[2]	Principles of Horticulture	3	0	3
	TOTAL	16	2	17
ENG 112	College Composition II	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3

___ ___[1]	Social/Behavioral Science Elective	3	0	3
HRT 125[2,3]	Chemicals in Horticulture	2	2	3
HRT127[2]	Horticultural Botany	2	2	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	13-15	4-8	17
HRT 201[2]	Landscape Plant Materials I	2	2	3
HRT ___	Approved HRT Elective	2-3	0-2	3
HRT ___	Approved HRT Elective	2-3	0-2	3
HRT ___	Approved HRT Elective	2-3	0-2	3
HRT ___	Approved HRT Elective	2-3	0-2	3
	TOTAL	10-14	0-10	15
HRT 202[2]	Landscape Plant Materials II	2	2	3
HRT ___	Approved HRT Elective	2-3	0-2	3
HRT ___[4]	Approved HRT Elective	2-3	0-2	3
HRT ___	Approved HRT Elective	2-3	0-2	3
HRT ___	Approved HRT Elective	2-3	0-2	3
HRT 290[2,5]	Coordinated Internship	0	4	2
	TOTAL	10-14	6-14	17

Total Minimum Credits for AAS Degree in Horticulture **66**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics/science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]Course is required of all Horticulture Technology AAS students.
[3]Credit will be given for HRT 125, Chemicals in Horticulture, upon evidence of a valid Commercial Pesticide Applicator Certificate (with an endorsement in 3-A and 3-B) issued from VDACS or completion of HRT 199, Training for Commercial Pesticide Application.
[4]Approved HRT electives are listed below according to focus areas in the field of horticulture.
[5]Coordinated Internship will be waived on evidence of five or more years experience in the green industry. An approved HRT elective will be substituted.

Following is a list of approved Horticulture electives that is organized according to focus areas within the green industry. In consultation with their HRT advisor, students will select a total of 24 credits of HRT electives from this list that are consistent with students' career objectives.

Horticulture electives in the **SUSTAINABLE AGRICULTUR**E focus
HRT 130 Introduction to Biointensive Mini-Farming (3 cr.)
HRT 134 Four Season Food Production (3 cr.)
HRT 238 Growing for Market Mini-Farming (3 cr.)
HRT 239 Complete Diet Mini-farming (3 cr.)
HRT 195 Special Topics in Horticulture: Summer Workshops (1 cr.)

Horticulture electives in the **LANDSCAPE DESIGN** focus
HRT 120 History of Garden Design (3 cr.)
HRT 150 Theory of Landscape Design (3 cr.)
HRT 231 Planting Design I (3 cr.)
HRT 232 Planting Design II (3 cr.)
HRT 233 Landscape Drawing Applications (CAD-I) (3 cr.)
HRT 234 Advanced Landscape Drawing Applications (CAD-II) (3 cr.)
HRT 235 Landscape Drawing (3 cr.)
HRT 246 Herbaceous Plants (3 cr.)
HRT 249 Perennial Plants (3 cr.)
HRT 275 Landscape Construction and Maintenance (3 cr.)

Horticulture electives in the PLANT PRODUCTION focus
HRT 115 Plant Propagation (3 cr.)
HRT 121 Greenhouse Crop Production I (3 cr.)
HRT 122 Greenhouse Crop Production II (3 cr.)
HRT 207 Plant Pest Management (3 cr.)
HRT 225 Nursery and Garden Center Management (3 cr.)
HRT 226 Greenhouse Management (3 cr.)

Horticulture electives in the FLORAL DESIGN focus
HRT 260 Introduction to Floral Design (3 cr.)
HRT 266 Advanced Floral Design (3 cr.)
HRT 268 Advanced Floral Design Applications (3 cr.)
HRT 198 Seminar & Project in Floral Design (3 cr.)
HRT 295 Advanced Floral Design Styles and Techniques (3 cr.)

Horticulture electives in the **LANDSCAPE and TURF MANAGEMENT** focus
HRT 119 Irrigation Systems for Turf and Ornamentals (3 cr.)
HRT 126 Home Landscaping (3 cr.)
HRT 199 Training for Commercial Pesticide Application (3 cr.)
HRT 205 Soils (3 cr.)
HRT 207 Plant Pest Management (3 cr.)
HRT 227 Professional Landscape Management (3 cr.)
HRT 246 Herbaceous Plants (3 cr.)
HRT 249 Perennial Plants (3 cr.)
HRT 259 Arboriculture (3 cr.)
HRT 269 Professional Turf Care (3 cr.)
HRT 275 Landscape Construction and Maintenance (3 cr.)
HRT 295 Sports Turf Management (3 cr.)

Hospitality Management

Associate of Applied Science

Specializations:

Food Service Management
Hospitality Entrepreneurship
Lodging Operations

Purpose: The Hospitality Management program provides a specialized business education and is intended to lead to management employment in the hospitality industry.

Occupational Objectives: The **Food Service Management Specialization** prepares graduates to contribute leadership at manager and director levels in hotels, resorts, restaurants, catering operations, non-commercial food service operations and a variety of retail businesses. The **Hospitality Entrepreneurship Specialization** prepares graduates to own and operate their own hospitality enterprise. The curriculum includes several approved electives which enable students to tailor the curriculum to their own particular venture orientations. The **Lodging Operations Specialization** prepares graduates to provide leadership in a variety of management positions in hotels and resorts. Students who graduate with the Lodging Operations Specialization are eligible to simultaneously receive the Hospitality Management Diploma from the Educational Institute of the American Hotel & Lodging Association. The program head should be contacted for further details concerning dual awards.

Admission Requirements: General college curricular admission

Program Notes: In addition to general college curricular admission, students must demonstrate college level proficiency in reading and writing. Proficiency may be demonstrated by the following:

1. Submission of official college transcripts that record completion of a college level composition course, or
2. Submission of SAT or ACT scores, taken within the past five years, at the following levels:
   - ACT Verbal 19
   - SAT Verbal 480 (taken on or after April 1, 1995)
   - SAT Critical Reading 480 (taken on or after March 1, 2005, or
3. Successful completion of the COMPASS English placement test for ENG 111, with a satisfactory score on the reading test. Students with deficiencies in reading or writing may require developmental studies to be commenced during their first semester of enrollment, and completed sequen-

tially every subsequent semester until all developmental requirements are satisfied.

Students who earn a final grade lower than "C" in any HRI course must obtain permission from their advisor to continue the major in Hospitality Management. Students will normally be required to repeat courses in their major when grades lower than "C" are earned.

The competency-based nature of the curriculum allows students with previous educational studies or training experience to be evaluated for advanced standing. Students who believe they are eligible for such consideration are required to meet with their advisor to discuss eligibility for evaluation and possible advanced standing.

The purpose of the Associate of Applied Science (AAS) degree curriculum is to prepare students for immediate employment upon graduation. Four-year college and university transfer opportunities for Associate of Applied Science degrees, if existing, are usually very specific in nature. Students may, however, substitute some courses in the AAS degree curriculum with courses that generally transfer to senior institutions. Students should consult their advisor at the earliest possible date for further guidance and are advised to get assurances in writing in advance from the institution to which they wish to transfer.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing HRI 159.

Curriculum Sequence: Curriculum Sequence: The courses listed below are required for degree completion, but do not reflect a prescribed sequence. Recommended sequences can be viewed at http://www.jsr.vccs.edu/hospitality/hospitalitysequence.htm

Faculty provide one-on-one advising to enhance student success. Students pursuing this certificate must schedule and complete an entry interview with their faculty advisor. Once enrolled, students must meet with their advisor every semester to review their scheduling strategy and status toward graduation.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100[1]	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
HRI 154	Principles of Hospitality Management	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	13	0	13
___ ___[2]	Social/Behavioral Science Elective	3	0	3
ENG 112	College Composition II	3	0	3
HLT 100	First Aid and Cardiopulmonary Resuscitation	3	0	3
HRI 140	Fundamentals of Quality for the Hospitality Industry	3	0	3
HRI 255	Human Resources Management and Training for Hospitality and Tourism	3	0	3
	TOTAL	15	0	15

CURRICULUM
Lodging Operations Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
HRI 159	Introduction to Hospitality Industry Computer Systems	3	2	4
HRI 290	Coordinated Internship	0	15	3
___ ___[3,4]	Approved Elective	3	0	3
	TOTAL	6	17	10
ACC 115	Applied Accounting	3	0	3
HRI 160	Executive Housekeeping	3	0	3
HRI 235	Marketing of Hospitality Services	3	0	3
HRI 265	Hotel Front Office Operations	3	0	3
___ ___[3,4]	Approved Elective	3	0	3
	TOTAL	15	0	15
HRI 134	Food and Beverage Service Management	3	0	3
HRI 257	Catering Management	3	0	3
HRI 275	Hospitality Law	3	0	3
HRI 298	Seminar and Project in Hospitality Management	3	0	3
	TOTAL	12	15	12
HRI 270	Strategic Lodging Management	3	0	3
	TOTAL	3	0	3

Total Minimum Credits for AAS Degree in Hospitality Management Lodging Operations Specialization **68**

CURRICULUM
Hospitality Entrepreneurship Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
HRI 159	Introduction to Hospitality Industry Computer Systems	3	2	4
HRI 290	Coordinated Internship	0	15	3
___ ___[3,4]	Approved Elective	3	0	3
	TOTAL	6	17	10
ACC 115	Applied Accounting	3	0	3
HRI 241	Supervision in the Hospitality Industry	3	0	3
HRI 150	Introduction to Hospitality Ownership	3	0	3
HRI 235	Marketing of Hospitality Services	3	0	3
___ ___[3,4]	Approved Elective	3	0	3
	TOTAL	15	0	15
HRI 134	Food and Beverage Service Management	3	0	3
HRI 257	Catering Management	3	0	3
HRI 275	Hospitality Law	3	0	3
HRI 298	Seminar and Project in Hospitality Management	3	0	3
___ ___[3,4]	Approved Elective	3	0	3
	TOTAL	12	15	15

Total Minimum Credits for AAS Degree in Hospitality Management Hospitality Entrepreneurship Specialization **68**

CURRICULUM
Food Service Management Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ACC 115	Applied Accounting	3	0	3
HRI 159	Introduction to Hospitality Industry Computer Systems	3	2	4
HRI 290	Coordinated Internship	0	15	3
	TOTAL	9	2	10
HRI 119	Applied Nutrition for Food Service	3	0	3
HRI 158	Sanitation and Safety	3	0	3
HRI 224	Recipe and Menu Management	3	0	3
HRI 251	Food and Beverage Cost Control I	3	0	3
HRI 275	Hospitality Law	3	0	3
	TOTAL	15	0	15
HRI 134	Food and Beverage Service Management	3	0	3
HRI 241	Supervision in the Hospitality Industry	3	0	3
HRI 235	Marketing of Hospitality Services	3	0	3
HRI 257	Catering Management	3	0	3
HRI 298	Seminar and Project in Hospitality Management	3	0	3
	TOTAL	12	15	15

Total Minimum Credits for AAS Degree in Hospitality Management
Food Service Management Specialization 68

[1]SDV must be taken in the student's first semester.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3]A list of courses that will satisfy this requirement is available at www.reynolds.edu/hospitality/electives.htm or from the school office.
[4]Students enrolled in HRI classes involving food laboratory usage will be allowed in laboratories only when wearing approved uniforms. Students enrolled in HRI 106, 145, 206, 207, 218, 219, 220, and 299 will be allowed in laboratories only when possessing approved tool kits. Specifications may be obtained at www.reynolds.edu/hospitality/uniforms.htm or from program faculty.

Human Services

Associate of Applied Science

Purpose: The two-year associate degree in Human Services is designed to prepare students with the requisite professional knowledge, skills, and values to obtain entry-level positions in a diverse, pluralistic, and ever-changing, public, private, and non-profit human services delivery system.

Occupational Objectives: Employment opportunities include, but are not limited to, the following types of employers: social service agencies, childcare agencies, hospitals, mental retardation and rehabilitation agencies, mental health settings, juvenile and adult corrections, private, non-profit and for-profit agencies, and geriatric settings.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, an interview with the program head is recommended. While a face-to-face interview is preferable, an interview can also be conducted via telephone or electronic conference. The curriculum provides students with the requisite knowledge, skills, professional values, and attitudes necessary to practice in a diverse client and service delivery system. The program is also designed to enhance the professional knowledge, skills, and marketability of persons already employed in human services. Students should consult their faculty advisor or a counselor to discuss educational goals and objectives, employment opportunities, course electives, internship requirements, and potential sites for internships.

All students in the program should take the core curriculum courses in sequence as listed in the catalog. Students who receive a final grade lower than "C" in any of the core courses should repeat the course before taking further courses in the core curriculum. Students who are having academic difficulty should discuss their academic progress with a counselor or faculty advisor.

A coordinated internship in a human service agency is required in the fourth semester of the curriculum. Students should discuss the internship course with the program head, as well as select, interview, confirm a placement supervisor and site, and compete all required internship documents, the semester prior to registering for HMS 290: Coordinated Internship. Students can select from a directory of internship sites maintained by the program head or select and interview in a human services agency of their choice that formally agrees to provide the required learning experiences and supervision for 130-clock hours. Students are expected to provide their own transportation to the agency.

The purpose of the Associate of Applied Science (AAS) degree curriculum is to prepare students for employment upon graduation. Four-year college and university transfer opportunities for Associate of Applied Science degrees, if existing, are usually very specific in nature. Students may, however, substitute some courses in the AAS degree curriculum with courses that generally transfer to senior institutions. Students should consult their program advisor at the earliest possible date for further guidance and are advised to get assurances in writing in advance from the institution to which they wish to transfer.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SOC 200	Principles of Sociology	3	0	3
HMS 100	Introduction to Human Services	3	0	3
SDV 100	College Success Skills	1	0	1
MEN 101	Mental Health Skill Training I	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	TOTAL	16	0	16
ENG 11	College Composition II	3	0	3
HMS 121	Basic Counseling Skills I	3	0	3
HMS 141	Group Dynamics I	3	0	3
HMS 236	Gerontology	3	0	3
MEN 102	Mental Health Skill Training II	3	0	3
	TOTAL	15	0	15
HLT 121[1]	Introduction to Drug Use and Abuse	3	0	3
HMS 226	Helping Across Cultures	3	0	3
HMS 122	Basic Counseling Skills II	3	0	3
MTH 120[2]	Introduction to Mathematics	3	0	3
HMS 227	The Helper as Change Agent	3	0	3

HMS 142	Group Dynamics II	3	0	3
	TOTAL	18	0	18
CST 110	Introduction to Speech Communication	3	0	3
PSY 230	Developmental Psychology	3	0	3
HMS 225	Functional Family Intervention	3	0	3
HMS 266	Counseling Psychology	3	0	3
___ ___[3]	Humanities/Fine Arts Elective	3	0	3
HMS 290	Coordinated Internship in Human Services	0	15	3
	TOTAL	15	15	18

Total Minimum Credits for AAS Degree in Human Services 67

[1]An approved personal wellness elective may be substituted for this course. A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics/science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]Students may substitute either a transfer math course or BIO 101 for MTH 120. Students wishing to substitute a transfer math course should consult their advisor and transfer institution for further guidance.
[3]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics/science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Information Systems Technology

Associate of Applied Science

Specializations:

Computer Programmer
Microcomputer Technical Support (Networking)
Microcomputer Applications (Administrative/Office Applications)
Internet Applications Development (Web Design)

Purpose: The Information Systems Technology major is designed for persons who are seeking employment in business information technology, for those who desire to update their computer skills and knowledge for their current job, and for those non-information technology majors who wish to enhance their computer skills and knowledge relating to their fields of study.

Transfer Information: Four-year college and university transfer opportunities for AAS degrees, if existing, are usually very specific in nature. The Information Systems Technology AAS degree program has formal transfer articulation agreements with the Bachelor of Applied Studies degree in Information Systems at the University of Richmond, School of Continuing Studies, and the Bachelor of Science degree in Occupational and Technical Studies through Old Dominion University Teletechnet. Transfer articulation agreements are subject to change or expiration. In addition, students may substitute some courses in the AAS degree curriculum with courses that typically transfer to senior institutions. Students interested in transferring in general or transferring under a formal articulation agreement should consult their faculty advisor upon program entry for further guidance.

Occupational Objectives: The Computer Programmer specialization provides knowledge and skills in computer programming and application software development that includes occupations such as computer programmer, applications programmer, programmer/analyst, internet programmer, and related computer programming occupations. The Microcomputer Technical Support (Networking) specialization provides technical knowledge and skills in computer hardware and operating systems and network operating systems such as Microsoft and Linux that include occupations such as hardware and software support technician, network specialist, help desk specialist, and related networking occupations. The Internet Applications Development (Web Design) specialization provides knowledge and skills for web page design that includes occupations such as web page designer and webmaster and related web design occupations. The Microcomputer Applications (Administrative/Office Applications) specialization provides knowledge and skills in support of office, business, or administrative procedures that include occupations such as administrative and office support specialist, information center specialist, and related office applications occupations.

Admission Requirements: General college curricular admission

Program Notes: Students must attain the grade of "C" or higher in IT courses taken for this degree. Students must get approval from the program head or advisor in choosing program electives or substitutions. It is strongly recommended that students complete SDV 100, College Success Skills, by the end of the first semester of study at the college.

Note for students in the Microcomputer Applications (Administrative/Office Applications) Specialization: Students should consult their academic advisor prior to beginning the degree. Students interested in a career related to administrative support may want to first complete the Administrative Support Technology Certificate and then enroll in the Information Systems Technology (IST) degree program. With the help of an academic advisor, most of the courses in the certificate will apply to the IST degree program.

Note for students in the Computer Programmer Specialization: Students should consult their academic advisor prior to beginning the degree. Once students have taken ITP 120 (Java), they can then elect to continue with Java courses (ITP 220 and ITP 245) rather than continuing on with the .Net programming courses (ITP 212 or ITP 244).

All new students should take the English and mathematics placement tests immediately after applying to the college.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by successfully passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ACC 115[1]	Applied Accounting	3	0	3
SDV 100	College Success Skills	1	0	1
ENG 111	College Composition I	3	0	3
MTH 120[2]	Introduction to Mathematics	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
ITN 100	Introduction to Telecommunications	3	0	3
	TOTAL	16	0	16

CURRICULUM
Computer Programmer Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 112	College Composition II	3	0	3
BUS 125[2]	Applied Business Mathematics	3	0	3
ITP 120	Java Programming I	4	0	4
ITD 130	Database Fundamentals	4	0	4
ITP 112[3]	Visual Basic.Net I	4	0	4
	TOTAL	18	0	18
AST 205	Business Communications	3	0	3
BUS 220	Introduction to Business Statistics	3	0	3

ITP 212[3]	Visual Basic.Net II	4	0	4
ITE 221	PC Hardware and OS Architecture	4	0	4
ITP 251	Systems Analysis and Design	3	0	3
	TOTAL	17	0	17
___ ___[4]	Personal Wellness Elective	0-2	0-4	2
___ ___[4]	Humanities/Fine Arts Electives	3	0	3
ECO 120[5]	Survey of Economics	3	0	3
ITP 244	ASP.Net-Server Side Programming	3-4	0	3-4
	or			
IT_ ___[6]	Approved Information Technology Elective			
IT_ 298[7]	Seminar and Project: Capstone Course	0	4	4
	TOTAL	13-16	0-4	15-16

Total Minimum Credits for AAS Degree in Information Systems Technology, Computer Programmer Specialization 66

CURRICULUM
Microcomputer Technical Support (Networking) Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 112	College Composition II	3	0	3
BUS 125[2]	Applied Business Mathematics	3	0	3
ITN 171	UNIX I	3	0	3
ITE 221	PC Hardware and OS Architecture	4	0	4
ITN 101	Introduction to Network Concepts	4	0	4
	TOTAL	17	0	17
AST 205	Business Communications	3	0	3
ECO 120[5]	Survey of Economics	3	0	3
BUS 220	Introduction to Business Statistics	3	0	3
ITP 251	Systems Analysis and Design	3	0	3
ITN 114	Windows XP Professional	4	0	4
___ ___[4]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	16-18	0-4	18
___ ___[4]	Humanities/Fine Arts Elective	3	0	3
ITN 115	Windows 2003 Server (SER)	4	0	4
ITN 260	Network Security Basics	3	0	3
IT_ ___[6]	Approved Information Technology Elective	3-4	0	3-4
IT_ 298[7]	Seminar and Project: Capstone Course	4	0	4
	TOTAL	17-18	0	17-18

Total Minimum Credits for AAS Degree in Information Systems Technology, Microcomputer Technical Support (Networking) Specialization 68

CURRICULUM
Microcomputer Applications (Administrative/Office Applications) Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 112	College Composition II	3	0	3
BUS 125[2]	Applied Business Mathematics	3	0	3
AST 141	Word Processing I	3	0	3
ITE 221	PC Hardware and OS Architecture	4	0	4
ITE 140	Spreadsheet Software	3	0	3
___ ___[4]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	16-18	0-4	18
AST 205	Business Communications	3	0	3
BUS 220	Introduction to Business Statistics	3	0	3
ECO 120[5]	Survey of Economics	3	0	3
ITD 110	Web Page Design I	3	0	3
ITP 251	Systems Analysis and Design	3	0	3
	TOTAL	15	0	15
___ ___[4]	Humanities/Fine Arts Elective	3	0	3
ITE 150	Desktop Database Software	3	0	3
ITE 215	Advanced Computer Applications and Integration	3	0	3
IT_ ___[6]	Approved Information Technology Elective	3-4	0	3-4
	or			
AST ___	Administrative Support Technology Elective			
___ 298[7]	Seminar and Project: Capstone Course (IT or AST)	4	0	4
	TOTAL	16-17	0	16-17

Total Minimum Credits for AAS Degree in Information Systems Technology, Microcomputer Applications (Administrative/Office Applications) Specialization 65

CURRICULUM
Internet Applications Development (Web Design) Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 112	College Composition II	3	0	3
BUS 125[2]	Applied Business Mathematics	3	0	3
ITD 110	Web Page Design I	3	0	3
ITD 130	Database Fundamentals	4	0	4
ITP 120	Java Programming I	4	0	4
	TOTAL	17	0	17
AST 205	Business Communications	3	0	3
BUS 220	Applied Business Statistics	3	0	3
ECO 120[5]	Survey of Economics	3	0	3
ITE 221	PC Hardware and OS Architecture	4	0	4
ITD 210	Web Page Design II	4	0	4
	TOTAL	17	0	17
__ ___[4]	Humanities/Fine Arts Elective	3	0	3
ITP 251	Systems Analysis and Design	3	0	3

IT__ __[6]	Approved Information Technology Elective	3-4	0	3-4
IT_ 298[7]	Seminar and Project: Capstone Course	4	0	4
__ ___[4]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	13-16	0-4	15-16

Total Minimum Credits for AAS Degree in Information Systems Technology, Internet Applications Development (Web Design) Specialization 65

[1]ACC 211 (transfer accounting) may be substituted for ACC 115.
[2]Students considering transfer to a four-year college should take a transfer mathematics sequence (consult advisor).
[3]Students in the Computer Programmer specialization can elect to take additional Java programming courses instead of .Net programming courses.
[4]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[5]ECO 201 (transfer economics) may be substituted for ECO 120.
[6]One IT elective can come from any of the program areas (ITP, ITN, ITD, ITE). It is recommended that computer programmer majors select ITP 244 as their elective.
[7]This course could be substituted with an upper level IT elective with approval from the academic advisor or IT program head.

Management

Associate of Applied Science

Specializations

Retail Management
Small Business Management

Purpose: The Management degree program is designed to serve the needs of individuals presently employed in businesses and those who are interested in ownership or management of businesses. Additionally, the program is designed for those who may be seeking a promotion and have the potential for supervisory and management positions. Students will gain a solid foundation in key business areas and management. Students will develop critical thinking skills and practices to address business issues and skills in strategic management and retail.

Occupational Objectives:

Retail Management: Retailing is a dynamic industry. Every successful retail store has a manager or team of managers. This specialization focuses on preparing students for a career in either store management or sales. Retail managers must make important decisions on a daily basis, such as buying, pricing, advertising, staffing, and logistics. Students learn to direct staff and operations on a sales floor. Students also learn how to make sales, manage customer service, and maintain records. Students may obtain entry-level positions as store managers, sales managers, department managers, or assistant account representatives.

Small Business Management: Small businesses represent the majority of businesses in the United States and can be started at a low cost and on a part-time basis. This specialization will prepare students for self-employment and careers in small business. It directly focuses on the practical aspects of small business and business ownership. At the completion of the Small Business Management Specialization, students will have newly developed knowledge and skills to operate a successful business, such as a franchise, restaurant, day care center, sporting goods store, computer service business, bridal store, clothing store, printing service, or any micro-business.

Admission Requirements: General college curricular admission

Coordinated Internships: All students in the Management degree program are required to complete a coordinated internship that provides on-the-job training. The internship provides students with practical exposure to many facets of management and retailing.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM
RETAIL MANAGEMENT SPECIALIZATION

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
ITE 115	Introduction to Computer and Concepts	3	0	3
BUS 100	Introduction to Business	3	0	3
MKT 201	Introduction to Marketing	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
SDV 100	College Success Skills	1	0	1
	TOTAL	13-15	0-4	15
ENG 112	College Composition II	3	0	3
BUS 111	Principles of Supervision	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
BUS 205	Human Resource Management	3	0	3
MKT 215	Sales and Marketing Management	3	0	3
MKT 227	Merchandise Buying and Control	3	0	3
	TOTAL	18	0	18
ECO 120	Survey of Economics	3	0	3
MKT 220	Principles of Advertising	3	0	3
AST 205	Business Communication	3	0	3
MKT 216	Retail Organization and Management	3	0	3
___ ___[2]	Marketing or Business Elective	3	0	3
BUS 290[3]	Coordinated Internship	3	0	3
	TOTAL	18	0	18
ACC 115	Applied Accounting	3	0	3
MKT 260	Customer Service Management	3	0	3
MKT 271	Consumer Behavior	3	0	3
MKT 298	Seminar and Project	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	15	0	15

Total Minimum Credits for AAS Degree in Management, Retail Management Specialization 66

CURRICULUM
SMALL BUSINESS MANAGEMENT SPECIALIZATION

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
BUS 100	Introduction to Business	3	0	3
MKT 201	Introduction to Marketing	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
SDV 100	College Success Skills	1	0	1
	TOTAL	13-15	0-4	15

ENG 112	College Composition II	3	0	3
BUS 111	Principles of Supervision	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
BUS 205	Human Resource Management	3	0	3
MKT 215	Sales and Marketing Management	3	0	3
FIN 215	Financial Management	3	0	3
	TOTAL	18	0	18
ECO 120	Survey of Economics	3	0	3
BUS 125	Applied Business Mathematics	3	0	3
AST 205	Business Communication	3	0	3
BUS 165	Small Business Management	3	0	3
BUS 240	Introduction to Business Law	3	0	3
___ ___[2]	Business or Marketing Elective	3	0	3
	TOTAL	18	0	18
ACC 115	Applied Accounting	3	0	3
MKT 260	Customer Service Management	3	0	3
BUS 260	Planning for Small Business	3	0	3
BUS 290	Coordinated Internship	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	15	0	15

Total Minimum Credits for AAS Degree in Management, Small Business Management Specialization **66**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]A list of approved business and marketing electives is available in the School of Business office.
[3]MKT 290 is an equivalent course for BUS 290 for Retail Management Majors.

Management Development

Certificate

Purpose: The Certificate in Management Development is designed to serve the needs of those who may be able to benefit from supervisory training and development. Additionally, it is designed to serve those who may be seeking a promotion and have the potential for an entry-level management position.

Occupational Objectives: This program is designed to prepare students for a promotion in their current position or for employment as an entry-level manager. Specific positions include management trainee, supervisor, team leader, department head, office manager, warehouse manager, sales manager, branch manager and executive assistant.

Admission Requirements: General college curricular admission

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
BUS 100	Introduction to Business	3	0	3
BUS 125	Applied Business Mathematics	3	0	3
BUS 116	Entrepreneurship	3	0	3
	or			
BUS 117	Leadership Development			
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
ENG 111	College Composition I	3	0	3
SDV 100	College Success Skills	1	0	1
	TOTAL	16	0	16
BUS 265	Ethical Issues in Management	3	0	3
BUS 165	Small Business Management	3	0	3
	or			
BUS 205	Human Resource Management			
ECO 120	Survey of Economics	3	0	3
	or			
ECO 201	Principles of Macroeconomics			
AST 205	Business Communications	3	0	3
BUS 200	Principles of Management	3	0	3
___ ___[1]	Approved BUS Elective	3	0	3
	TOTAL	18	0	18

Total Minimum Credits for Certificate in Management Development **34**

[1]BUS 111, BUS 205, or MKT 201 are acceptable electives. Any substitute must be approved by a faculty advisor.

Medical Laboratory Technology

Associate of Applied Science

Purpose: The Medical Laboratory Technology major is designed to prepare students for certification and employment as Medical Laboratory Technicians.

Occupational Objectives: Positions for Medical Laboratory Technicians are available in hospitals, private laboratories, physicians' offices, health departments, and industrial medical laboratories.

Admission Requirements: General college curricular admission

Additional Admission Requirements: Students interested in the Medical Laboratory Technology program must submit an application to the program director for consideration prior to the deadline for acceptance in the corresponding semester. Students should first enroll in the Pre-Nursing and Allied Health Career Studies Certificate (CSC) to complete the prerequisite courses. Admission to the MDL program is competitive, and only a limited number of students will be accepted. Fully-qualified students will be ranked according to GPA, prior degrees achieved, and completed application packet. (See the program application packet for full explanation of ranking of applicants.) A minimum GPA of 2.5 is required for consideration. Completion of the Pre-Nursing and Allied Health, Medical Laboratory CSC does not guarantee admission into the AAS degree program.

Program Notes: Students admitted into this program will be approved for entry into major/clinical courses (MDL 101 and higher) when they have satisfied the following requirements:

1. Completion of one unit of high school or college level biology with a grade of "C" or better or its equivalent (JSRCC BIO 1 or 101).
2. Completion of one unit of high school chemistry with a grade of "C" or better or its equivalent (JSRCC CHM 1).
3. Completion of one unit of high school mathematics with a grade of "C" or better or the equivalent (JSRCC MTH 2).
4. Official transcripts from all previously attended high schools and colleges submitted to Central Admissions and Records.

5. Completion of all relevant JSRCC developmental coursework prescribed as a result of JSRCC placement tests.
6. Completion of health forms obtained from program head for physical and eye examinations, including any required immunizations upon entry into the first MDL course. Students must be free of any physical or mental condition that might adversely affect their performance as laboratory technicians.
7. Students must have a criminal background check performed, and possibly a drug screen, depending on clinical site requirements, prior to placement for clinical rotations.
8. All applicants to the Medical Laboratory Technology AAS degree program must declare their curriculum plan as the Pre-Nursing and Allied Health Career Studies Certificate. (Please see http://dev.jsr.vccs.edu/curriculum/programs/Pre-Nursing_AlliedHealthCSC.htm for information on this career studies certificate.) In order to be officially accepted into the Medical Laboratory Technology program, applicants will need to fulfill certain prerequisites included in the career studies certificate, complete a Medical Laboratory Technology Application packet, and submit to the program director for consideration for entry. A minimum GPA of 2.5 is required for consideration. (See Additional Admission Requirements above for full explanation.)
9. The program is open to qualified students who provide evidence of interest, aptitude, and motivation in the areas of both medical laboratory science and direct patient contact.

Essential Skills Requirements:

Students entering the Medical Laboratory Technology program must possess the following skills:

- Sufficient eyesight, including color vision, to observe microscopic cells and features within the cells, read records, manipulate equipment, and visually read procedures, graphs and test results.
- Sufficient hearing to communicate with patients and members of the health care delivery team, monitor patients using electronic equipment, and hear necessary sounds during operation of equipment.
- Satisfactory speaking, reading and writing skills to effectively communicate in English in a timely manner.
- Sufficient gross and fine motor coordination to exhibit excellent eye-hand coordination and dexterity to manipulate equipment, lift, stoop, or bend in the delivery of safe laboratory testing.
- Satisfactory physical strength and endurance to be on feet for extended periods and to move heavy equipment and supplies. Sitting, walking, bending, and reaching motions are also requirements of most positions.
- Satisfactory intellectual, emotional, and psychological health and functioning to ensure patient safety and to exercise independent judgment and discretion in performing assigned tasks. The following specific skills are required: time management of multiple priorities, multiple stimuli, and fast paced environments; analysis and synthesis; and, comprehension of detailed instructions to effectively operate in a laboratory setting.

The program provides opportunities for advanced placement based on evaluation of transcripts, clinical work experience, and training in other accredited medical laboratory education programs. Individuals interested in advanced placement should confer with the program head. Students may be required to retake all MDL courses if a delay in completion of the program is encountered. All students must pass a clinical practicum prior to placement in clinical rotations. Attendance during one summer session may be required.

Any student who receives a final grade lower than "C" in any core course (MDL prefix) must repeat the course. Students failing to obtain a "C" or better in any two MDL prefix courses will not be able to progress in the Medical Laboratory Technology program. Courses with the MDL prefix must be completed successfully prior to entering the final Coordinated Internship courses.

Malpractice insurance coverage will be furnished by the college. It is recommended that the student have appropriate health insurance. The student is responsible for covering the cost of any medical care required while in the clinical setting. Students are responsible for securing any required uniforms and lab coats as required by the clinical sites.

Upon satisfactory completion of the five-semester program, the graduate will be eligible to take Medical Laboratory Technology registry examinations (e.g., ASCP, AMT or equivalent) for national certification.

The Medical Laboratory Technology (MDL) classes may be taken for retraining by certified technologists who have been out of the field for a period of time. Permission of the program head is required prior to registration.

Courses in this program are offered on campus as well as via distance learning with in-person or proctor required. Students in the distance program must attend mandatory laboratory classes offered at the distance learning sited. Test may be taken at an approved testing center as determined by the faculty member and the program head.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical education opportunities for its students, expert clinical preceptors, and course instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments. Additionally, the college may have to change the instructor for courses after instruction has started.

Financial Requirements: In addition to the regular college tuition and fees, the Medical Laboratory program requires the items listed below:

Books and Supplies (varies):	$2,000.00
Uniforms and Shoes:	$200.00
Physical, Lab Test, Immunizations:	$300.00
Laboratory Coat:	$25.00
Background Check (varies):	$45.00
Drug Screen (varies):	$25.00
Travel to Clinical Affiliates:	Variable

Note: An additional fee for the national registry examination is not a requirement for graduation and is not included above. The fees is approximately $185.00.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

Program Accreditation and Administration: The Medical Laboratory Technology program is accredited by the National Accreditation Agency for Clinical Laboratory Sciences, 5600 N River Rd, Suite 720, Rosemont, IL 60018 (773-714-8880 and NAACLSinfo@naacls.org). The program's faculty medical director is Dr. Brad T. Siegmund, M.D., a board certified Pathologist, also serving as medical director, Southside Regional Medical Center, Petersburg, Virginia. The program director is Becky M. Clark, M.Ed., MT (ASCP), PhD, an experienced medical laboratory scientist and Certified Medical Technologist.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
*SDV 100	College Success Skills	1	0	1
*MTH 120[1]	Introduction to Mathematics	3	0	3
	or			
*MTH 163[1]	Precalculus			
*CHM 101[2]	General Chemistry	3	3	4
	or			

*CHM 111[2]	College Chemistry I			
*BIO 101	General Biology I	3	3	4
*ENG 111	College Composition I	3	0	3
MDL 101	Introduction to Medical Laboratory Techniques	2	3	3
	TOTAL	15	9	18
*ITE 115	Introduction to Computer Applications and Concepts	3	0	3
*ENG 112	College Composition II	3	0	3
*___ ___[3]	Social/Behavioral Science Elective	3	0	3
MDL 125[4]	Clinical Hematology I	2	3	3
MDL 251	Clinical Microbiology I	2	4	3
*___ ___[3]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	13-15	7-11	17
MDL 190	Coordinated Internship I-MLT Phlebotomy	0	8	2
MDL 210	Immunology and Serology	2	3	3
*___ ___[3]	Humanities/Fine Arts Elective	3	0	3
MDL 110	Urinalysis and Body Fluids	2	3	3
	TOTAL	7	14	11
MDL 216[5]	Blood Banking	2	6	4
MDL 225[6]	Clinical Hematology II	2	3	3
MDL 252[6]	Clinical Microbiology II	2	3	3
MDL 262[7]	Clinical Chemistry and Instrumentation II	3	3	4
	TOTAL	9	15	14
MDL 190[8]	Coordinated Internship II	0	12	3
MDL 290[8]	Coordinated Internship IV	0	12	3
MDL 282[8]	Clinical Laboratory Techniques- Coordinated Internship III	0	12	3
MDL 281	Clinical Correlations (online courses)	1	0	1
	TOTAL	0	36	10

Total Minimum Credits for AAS Degree in Medical Laboratory Technology 70

*This course is included in the Pre-Nursing and Allied Health Career Studies Certificate.
[1]MTH 120 meets the graduation requirement for the AAS degree in Medical Laboratory Technology. Students planning to pursue a four-year degree should take MTH 163.
[2]CHM 101 meets the graduation requirement for the AAS degree in Medical Laboratory Technology. Students planning to pursue a four-year degree should take CHM 111.
[3]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[4]This course is offered only in the spring term.
[5]MDL 210 is a prerequisite or co-requisite for MDL 216.
[6]This course is offered only in the fall term.
[7]CHM 101 or CHM 111 is a prerequisite or corequisite for MDL 262.
[8]The last semester is a 13-16 week clinical rotation at a local hospital or clinic.

Nursing

Associate of Applied Science

Purpose: The program in Nursing is designed to provide individuals from diverse backgrounds with a lifelong commitment to learning the nursing skills and knowledge needed to serve as a member of the interdisciplinary healthcare team. Upon satisfactory completion of the program, the student will be eligible to take the licensing examination for Registered Nurse (NCLEX-RN).

Occupational Objectives: Include registered nurse positions in hospitals, extended care facilities, physicians' offices, and other comparable health care facilities and agencies

Admission Requirements: General college curricular admission

Program Notes: The State Board of Nursing has the authority to deny licensure to any applicant who has violated any of the provisions of 54.1-3007 of the Code of Virginia. Any student entering the Nursing program who has committed any illegal offenses other than minor traffic violations should discuss these matters with the coordinator of the Nursing program prior to admission for clarification. Criminal background checks are now required of all entering students. Inability of a student to be placed in a clinical site due to a negative background check will result in removal from the program.

Additional Admission Requirements: Students seeking admission to the Nursing AAS degree program must have a high school diploma, a GED, or certificate of completion of home schooling. Applicants must first enroll in the Pre-Nursing and Allied Health Career Studies Certificate. (Please see http://www.jsr.vccs.edu/curriculum/programs/Pre-Nursing_AlliedHealthCSC.htm) for information on this career studies certificate.) Upon completion of the additional admission requirements listed below, students may apply to the Nursing AAS degree program.

1. Submission of official high school and college (if applicable) transcripts to Central Admissions and Records.
2. Completion of one unit of high school biology with a grade of "C" or better; BIO 1 at JSRCC is the high school equivalent course.
3. Completion of one unit of high school chemistry with a grade of "C" or better; CHM 1 at JSRCC is the high school equivalent course.
4. Completion of one unit of high school or college algebra with a grade of "C" or better; MTH 3 at JSRCC is the high school equivalent course.
5. Completion of JSRCC reading, writing, and mathematics placement tests and all required developmental courses (ENG 1, ENG 5, ENG 107, MTH 2) based on the test results. The reading and writing placement tests are waived for students with credit for college English.
6. Received a grade of "C" or better in all courses taken at JSRCC and any college courses transferred from another institution to meet the Nursing curriculum requirements.
7. Completion of the Kaplan Nursing Admission Test with a reading score of at least 45 and math score of at least 45. This test is waived for 4-year college graduates, nationally registered paramedics, and LPNs.
8. Enrollment in the Pre-Nursing and Allied Health Career Studies Certificate program. (See http://www.jsr.vccs.edu/curriculum/programs/Pre-Nursing_AlliedHealthCSC.htm)
9. A 2.5 GPA prior to admission to NUR 111.
10. Submission of application to the first clinical Nursing course after completion of the first semester of the Pre-Nursing and Allied Health Career Studies Certificate (CSC) program. Completion of the Pre-Nursing CSC does not guarantee acceptance into the Nursing Program. (Students will contact the Nursing program admissions coordinator to submit this application.)
11. Participation in a mandatory information session. These information sessions will be scheduled periodically throughout the semester.

Qualified applicants who are not admitted for the semester of their choice may reapply for future semesters for admission to the Nursing AAS Degree program. Admission to the Nursing program is competitive, and only a limited number of students will be accepted. Fully-qualified students will be ranked according to GPA, Kaplan Nursing Admission Test achievement, and their completed portfolio. Due to the high demand for nurses, budget constraints, and faculty shortage, there are a limited number of seats, and the program routinely receives more applications than can be accepted. For this reason, it is imperative that applications be complete, that all procedures be followed, and that applicants prepare themselves academically to be competitive in the review process.

Functional Skills Requirements:

Students entering the Nursing program must possess the following functional skills:

- Sufficient eyesight to observe patients, read records, manipulate equipment, and visually monitor patients in dim light.
- Sufficient hearing to communicate with patients and members of a health care delivery team, monitor patients using electronic equipment, and hear necessary sounds during operation of equipment.
- Satisfactory speaking, reading, and writing skills to effectively communicate in English in a timely manner.
- Sufficient gross and fine motor coordination to manipulate equipment, lift, stoop, or bend in the delivery of safe nursing care.
- Satisfactory physical strength and endurance to be on one's feet for extended periods and to move immobile patients.
- Satisfactory intellectual and emotional functioning to ensure patient safety and to exercise independent judgment and discretion in performing assigned tasks.

Application Deadlines for Entry into NUR 111:

For spring class, September 15 of prior year
For summer class, March 15
For fall class, April 15 of each year

Advanced Placement Options: Applicants for advanced placement in the Nursing program are required to meet all admission requirements with the exception of item #7 in the listing above - the Kaplan Nursing Admission Test. Those eligible for advanced placement are LPNs and transfer students who have completed at least one semester of nursing classes with a clinical component.

- Licensed Practical Nurses (LPNs) may qualify for advanced placement. Applications for the LPN to RN option are accepted three times per year.
- Transfer students from other Nursing programs may be accepted on a space available basis. Since applicants transferring clinical Nursing courses from other RN programs have met the admissions requirements of the transferring institution, the JSRCC Nursing program admissions requirements are waived; however high school and college transcripts must be submitted with the application. Awarding credits for specific Nursing courses will be determined by the Nursing Admission and Transfer Committee. Nursing transfer applicants must have a written statement indicating that they are in good standing and eligible to return to the previous institution.

An informational packet for the Nursing AAS Degree program with specific information related to advanced placement for LPNs is available in Room 507 on the Downtown Campus by calling program support staff at 523-5375 or 523-5476 or on the college's website, www.reynolds.edu.

Expectations. The student is required to complete a sequence of courses and learning experiences provided at the college and selected community agencies, such as acute care (hospitals) or long-term care facilities, clinics, physicians' offices, or comparable agencies and facilities. During these experiences, the Nursing faculty will observe, monitor, and evaluate the student's suitability for nursing and direct patient care.

Clinical Contracts. Individual contracts are in effect with each affiliate clinical agency, and these contracts differ in requirements for students. The general stipulations are as follows:

1. Clinical agencies reserve the right to dismiss a student fro their agency at any time with due cause. This will be done with advance notice except in an emergency.
2. Proper uniform must be worn.
3. Published hospital policies must be followed.
4. Immunizations must be current.
5. The student releases the facility, its agents, and employees from any liability for any injury or death to self or damage to personal property arising out of the clinical agreement or use of the facility.
6. The student is financially responsible for any medical care required while in the clinical setting.
7. The student must have a current American Heart Association CPR certification at the BLS level for Health Care Provider.
8. A criminal background check is required of all entering students.

Contracts for each agency are available in the School of Nursing and Allied Health Office in Room 507 and may be reviewed by students upon request.

Financial Requirements: In addition to the regular college tuition and fees, the Nursing program requires the following:

Books and Supplies	$1,500.00
Uniforms and Shoes	$200.00
Special Testing	$200.00
Physical and Dental exam (student's own physician and dentist)	$500.00
Graduation	$500.00

These costs are approximate and subject to change. The student should also consider transportation and parking costs for clinical assignments.

Computer Competency Requirement: All applicants to the Nursing program must either pass the computer competency exam, administered in the testing centers at each campus, or successfully complete ITE 115 or CSC 155 or equivalent prior to entering NUR 111. Students not passing the computer competency exam may retake the exam only once.

Program Accreditation: The program is approved by the Virginia State Board of Nursing and accredited by the National League for Nursing Accrediting Commission (NLNAC). The NLN Accrediting Commission may be contacted at 61 Broadway, 33rd Floor, New York, NY 10006, (800) 669-1656, ext. 153.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
*ENG 111	College Composition I	3	0	3
*MTH 126[1]	Mathematics for Allied Health	3	0	3
*NAS 161	Health Science I	3	3	4
*SDV 100	College Success Skills	1	0	1
*PSY 230	Developmental Psychology	3	0	3
	TOTAL	13	3	14
___ ___[2]	Humanities/Fine Arts Elective	3	0	3
___ ___	Elective	2	0	2
*NAS 162	Health Science II	3	3	4
*SOC 200	Principles of Sociology	3	0	3
	TOTAL	11	3	12
NUR 111[3,4,5]	Nursing I	4	9	7
NUR 226[4]	Health Assessment	2	3	3
	TOTAL	6	12	10
NUR 245	Maternal/Newborn Nursing	2	6	4
NUR 137	Principles of Pharmacology II	2	0	2
NUR 108	Nursing Principles and Concepts I	3	6	5
	TOTAL	7	12	11
NUR 247	Psychiatric/Mental Health Nursing	2	6	4
NUR 254	Dimensions of Professional Nursing	1	0	1
NUR 109	Nursing Principles and Concepts II	3	9	6
	TOTAL	6	15	11
NUR 246	Parent/Child Nursing	2	6	4
NUR 298	Seminar and Project	1	0	1

NUR 208	Acute Medical - Surgical Nursing	3	9	6
	TOTAL	6	15	11

Total Minimum Credits for AAS Degree in Nursing **69**

*This course is included in the Pre-Nursing and Allied Health Career Studies Certificate.
[1] Students planning on pursuing a Bachelor's of Science degree in Nursing are advised to talk to their Nursing advisor about taking MTH 240 instead of MTH 126.
[2] A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[3] All courses denoted with * must be taken prior to NUR 111. Students must pass the computer competency exam or complete ITE 115 or CSC 155 prior to NUR 111. CPR certification (American Heart Association, BLS for the Health Care Provider") is required prior to NUR 111.
[4] NUR 111 and NUR 226 must be taken together. Each semester must be taken in sequence; however, courses within a semester may be taken in any order.
[5] NUR 111 fulfills the general education personal wellness requirement.

Opticianry

Associate of Applied Science

Purpose: The Opticianry degree program is a two-year curriculum that is designed to prepare individuals in the art and science of all phases of the making and fitting of eyeglasses and contact lenses: surfacing, finishing, eyeglass dispensing, contact lens fitting and dispensing.

Occupational Objectives: Graduation from the program may lead to one of the following occupational goals: Optician, Private Practitioner, Ophthalmic Dispenser, Optical Laboratory Manager, Contact Lens Technician, Branch Manager, Optical Laboratory Technician, Ophthalmic Sales Representative, and Ophthalmic Research Technician.

Admission Requirements: General college curricular admission

Program Notes: Students admitted into this program will be approved for entry into major/clinical courses (Optical Theory I or higher) when they have satisfied the following requirements:

1. Completion of one unit of high school algebra with a grade of "C" or better or its equivalent (JSRCC MTH 3).
2. Completion of all JSRCC developmental coursework prescribed as a result of JSRCC placement tests.
3. All applicants to the Opticianry AAS degree program must declare their curriculum plan as the Pre-Nursing and Allied Health Career Studies Certificate prior to acceptance into the program. (Please see http://dev.jsr.vccs.edu/curriculum/programs/PreNursing_AlliedHealthCSC.htm for information on this career studies certificate.) In order to be officially accepted into the Opticianry program, applicants must meet with the program head to review their records and to discuss the requirements of a career in Opticianry. It is also recommended that students have completed one unit each of high school biology and physics.

Courses in the program are offered on campus and via distance learning with in-person or proctor required. Students in the distance program must attend mandatory laboratory classes offered at the distance learning sites. Tests may be taken at an approved testing Center as determined by the faculty member and the program.

Students acquire direct patient-related practical skills by taking clinical course work in eyeglass and contact lens clinical sites in which actual patients are serviced. Students also learn business-related expertise by participating in a clinical management sequence and specific business course work. Students who receive a final grade lower than "C" in any of the Opticianry courses must obtain permission from the program head to continue the major in Opticianry. Graduation from this program prepares one for the licensing examination given by the Virginia State Board of Opticians for registration as a registered optician and certified contact lens fitter.

Financial Requirements: In addition to the regular college tuition and fees, the following expenses may be required for the Opticianry program:

Eye examination (by the 4th semester)	$35-85
Personal pair of safety glasses (Non-RX safety eyewear are available for on-campus labs)	$15-50
White Laboratory Coat	$20-45
Name Badge	$8-10
USB Headset (for distance courses only)	$25-75
Mailing costs (for distance clinical courses only)	$ varies by location
Testing center fees	varies by location*

Note: The above costs are approximate, clinical site dependent, and subject to change.
*Distance learning students are required to take proctored exams and complete projects to be sent back to the college throughout the curriculum. Each student must have an approved proctor and, if there is a fee, the student is required to pay for the services they decide to use.

Computer Competency Requirement:

Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Those students not passing the computer competency exam may retake the exam only once.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical education opportunities for its students, expert clinical preceptors, and course instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments. Additionally, the college may have to change the instructor for courses after instruction has started.

Accreditation: The Opticianry program is accredited by the Commission on Opticianry Accreditation, PO Box 142, Florence IN, 47020; info@coaccreditation.com; 703-468-0566 voice; 888-306-9036 fax.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
*SDV 100	College Success Skills	1	0	1
*MTH 120	Introduction to Mathematics	3	0	3
OPT 121	Optical Theory I	3	0	3
OPT 150	Optical Laboratory Theory I	3	0	3
OPT 152	Optical Laboratory Clinical I	0	6	3
*___ ___[1]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	10-12	6-10	15
*ENG 111	College Composition I	3	0	3
*ITE 115	Introduction to Computer Applications and Concepts	3	0	3
OPT 122	Optical Theory II	3	0	3
OPT 151	Optical Laboratory Theory II	3	0	3
OPT 153	Optical Laboratory Clinical II	0	6	3
	TOTAL	12	6	15
OPT 154	Optical Business Management	3	0	3
OPT 160	Optical Dispensing Theory I	3	0	3
OPT 165	Optical Dispensing Clinical I	0	4	2

OPT 273	Contact Lens Theory I	3	0	3
	TOTAL	9	4	11
*ENG 112	College Composition II	3	0	3
OPT 105	Anatomy, Physiology, and Pathology of the Eye	3	0	3
OPT 260	Optical Dispensing Theory II	3	0	3
OPT 271	Optical Dispensing Clinical II	0	12	3
OPT 274	Contact Lens Theory II	3	0	3
	TOTAL	12	12	15
OPT 253	Current Optical Trends	2	0	2
OPT 280	Contact Lens Clinical	0	6	3
OPT 272	Optical Dispensing Clinical III	0	12	3
*___ __[1]	Social/Behavioral Science Elective	3	0	3
*___ __[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	8	18	14

Total Minimum Credits for AAS Degree in Opticianry **70**

*This course is included in the Pre-Nursing and Allied Health Career Studies Certificate.
[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Paralegal Studies

Associate of Applied Science

Specializations:

General Practice
Litigation

Purpose: There is a need in the greater Richmond area and throughout Virginia for paralegals. There is a concomitant need to train those who are presently employed in legal secretarial positions who wish to become paralegals. The Paralegal Studies Associate of Applied Science degree program is designed to meet these educational needs by preparing individuals to perform as legal assistants or paralegals under the supervision of an attorney. The program is approved by the American Bar Association.

Occupational Objectives: Paralegal or Legal Assistant for private law firms, administrative agencies, other governmental agencies, mortgage companies, title insurance companies, and corporations.

Admission Requirements: General college curricular admission

Program Notes: It is strongly recommended that students meet with the program head before registering for classes, or as early as possible in their first semester of enrollment. Students whose placement test results require ENG 1 or ENG 4 must successfully complete this course prior to admission to any Paralegal Studies course. ENG 107, if recommended, is a co-requisite to LGL 110, or permission of the instructor. Any student who receives a final grade lower than "C" in any of the courses in the Paralegal Studies curriculum must obtain permission from the program head to continue as a student in the Paralegal Studies program. Students will be required by the program head to repeat LGL-prefix courses and ENG 111-112 courses where grades below "C" are received. Legal assistants, paralegals, and other non-lawyers are prohibited from practicing law without a license. Paralegals and legal assistants may not provide legal services directly to the public, except as permitted by law.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115, Introduction to Computer Applications and Concepts. Students can also meet this requirement by successfully passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

Transfer of Legal Specialty Courses: The Paralegal Studies program accepts the transfer of legal specialty course credits completed at other institutions as long as such institution is accredited by the appropriate regional accrediting body, such as the Southern Association of Colleges and Schools, the program is approved by the American Bar Association, and the program head determines that the course objectives and practical skills are comparable to the course offered by the Paralegal Studies program at J. Sargeant Reynolds Community College. For any specialty credits awarded at an institution that is accredited by the appropriate regional accrediting body, but not approved by the American Bar Association, such credits must also be from an institution within the Virginia Community College System or be awarded from an institution that has an articulation agreement with J. Sargeant Reynolds Community College. In all cases, the grade for such course must be a "C" or better, and no such credit will be given to any courses awarded at an institution outside of the United States. No credit will be awarded from an institution not accredited by the appropriate regional accrediting agency. No credit by examination or portfolio is allowed for legal specialty course work, and no more than fifty percent (50%) of legal specialty credits required by the Paralegal Studies program shall be accepted for transfer credit.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
SDV 100	College Success Skills	1	0	1
LGL 110	Introduction to Law and the Legal Assistant	3	0	3
LGL 117	Family Law	3	0	3
LGL 125	Legal Research	3	0	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
	TOTAL	16-18	0-4	18
ENG 112	College Composition II	3	0	3
LGL 126	Legal Writing	3	0	3
LGL 218	Criminal Law	3	0	3
LGL 235	Legal Aspects of Business Organizations	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
ITE 115[2]	Introduction to Computer Applications and Concepts	3	0	3
	TOTAL	18	0	18

CURRICULUM
General Practice Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
LGL 295[3]	Information Systems for the Paralegal	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
LGL 210	Virginia and Federal Procedure	3	0	3
LGL 228	Real Estate Settlement Practicum	3	0	3
CST 105	Oral Communication	3	0	3
	TOTAL	15	0	15
LGL 225	Estate Planning and Probate	3	0	3
LGL 226	Real Estate Abstracting	3	0	3
LGL 238	Bankruptcy	3	0	3
LGL 290[4]	Coordinated Internship	0	12	3

___ ___[5]	Elective	3	0	3
	TOTAL	13	12	16

Total Minimum Credits for AAS Degree in Paralegal Studies

CURRICULUM
Litigation Specialization

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
LGL 295[3]	Information Systems for the Paralegal	3	0	3
LGL 210	Virginia and Federal Procedure	3	0	3
LGL 215	Torts	3	0	3
LGL 216	Trial Preparation and Discovery Practice	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
	TOTAL	15	0	15
LGL 245[6]	Post-trial and Appellate Practice	3	0	3
LGL 220	Administrative Practice and Procedure	3	0	3
LGL 290[4]	Coordinated Internship	0	12	3
LGL 200	Ethics for the Legal Assistant	1	0	1
CST 105	Oral Communication	3	0	3
___ ___[5]	Elective	3	0	3
	TOTAL	13	12	16

General Practice Specialization **67**
Total Minimum Credits for AAS Degree in Paralegal Studies
Litigation Specialization **67**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.
[2]Keyboarding skills are a prerequisite for ITE 115.
[3]LGL 125 and ITE 115 are prerequisites for this course.
[4]Must be taken at the end of the program; approval of the program head is required.
[5]Prior to selecting an elective, students planning to seek a bachelor's degree should acquaint themselves with the requirements for the major at the college or university to which transfer is intended.
[6]LGL 210 and LGL 216 are prerequisites to LGL 245.

Practical Nursing

Certificate

Purpose: The Practical Nursing Certificate program is designed to prepare a nurse who participates as an integral member of the nursing or health care team, involved in health promotion and maintenance activities for the client. The practical nurse provides direct care for individual clients experiencing common, well-defined health problems with predictable outcomes, in structured health care settings with supervision. Upon satisfactory completion of the program, the student will be eligible to take the national examination for licensure as a Practical Nurse (LPN).

Occupational Objectives: LPN positions in long-term care, hospitals, physicians' offices and other comparable structured health care facilities and agencies

Admission Requirements: General college curricular admission

Program Notes: Students must have a high school diploma, GED, or certificate of completion of home schooling to be admitted to the Practical Nursing Certificate program. There are two stages of acceptance into the program. First, all applicants to the program must declare their curriculum plan as the Pre-Practical Nursing and Dental Assisting Career Studies Certificate. (Please see http://www.jsr.vccs.edu/curriculum/plan_info.htm for information on this career studies certificate.) The following steps must be completed as part of the first stage of the acceptance process:

1. Submit official high school transcript, GED, or certificate of completion of home schooling to Central Admissions and Records.
2. Submit official college transcripts, if applicable, to Central Admissions and Records. Courses taken at other colleges that contain equivalent content and credits may transfer to satisfy a program requirement.
3. Complete JSRCC's placement tests in reading, writing, and mathematics and all developmental coursework prescribed as a result of the placement tests.

The second stage of the acceptance process requires that all individuals interested in entering the Practical Nursing Certificate program submit an application to the Practical Nursing program head and meet the following requirements:

1. The application can be submitted after completion of all required developmental courses. Students may apply for the Practical Nursing Certificate program while enrolled in the Pre-Practical Nursing and Dental Assisting Career Studies Certificate. While it is advisable that students complete all courses in the Pre-Practical Nursing and Dental Assisting Career Studies Certificate prior to acceptance into the Practical Nursing program, this is not required. There are two courses that must be completed prior to beginning the Practical Nursing Certificate program: ENG 111 and NAS 150 (or NAS 161 and 162 in lieu of NAS 150).
2. All applicants must also successfully complete the NET Pre-Admission Exam. (Four-year college graduates are exempt from this requirement.) Students must have a minimum score of 45 in reading and math to be eligible for admission to the program. Students who do not score at that level on the NET exam will be required to complete specific remedial courses with a grade of "C" or better. Upon completion of the prescribed remedial courses, students must retake the NET Exam to achieve an acceptable score on the second attempt to qualify for the program.
3. Students must achieve a grade of "C" or better in all courses completed in the Pre-Practical Nursing and Dental Assisting Career Studies Certificate program and have a minimum cumulative GPA of 2.5 to be accepted into the Practical Nursing Certificate program.
4. All applicants must obtain CPR certification by the America Heart Association at the BLS level prior to beginning the first course in the Practical Nursing program.

Legal Requirements: The Virginia Board of Nursing has the authority to deny licensure to an applicant who has violated any of the provisions of 54-367.32 of the code of Virginia. Any student entering the program who has committed illegal offenses other than minor traffic violations should discuss these matters with the program head prior to admission for clarification. Criminal background checks are required of all applicants to the Practical Nursing program.

Clinical facilities used by the program have additional requirements for students that include updated immunizations, dress codes, and conformance with professional standards.

Pre-Entrance Health Requirement: Upon granting approval for entry into PNE 141, the program head will give students forms for physical and dental examinations, including required immunizations. Students must be free of any physical or mental condition that might adversely affect their performance in clinical courses or as nurses. Medical/dental forms must be submitted in complete form at the beginning of PNE 141. Validation of freedom from tuberculosis is required annually of all practical nursing students through skin testing or chest x-ray.

Functional Skills Requirements: Students entering the Practical Nursing program must possess the physical ability to 1) aid in the lifting and moving of patients; 2) hear audible alarms and sounds; 3) auscultate certain physical parameters, such as blood pressure, heart and lung sounds; and 4) interact effectively with patients, families, and health care team members. This includes the following:

- Sufficient eyesight to observe patients, read records, manipulate equipment, and visually monitor patients in dim light.

- Sufficient hearing to communicate with patients and members of a health care delivery team, monitor patients using electronic equipment, and hear necessary sounds during operation of equipment.
- Satisfactory speaking, reading, and writing skills to effectively communicate in English in a timely manner.
- Sufficient gross and fine motor coordination to manipulate equipment, lift, stoop, and bend in the delivery of safe nursing care.
- Satisfactory physical strength and endurance to be on one's feet for extended periods and to move immobile patients.
- Satisfactory intellectual and emotional functioning to ensure patient safety and to exercise independent judgment and discretion in performing assigned tasks.

Academic Performance Policy: A minimum grade of "C" is required for all courses in the Practical Nursing curriculum. Students must obtain permission from the program head to continue in the program under the following conditions: 1) repeating a nursing course with a grade below "C" or 2) withdrawal from a nursing course. In accordance with VCCS policy, a student may not normally enroll in the same course more than twice. Further policies for the program are listed in the Practical Nursing Student Handbook, which is given to students upon acceptance to the Practical Nursing Certificate program.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical education opportunities for its students, expert clinical preceptors, and course instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments. Additionally, the college may have to change the instructor for courses after instruction has started.

Computer Competency Requirement: All applicants to the Practical Nursing program must either pass the computer competency exam, administered in the testing centers at each campus, or successfully complete ITE 115 or CSC 155 prior to entering PNE 141. Students not passing the computer competency exam may retake the exam only once. Students who do not pass the exam after retaking it once must then complete ITE 115 or CSC 155.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
*ENG 111	College Composition I	3	0	3
*SDV 100	College Success Skills	1	0	1
*NAS 150[1]	Human Biology	3	0	3
*PSY 230	Developmental Psychology	3	0	3
	TOTAL	10	0	10
PNE 141[2]	Nursing Skills I	2	3	3
PNE 142[3]	Nursing Skills II	1	6	3
PNE 173[4]	Pharmacology for Practical Nurses	2	0	2
PNE 116	Normal Nutrition	1	0	1
	TOTAL	6	9	9
PNE 162	Nursing in Health Changes II	5	15	10
	TOTAL	5	15	10
PNE 163	Nursing in Health Changes III	4	12	8
PNE 145	Trends in Practical Nursing	1	0	1
	TOTAL	5	12	9

Total Minimum Credits for Certificate in Practical Nursing 38

*This course is included in the Pre-Practical Nursing and Dental Assisting Career Studies Certificate.

[1]Students planning to continue to the Nursing AAS Degree program are strongly encouraged to take NAS 161-162 instead of NAS 150. NAS 161 has prerequisites of high school biology and chemistry.
[2]Students must pass the computer competency exam or complete ITE 115 or CSC 155 and must be CPR certified in Basic Life Support for Health Care Providers through the American Heart Association prior to taking PNE 141.
[3]PNE 141 is an eight-week course that can be taken in the first session of the semester, and must be passed before taking PNE 142 and 173 offered in the second eight-week session.
[4]Students satisfactorily completing PNE 141 and enrolled in PNE 142 and PNE 173 will be eligible to take the CNA Exam.

Respiratory Therapy

Associate of Applied Science

Purpose: The associate degree program in Respiratory Therapy is designed to prepare students for roles as contributing members of the modern health care team concerned with treatment, management, and care of patients with breathing, cardiovascular, and sleep abnormalities.

Occupational Objectives: Occupational objectives include employment opportunities as respiratory therapy practitioners in hospitals, clinics, research facilities, home care agencies, and alternate care sites. The respiratory therapy practitioner will be able to administer gas therapy, humidity therapy, aerosol therapy, and hyperinflation therapy; assist with mechanical ventilation, special therapeutic and diagnostic procedures, cardiopulmonary resuscitation, airway management techniques; and, follow therapeutic protocols. The respiratory therapy practitioner works under the supervision of a physician.

Admission Requirements: General college curricular admission

Program Notes: The Respiratory Therapy program offers courses in both traditional and distance learning formats. All distance learning courses within the curriculum are classified as distance learning with in-person or proctor required. This means that most of the instruction for the course is delivered online and that students will be required to make a limited number of trips to a campus site for labs, presentations and other class activities or to a community site for clinicals or internships. Also, some courses may require proctored testing that can be done at JSRCC's testing centers, testing sites at other VCCS colleges, or an approved site outside of the state of Virginia.

In order to complete the Respiratory Therapy program, students will be required to attend both day and evening classes.

All applicants to the Respiratory Therapy AAS Degree program must declare their curriculum plan as Pre-Respiratory Therapy, which is located under the Pre-Nursing and Allied Health Career Studies Certificate (CSC) program. (Please see http://www.jsr.vccs.edu/curriculum/plan_info.htm for information on this career studies certificate.)

In order to be officially accepted into the Respiratory Therapy AAS Degree program, applicants will need to fulfill all prerequisites included in the Pre-Respiratory Therapy CSC. The CSC must be completed by the end of the spring semester in the year in which the student is applying for acceptance into the associate degree program. Applicants must also meet with the program head or director of clinical education to review their records prior to completing the CSC. The program head will notify students by the end of April regarding acceptance.

The Pre-Respiratory Therapy Career Studies Certificate includes the following courses: ENG 111, Social/Behavioral Science Elective, Humanities/Fine Arts Elective, NAS 161, NAS 162, SDV 100, RTH 102, and RTH 121.

Students admitted into the Respiratory Therapy program must also complete the requirements listed below before entry into major/clinical courses (RTH 110 or higher).

1. Complete the mathematics placement test and complete through MTH 3 if developmental mathematics is required based on placement test results. Students with transferable college algebra with a grade of "C" or better will be exempt from the mathematics placement test. If developmental math is required, the student needs to successfully complete Math 3.
2. Complete one unit of high school or college biology and one unit of high school or college chemistry with a grade of "C" or better (JSRCC BIO 1 and CHM 1).
3. Attain a minimum cumulative grade point average of 2.5 in all Pre-Respiratory Therapy CSC courses.
4. Achieve a grade of "C" or better in NAS 161 and 162.

Computer Competency Requirement: All applicants must complete the college's computer competency exam, administered in the testing centers at each campus, prior to acceptance in the Respiratory Therapy program. Students not passing the computer competency exam will be given one additional opportunity to successfully pass the exam. Those students who do not pass the exam will be required to complete ITE 115 (Introduction to Computer Applications and Concepts) or CSC 155 (Computer Concepts and Applications) or equivalent courses prior to entering clinical.

A student must obtain permission from the program head to continue in the Respiratory Therapy program under the following conditions: (1) a grade below "C" is earned in any major course, (2) overall GPA falls below a 2.0 average in any one semester.

Students who have been accepted into the program will be placed in clinical courses (RTH 190 and higher) when they have also done the following:

1. Submitted completed physical and dental examination forms provided by the program, which includes a completed immunization schedule.
2. Submitted documentation of a completed and current CPR Healthcare Providers Certification (American Heart or American Red Cross), with bi-annual recertification.
3. Completed a certified background check.(The inability of a student to be placed in a clinical site due to a negative background check will result in removal from the program.)
4. Secured transportation to and from facilities used for clinical experiences.

The above requirements are at the student's expense.

Mentorship Opportunities: There is a mentorship in association with clinical courses for qualifying students on a space available basis.

Functional Skills Requirements: Students entering the Respiratory Therapy program must possess the following functional skills:

- Sufficient eyesight, including color vision, to observe patients, perform and visualize patient assessments, manipulate equipment, and visually read patient records, graphs and test results.
- Sufficient hearing to communicate with patients and members of the health care delivery team, monitor patients using electronic equipment, and hear necessary sounds during operation of equipment.
- Satisfactory speaking, reading, and writing skills to effectively communicate in English in a timely manner.
- Sufficient gross and fine motor coordination to exhibit excellent eye-hand coordination and dexterity to manipulate equipment, lift, stoop, and bend in the delivery of safe patient care.
- Satisfactory physical strength and endurance to be on one's feet for extended periods and to move heavy equipment, patients, and supplies. Sitting, walking, bending, and reaching motions are also requirements for respiratory therapists.
- Satisfactory intellectual, emotional, and psychological health and functioning to ensure patient safety and to exercise independent judgment and discretion in performing assigned tasks.
- Time management of multiple priorities, multiple stimuli, and fast paced environments.
- Analysis and critical thinking skills.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical education opportunities for its students, expert clinical preceptors, and course instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures, and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments as well as possible instructor changes after course instruction has started.

Length of Time for Program Completion: Once students are admitted into the Respiratory Therapy program they must complete the program within 3 1/2 years of their initial RTH class. Should a student leave the program within the above time period and subsequently wish to be readmitted, the student may reapply to the program. Re-entry into the program will be determined on a space available basis and only if the student can graduate within the above timeframe. If a student is readmitted into the program, an objective evaluation will be used to determine placement within the curriculum. A student must obtain permission from the program head to take courses out of the sequence in the catalog.

Clinical Contracts: Individual contracts are in effect with each affiliate clinical agency, and these contracts differ in requirements for students. The general stipulations are as follows:

1. Clinical agencies reserve the right to dismiss a student from their agency at any time with due cause. This will be done with advanced notice except in an emergency.
2. Proper uniform must be worn.
3. Published hospital policies must be followed.
4. Immunizations must be current.
5. The student releases the facility, its agency, and employees from any liability for any injury or death to self or damage to personal property arising out of the clinical agreement or use of the facility.
6. The student is financially responsible for any medical care required while in the clinical setting.
7. The student must have a current American Heart Association or American Red Cross CPR certification at the BLS level for Heath Care Provider.
8. A criminal background check is required of all entering students.

Financial Requirements:

Books and Supplies	$1000
Miscellaneous Fees (Exit Exams and Seminar)	$500
Identification Badge	$15
Uniform (approximately)	$60
Physical and Dental Examination	Varies

Note: The above costs are approximate and subject to change.

Program Exit Exam: Every student is required to pass two comprehensive exit exams before being added to the National Board for Respiratory Care's electronic eligibility database. Exam costs are to be paid by the student.

Program Accreditation and Practitioner Certification: The Respiratory Therapy program is accredited through the Committee on Accreditation for Respiratory Care,1248 Harwood Road, Bedford, TX 76021-4244, (817)283-2835. Graduates of this program must first pass the Certified Respiratory Therapist (CRT) exam before being eligible for the Registered Respiratory Therapist (RRT) exam administered by the National Board for Respiratory Care, Inc. Successful completion of the CRT credentialing exam is required before state licensure can be obtained.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
*RTH 102	Integrated Sciences for Respiratory Care	3	0	3
RTH 110	Fundamental Theory and Procedures for Respiratory Care	2	6	4
*RTH 121	Cardiopulmonary Science I	3	0	3
RTH 135[1]	Diagnostic and Therapeutic Procedures I	1	3	2
RTH 145	Pharmacology for Respiratory Care I	1	0	1
*ENG 111	College Composition I	3	0	3
*SDV 100	College Success Skills	1	0	1
	TOTAL	14	9	17
RTH 112	Pathology of the Cardiopulmonary System	3	0	3
RTH 131	Respiratory Care Theory and Procedures I	3	3	4
RTH 190[1]	Coordinated Practice in Respiratory Therapy-NCC I & II	0	20	4
*NAS 161	Health Science I	3	3	4
	TOTAL	9	26	15
RTH 132	Respiratory Care Theory and Procedures II	3	3	4
RTH 222	Cardiopulmonary Science II	3	0	3
RTH 190	Coordinated Practice in Respiratory Therapy-NCC Internship	0	10	2
*NAS 162	Health Science II	3	3	4
RTH 215	Pulmonary Rehabilitation	1	0	1
	TOTAL	10	16	14
RTH 265	Current Issues in Respiratory Care	2	0	2
RTH 290	Coordinated Practice in Respiratory Therapy-ACC/NPCC I & II	0	20	4
RTH 223	Cardiopulmonary Science III	2	0	2
RTH 226	Theory of Neonatal and Pediatric Respiratory Care	2	0	2
*___ ___[3]	Social/Behavioral Science Elective	3	0	3
*___ ___[3]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	12	20	16
RTH 236	Critical Care Monitoring	2	3	3
RTH 290	Coordinated Practice in Respiratory Therapy-ACC/NPCC III & IV	0	15	3
	TOTAL	2	18	6
RTH 227	Integrated Respiratory Therapy Skills II	2	0	2
RTH 290	Coordinated Practice in Respiratory Therapy-ACC/NPCC Internship	0	10	2
	TOTAL	2	10	4

Total Minimum Credits Required for AAS Degree in Respiratory Therapy 72

*This course is included in the Pre-Respiratory Therapy Career Studies Certificate. This information can be found in the catalog under the Pre-Nursing and Allied Health section of the Career Studies Certificate Requirements.

[1]RTH 135 fulfills the general education personal wellness requirement.

[2]Students must pass the computer competency exam or complete either ITE 115 or CSC 155 prior to entering clinical.

[3]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Career Studies Certificate Requirements

American Sign Language

Career Studies Certificate

Purpose: This curriculum prepares individuals to communicate in American Sign Language (ASL), primarily with persons who are deaf or hard of hearing. Students also study the U.S. deaf community from a cultural perspective.

Occupational Objectives: The American Sign Language Career Studies Certificate leads to employment opportunities primarily as a classroom aide or teacher assistant in "Deaf and Hard of Hearing" or "Hearing Impaired" K-12 programs. The content learned and skills attained may also form a foundation for further study in numerous careers including the following: sign language interpretation, teacher of "Deaf and Hard of Hearing" children, American Sign Language instructor, linguistics, and deaf studies. With an additional year of "pre-interpreting" course work at J. Sargeant Reynolds Community College, students are prepared to engage in direct communication in ASL with clients in another career of preference (e.g., nurse, real estate agent, paramedic, etc.).

Note: Preparation to become a sign language interpreter, as opposed to engaging in direct communication using ASL, is facilitated through completion of the ASL-English Interpretation AAS.

Admission Requirements: General college curricular admission

Program Notes: Students must take ASL 100, Orientation to Acquisition of ASL as an Adult, during the first semester of study. Students must also begin language study with ASL 101 (ASL I), unless placed into a more appropriate level by the ASL and IE program head via the ASL placement test. Students must attain a grade of "C" or better as a final grade in a prerequisite ASL course before enrolling in a more advanced ASL course.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ASL 100	Orientation to Acquisition of ASL as an Adult	2	0	2
ASL 101	American Sign Language I	4	0	4
ASL 102	American Sign Language II	4	0	4
ASL 125	History and Culture of the Deaf Community I	3	0	3
ASL 201	American Sign Language III	3	0	3
ASL 202	American Sign Language IV	3	0	3
ASL 220[1]	Comparative Linguistics: ASL & English	3	0	3
ASL 261	American Sign Language V	4	0	4
___ ___[2]	Approved General Education Elective	3	0	3
	TOTAL	29	0	29

Total Minimum Credits for Career Studies Certificate in American Sign Language **29**

[1]ASL 102 is the prerequisite for ASL 220.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111 or an oral communication course: CST 100, CST 105, or CST 110.

Computer-Aided Design Specialist

Career Studies Certificate

Purpose: The rapidly evolving field of computer technology has had a dramatic impact on the architectural/engineering professions. The Computer-Aided Design Specialist Career Studies Certificate was created to meet the contemporary graphic needs of architectural and industrial design firms. This program provides the student with thorough training in two- and three-dimensional computer graphics, including studies in visualization and animation.

Occupational Objectives: CAD Technician, Forensic Computer Technician, Presentation (Rendering) Graphics Specialist, and possibly CAD Manager

Admission Requirements: General college curricular admission

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
CSC 155	Computer Concepts and Applications	3	0	3
DRF 231	Computer-Aided Drafting I	2	2	3
DRF 232	Computer-Aided Drafting II	2	2	3
DRF 238	Computer-Aided Modeling and Rendering	2	2	3
ARC 211	Computer-Aided Drafting Applications	2	2	3
	or			
CIV 270	Utilizing Surveying Software			
DRF 233	Computer-Aided Drafting III	2	2	3
___ ___[1]	General Education Elective	3	0	3
	TOTAL	16	10	21

Total Minimum Credits for Career Studies Certificate in Computer-Aided Design Specialist **21**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111.

Criminal Justice

Career Studies Certificate

Purpose: This program provides an overview of criminal justice and basic police officer training. It is designed for those who have an interest in understanding societal issues associated with crime and the work performed by criminal justice professionals. The curriculum examines various approaches to understanding crime. Topics include maintaining law and order, police-citizen conflict, crime prevention, collecting evidence, conducting criminal investigations, the juvenile justice system, and the interface between police and other criminal justice agencies. Issues pertaining to criminal justice and law enforcement in a modern society are addressed. Students completing this career studies certificate may apply the courses completed to the Administration of Justice AAS degree.

Occupational Objectives: The Criminal Justice Career Studies Certificate prepares students for entry-level careers with general law enforcement responsibilities. This career studies certificate may lead to civilian and sworn positions including dispatchers, police officers, correctional officers, or security personnel.

Admission Requirements: General college curricular admission

Program Notes: Certain illegal activities and/or convictions may prohibit employment in law enforcement. Employing agencies may require additional training such as completion of a Policy Academy for some positions. Employing agencies may have minimum age requirements for some positions and may require a physical examination.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
ADJ 100	Survey of Criminal Justice	3	0	3
ADJ 105	The Juvenile Justice System	3	0	3
ADJ 228	Narcotics and Dangerous Drugs	3	0	3
ADJ 128	Patrol Administration and Operations	3	0	3
CST 100	Principles of Public Speaking	3	0	3
	TOTAL	18	0	18

Total Minimum Credits for Career Studies Certificate in Criminal Justice **18**

Dental Assisting

Career Studies Certificate

Purpose: To prepare students to perform the following services under the supervision of a dentist: chairside assisting, preparation of impression and restorative materials, dental health education, patient care as authorized by the Virginia Board of Dentistry.

Occupational Objectives: This program is designed to provide essential technological and practical knowledge required for a dental assistant to perform efficiently in a dental office. Training experiences in nearby dental clinics and private dental offices are provided.

Admission Requirements: General college curricular admission

Financial Requirements: In addition to the regular college tuition and fees, the Dental Assisting program requires the items listed below. Costs are approximate.

Textbooks	$300.00 (per semester)
Uniforms, Lab Coat, Clinic Coat, Safety Glasses, Name Tag, and Hepatitis Vaccine Series	$300.00
Background Check	$43.00
The following expense is optional:	
Student Membership in the ADAA	$35.00

Program Notes: This program accepts new students in the spring and fall semesters of each year. Students admitted into Dental Assisting will be approved for entry into major/clinical courses (DNA 103 and higher) when they have satisfied the following requirements:

1. A personal interview with the program head or a designated faculty member.
2. A grade of "C" or better in each course of the Dental Assisting curriculum.
3. Completion of all JSRCC developmental coursework prescribed as a result of JSRCC placement tests.
4. Completion of health forms provided by the program head for physical and dental examinations.

Any student whose final grade falls below a "C" in any course must obtain permission from the program head to continue the major in Dental Assisting. Students are responsible for transportation to and from facilities used for clinical experiences. DNA courses are sequential unless otherwise determined by the program head.

Any student enrolled in this career studies certificate program and planning to transfer into the Dental Assisting Certificate program (120), must at that time complete the requirements of the Pre-Practical Nursing and Dental Assisting Career Studies Certificate before transferring. (Please see http://www.jsr.vccs.edu/curriculum/programs/Pre-PracticalNursing_DentalAssistingCSC.htm for information.)

Program Accreditation: The Dental Assisting Career Studies Certificate is not accredited by the Commission on Dental Accreditation. Courses can be transferred into the Dental Assisting Certificate Program (120), which is accredited by the Commission on Dental Accreditation.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
DNA 100	Introduction to Oral Health Professions	1	0	1
DNA 103	Introduction to Oral Health	1	0	1
DNA 108	Dental Science	2	3	3
DNA 109	Infection Control	2	3	3
DNA 110	Dental Materials	2	3	3
DNA 113	Chairside Assisting I	2	3	3
DNA 190[1]	Coordinated Internship in Dental Assisting	0	8	2
DNA 119	Dental Therapeutics	1	0	1
DNA 120	Community Health	1	0	1
DNA 114[1]	Chairside Assisting II	2	6	4
DNA 140	Externship	1	12	5
	TOTAL	15	38	27

Total Minimum Credits for Career Studies Certificate in Dental Assisting **27**

[1]DNA 190 or program head approval is required prior to taking DNA 114.

Dental Laboratory Technology

Career Studies Certificate

Purpose: This program provides basic job skills training designed for employees of dental laboratories. The program concentrates on current acceptable techniques and their application. Specific studies deal with anatomy and physiology, dental materials, complete dentures, partial dentures, crown and bridge, and ceramics. Individuals involved in the field should consider this program as a means to advance their careers and develop their job skills.

Occupational Objectives: Dental Laboratory Technology Career Studies Certificate graduates have employment opportunities in commercial dental laboratories, private dental offices, hospital dental clinics, military base dental laboratories, and dental products manufacturers as technical researchers and technical sales representatives. In addition, dental laboratory technology graduates have the opportunity to own and operate commercial dental laboratory businesses.

Admission Requirements: General college curricular admission

Program Notes: In addition to meeting the requirements for general college curricular admission, those interested in entering this program must be engaged in work in a dental laboratory. Courses in the program are offered on campus as well as via distance learning with in-person or proctor required. Students in the distance program must attend mandatory laboratory classes offered at the distance learning sites. Tests may be taken at an approved testing center as determined by the faculty member and the program head.

Program Accreditation: The Dental Laboratory Technology Career Studies Certificate is not accredited by the Commission on Dental Accreditation. Courses can be transferred into the Dental Laboratory Technology AAS degree program (117), which is accredited by the Commission on Dental Accreditation.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
DNL 110	Dental Laboratory Materials	2	3	3
DNL 120	Dental Anatomy and Physiology	2	3	3
DNL 130[1]	Introduction to Complete Dentures	3	9	6
DNL 135[1]	Introduction to Removable Partial Dentures	3	9	6
DNL 138[1]	Introduction to Fixed Prosthodontics	3	9	6
DNL 220[1]	Introduction to Dental Ceramics	3	9	6
DNL 240	Comprehensive Review in Dental Laboratory Technology	2	0	2
___ ___[2]	General Education Elective	3	0	3
	TOTAL	15	24	23

Total Minimum Credits for Career Studies Certificate in Dental Laboratory Technology 23

[1]Participants in the Dental Laboratory Technology option are required to complete two of these dental technology specialty courses (12 credits). Selection requires approval of the program head.
[2]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111.

Early Childhood Education

Career Studies Certificate

Purpose: The program is designed to provide students with the basic skills needed in the care and development of young children in a variety of child care settings. The program provides training appropriate for persons entering the field of early childhood education, as well as in-service training for persons presently working in the field who wish to upgrade their skills. The program also offers a well-organized course of study for parents who wish to increase their understanding of child development.

Occupational Objectives: Early childhood educators are primarily employed in child care centers and nursery schools. However, they may also be employed in: recreational centers , kindergartens (as assistants), hospital playrooms ,out-of-school care programs, centers for special needs children, early intervention programs, family support programs and resource centers, women's shelters and/or speech therapy offices. The training and qualifications required of childcare workers vary widely. Each state has its own licensing requirements that regulate caregiver training.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, a personal interview with the program head is recommended. Students must attain a grade of "C" or higher in all courses with CHD, HLT, and PSY prefixes.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
CHD 120	Introduction to Early Childhood Education	3	0	3
CHD 145	Teaching Art, Music, and Movement to Children	2	2	3
CHD 205	Guiding the Behavior of Children	3	0	3
HLT 135	Child Health and Nutrition	3	0	3
___ ___[1]	General Education Elective	3	0	3
	TOTAL	14	2	15

Total Minimum Credits for Career Studies Certificate in Early Childhood Education 15

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111.

Early Childhood Education – Advanced

Career Studies Certificate

Purpose: The program is designed to provide students with the additional early childhood skills needed in the care and development of young children in a variety of child care settings. The program provides training appropriate for persons presently working in the field who wish to continue to upgrade their knowledge and skills in child development and care. The program also offers a well-organized course of study for parents who wish to increase their understanding of child development.

Occupational Objectives: Early childhood educators may be employed in child care centers and nursery schools and kindergartens, recreational centers, hospital playrooms, out-of-school care programs, centers for special needs children, early intervention programs, family support programs and resource centers, women's shelters and/or speech therapy offices. Experienced early childhood educators advance to supervisory positions or start their own businesses. The training and qualifications required of childcare workers vary widely. Each state has its own licensing requirements that regulate caregiver training.

Admissions Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, those interested in entering the Early Childhood Education - Advanced Career Studies Certificate should hold the Early Childhood Education Career Studies Certificate or be approved by the program head. A personal interview with the program head is recommended. Students must attain a grade of "C" or higher in all courses with CHD and PSY prefixes.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
CHD 118	Language Arts for Young Children	2	2	3
CHD 146	Math, Science, and Social Studies for Children	2	2	3
CHD 210	Introduction to Exceptional Children	3	0	3
PSY 235	Child Psychology	3	0	3
	TOTAL	10	4	12

Total Minimum Credits for Career Studies Certificate in Early Childhood Education – Advanced 12

Early Childhood School-Age Child Care

Career Studies Certificate

Purpose: This career studies certificate is designed to train students who want to work with school-age children, ages 6-12, in before and after-school programs. The curriculum also offers an organized course of study for those who wish to increase their knowledge and understanding of child development.

Occupational Objectives: Employment opportunities for graduates include

positions as teachers, teacher aides, and program leaders and directors in settings that provide before and after-school care for school-age children, including day care centers, schools, churches and synagogues, youth organizations, and camps.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, a personal interview with the program head is recommended. Students must attain a grade of "C" or higher in all courses with CHD, HLT, and PSY prefixes.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
CHD 220	Introduction to School-Age Child Care	3	0	3
CHD 225	Curriculum Development for School-Age Child Care	3	0	3
CHD 230	Behavior Management for School-Age Child Care	3	0	3
CHD 235	Health and Recreation for School-Age Child Care	3	0	3
___ ___[1]	Approved General Education Elective	3	0	3
HLT 105	Cardiopulmonary Resuscitation	1	0	1
HLT 106	First Aid and Safety	2	0	2
	TOTAL	18	0	18

Total Minimum Credits for Career Studies Certificate in Early Childhood School-Age Child Care **18**

1A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111 or CST 100.

eCommerce

Career Studies Certificate

Purpose: This certificate program is designed to meet the needs of employed persons desiring to extend their knowledge of internet marketing concepts, as well as those seeking training to prepare for employment in the marketing industry and eCommerce.

Occupational Objectives: Advertising Manager, Media Buyer, Salesperson, Internet Retailer, Web Designer, Marketing Manager, Retail Manager, and Marketing Consultant

Admission Requirements: General college curricular admission

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
ITD 110	Web Page Design I	3	0	3
ITD 210	Web Page Design II	4	0	4
MKT 201	Introduction to Marketing	3	0	3
MKT 271	Consumer Behavior	3	0	3
MKT 281	Principles of Internet Marketing	3	0	3
MKT 282	Principles of eCommerce	3	0	3
MKT 283	Social, Ethical and Legal Issues in eCommerce	3	0	3
	TOTAL	28	0	28

Total Minimum Credits for Career Studies Certificate in eCommerce **28**

Electronics Technology

Career Studies Certificate

Purpose: This program is designed to provide basic skill development and competence for students seeking a career in electronics or related technologies.

Occupational Objectives: Students completing this program will have basic skills for an entry-level job in electronics technology or a related field, such as industrial electronics, PC hardware upgrade and repair, or home entertainment/security systems.

Admission Requirements: General college curricular admission

Program Notes: In addition to general college curricular admission, applicants to this program will have (a) completed placement testing and (b) met with their advisor to establish a planned course of study prior to being allowed to register for courses. Proficiency in arithmetic is required to begin this program, and students not meeting this requirement must successfully complete MTH 2 or an equivalent course before beginning the ETR course sequence. MTH 3 (Algebra I) and MTH 4 (Algebra II), or equivalent, must be completed as co-requisites for other courses in the program. Students interested in proceeding beyond the career studies certificate should consult with an advisor or counselor at the beginning of the program.

Computer Competency: It is important that students demonstrate computer competency early in this program by either completing ITE 115 or passing the college's computer competency exam, administered in the testing centers on each campus. Students passing the computer competency exam will receive college credit for ITE 115. Students not passing the computer competency exam may retake the exam only once.

Recommended course sequencing, by semester, is shown by the numbers 1, 2, and 3 in parentheses after the course title in the curriculum listing below. Students should allow time in their planned course sequencing for any developmental mathematics or English courses that may be required to meet program prerequisites or co-requisites.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I (1)	3	0	3
ETR 101[1,2]	Electrical/Electronic Calculations I (1)	2	3	3
SDV 100	College Success Skills (1)	1	0	1
ETR 164[1,2]	Upgrading and Maintaining PC Hardware (1)	2	2	3
ITE 115	Introduction to Computer Applications and Concepts (1)	3	0	3
ETR 113[2,3]	DC and AC Fundamentals I (2)	2	3	3
ETR 203[2,4]	Electronic Devices I (2)	2	3	3
IND 116	Applied Technology (2)	2	2	3
ETR 214[2,6,7]	Advanced Circuits and New Devices (3)	2	0	2
ETR 273[2,5]	Computer Electronics I (3)	3	3	4
	TOTAL	22	16	28

Total Minimum Credits for Career Studies Certificate in Electronics Technology **28**

[1]The co- or prerequisite for ETR 101 is MTH 3 or equivalent. The prerequisite for ETR 164 is MTH 2 or equivalent, or permission of the ETR 101 instructor.
[2]Electronics courses must be taken in a sequence that satisfies prerequisite and corequisite requirements.
[3]The co- or prerequisite for ETR 113 is MTH 4 or equivalent.
[4]The co- or prerequisite for ETR 203 is ETR 113.
[5]The prerequisite for ETR 273 is ETR 113.

[6]ETR 214 is an introductory course covering new areas of electronics, such as home entertainment/security systems and alternative energy systems.
[7]Students may substitute ETR 239 for ETR 214.

Emergency Medical Services EMT – Basic

Career Studies Certificate

Purpose: This program prepares students to become Emergency Medical Technicians at the entry level.

Occupational Objectives: Certified Emergency Medical Technician – Basic

Admission Requirements: General college curricular admission

Program Notes: Students desiring to further their emergency medical training and capabilities should consider the Emergency Medical Services EMT – Intermediate Career Studies Certificate or Emergency Medical Services – Paramedic Associate of Applied Science degree after completing this certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
EMS 111[1,2,4]	Emergency Medical Technician – Basic or	4	4	6
EMS 112[1]	Emergency Medical Technician – Basic I and	2	2	3
EMS 113[3,4]	Emergency Medical Technician – Basic II	2	3	3
EMS 120[4]	Emergency Medical Technician – Basic Clinical	1	0	1
NAS 161	Health Science I	3	3	4
SDV 100	College Success Skills	1	0	1
	TOTAL	9	7	12

Total Minimum Credits for Career Studies Certificate in Emergency Medical Services EMT – Basic **12**

[1]Required CPR Certification is included as part of the course.
[2]EMS 111 is a one semester certification course. EMS 112 and 113 are taken over two semesters. EMS 111 is equivalent to taking both EMS 112 and EMS 113.
[3]EMS 112 is a prerequisite for EMS 113.
[4]EMS 120 must be taken concurrently with EMS 111 and EMS 113.

Emergency Medical Services EMT – Intermediate

Career Studies Certificate

Purpose: This program prepares students to become Emergency Medical Technicians at the National EMT – Intermediate level.
Occupational Objectives: Certified National Registry of EMTs Emergency Medical Technician – Intermediate

Admission Requirements: General college curricular admission

Program Notes: Applicants must have completed the Emergency Medical Services EMT – Basic Career Studies Certificate or hold a current Commonwealth of Virginia EMT – Basic Certification and have the permission of the program head. Students desiring to further their emergency medical training and capabilities should consider the EMS – Paramedic Associate of Applied Science degree after completing this career studies certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
EMS 151	Introduction to Advanced Life Support	3	2	4
EMS 170	ALS Internship I	0	3	1
EMS 153	Basic ECG Recognition	2	0	2
EMS 157	ALS – Trauma Care	2	2	3
EMS 155	ALS – Medical Care	3	2	4
EMS 159	ALS – Special Populations	1	2	2
EMS 172	ALS Clinical Internship II	0	6	2
EMS 173	ALS Field Internship II	0	3	1
	TOTAL	11	20	19

Total Minimum Credits for Career Studies Certificate in Emergency Medical Services EMT– Intermediate **19**

Emergency Medical Services EMT – Paramedic

Career Studies Certificate

Purpose: This program prepares current EMT – Intermediate students to bridge to an EMT at the Paramedic level.

Occupational Objectives: National Registry of EMTs – Paramedic

Admission Requirements: General college curricular admission

Program Notes: Applicants must have completed the Emergency Medical Services EMT – Intermediate Career Studies Certificate or hold a current Virginia or NREMT – Intermediate certification and have the permission of the program head. Students desiring to further their emergency medical training and capabilities should consider the EMS - Paramedic Associate of Applied Science degree after completing this certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
EMS 205	Advanced Pathophysiology	3	0	3
EMS 207	Advanced Patient Assessment	2	2	3
EMS 242	ALS Clinical Internship III	0	6	2
EMS 243	ALS Field Internship III	0	6	2
EMS 201	EMS Professional Development	2	0	2
EMS 209	Advanced Pharmacology	3	2	4
EMS 211	Operations	1	2	2
EMS 244	ALS Clinical Internship IV	0	3	1
EMS 245	ALS Field Internship IV	0	3	1
	TOTAL	11	24	20

Total Minimum Credits for Career Studies Certificate in Emergency Medical Services EMT Paramedic **20**

Entrepreneurship in Small Business

Career Studies Certificate

Purpose: This program is designed for persons who wish to acquire the knowledge and skills necessary to organize and manage a small business. This program addresses management concerns unique to small businesses including organizational structure, marketing plans, financial analysis, tax requirements, legal issues, and computer applications.

Occupational Objectives: This program trains students to own, operate and manage a small business with 100 or fewer employees.

Admission Requirements: General college curricular admission

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
BUS 100	Introduction to Business	3	0	3
BUS 116	Entrepreneurship	3	0	3
BUS 165	Small Business Management	3	0	3
ACC 115	Applied Accounting	3	0	3
AST 205	Business Communications	3	0	3
FIN 215	Financial Management	3	0	3
MKT 215	Sales and Marketing Management	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
	or			
BUS 226	Computer Business Applications	2	2	3
	TOTAL	23-24	0-2	24

Total Minimum Credits for Career Studies Certificate in Entrepreneurship in Small Business **24**

Floral Design

Career Studies Certificate

Purpose: This program is intended primarily for students who are seeking employment in the floral design business or who are presently employed in this field and wish to upgrade or enhance their skills. The program is also available for those who wish to establish credentials to demonstrate their expertise for exhibiting and judging.

Occupational Objectives: Careers include serving as an owner/operator of an independent florist business; a floral department manager/staff in a supermarket or garden center; and a floral designer in partnership with a caterer, wedding coordinator or corporate client. There is also tremendous growth in production, sale and display of cut flowers Farmer's Markets.

Admission Requirements: General college curricular admission

Program Notes: Students need good manual dexterity skills to fulfill job requirements in almost all applications of floral design training. In addition, an eye for color and an appreciation for design elements are very helpful.

All courses required for completion of this certificate can be applied to the AAS degree in Horticulture Technology.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
HRT 260	Introduction to Floral Design	2	2	3
HRT 266	Advanced Floral Design	2	2	3
HRT 268	Advanced Floral Design Applications	2	2	3
HRT 110	Principles of Horticulture	3	0	3
___ ___[1]	Approved General Education Elective	3	0	3
	TOTAL	12	6	15

Total Minimum Credits for Career Studies Certificate in Floral Design **15**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111.

Health Care Technician

Career Studies Certificate

Purpose: This program is designed to provide course work preparation for those seeking entry level employment in the health care field. To become a certified nurse aide, a student must satisfactorily complete at least NUR 27 and then pass a national exam that includes both written and practical exams.

Students who complete all courses in this career studies certificate will be eligible for advanced placement into the Practical Nursing Certificate program after completing the CNA Transition Course (PNE 99) and all other entrance requirements for the Practical Nursing Certificate program.

Occupational Objectives: The program includes basic training for persons seeking to become nurse aides or home health aides working in private homes, residential living facilities, nursing homes, retirement and life care communities, and hospitals.

Admission Requirements: General college curricular admission

Program Notes: Students will be required to repeat any course in which a grade lower than "C" is received.

Criminal background checks may be required of all applicants to the Health Care Technician program.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical education opportunities for its students, expert clinical preceptors, and course instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments. Additionally the college may have to change the instructor for courses after instruction has started.

Pre-Entrance Health Requirements: Applicants must be free of any physical or mental condition that might adversely affect safety and performance as a nurse. Validation of freedom from tuberculosis is required annually of all students through skin testing or chest X-ray.

Functional Skills Requirement: Students entering the Health Care Technician program must possess the physical ability to 1) aid in the lifting and moving of patients; 2) hear audible alarms and sounds; 3) auscultate certain physical parameters, such as blood pressure, heart and lung sounds; and 4) interact effectively with patients, families and health care team members. This includes the following:

- Sufficient eyesight to observe patients, read records, manipulate equipment, and visually monitor patients in dim light.
- Sufficient hearing to communicate with patients and members of a health care delivery team, monitor patients using electronic equipment, and hear necessary sounds during operation of equipment.
- Satisfactory speaking, reading, and writing skills to effectively communicate in English in a timely manner.
- Sufficient gross and fine motor coordination to manipulate equipment, lift, stoop, or bend in the delivery of safe nursing care.
- Satisfactory physical strength and endurance to be on one's feet for extended periods and to move immobile patients.

- Satisfactory intellectual and emotional functioning to ensure patient safety and to exercise independent judgment and discretion in performing assigned tasks.

Clinical facilities used by the program may mandate additional requirements for students that include updated immunizations, dress codes and conformance with professional standards.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
HLT 105[1]	Cardiopulmonary Resuscitation	1	0	1
ENG 111[2]	College Composition I	3	0	3
NUR 27	Nurse Aide	3	6	5
SDV 100	College Success Skills	1	0	1
NAS 150[3]	Human Biology	3	0	3
PSY 230	Developmental Psychology	3	0	3
NUR 135[4]	Drug Dosage Calculations	2	0	2
HLT 143	Medical Terminology	3	0	3
	TOTAL	19	6	21

Total Minimum Credits for Career Studies Certificate in Health Care Technician **21**

[1]Must be American Heart Association BLS level or above.
[2]Must successfully complete college reading and writing placement tests or required remediation.
[3]Students wishing to enter the registered Nursing AAS degree program should take NAS 161 in place of NAS 150.
[4]Students must complete the math placement test with a passing score or complete MTH 2 prior to taking this course.

Health Records Coding Technician

Career Studies Certificate

Purpose: This program is designed to provide the technical knowledge and skills, along with the practical experience, needed for employment as a health records coding technician. Assisted by specialized computer equipment and software, health records coding technicians analyze and interpret the patient's record to determine the proper standardized code that represents the patient's diagnosis and treatment. These codes may be used to create accurate standardized records, to maintain health statistics, or for billing purposes. The need for health records coding technicians will increase rapidly in the next ten years as the health field continues to move toward a greater focus on health care analysis and reimbursement challenges. Upon satisfactory completion of the program, the students will be eligible to take national accrediting exams offered by AHIMA and the AAPC.

Occupational Objectives: Health records coding technicians work in hospitals, doctors' offices, legal firms, insurance companies, government agencies, and as independent freelance consultants.

Admission Requirements: General college curricular admission

Program Notes: This program is not accredited; however, upon completion of this program, students will be prepared to take the national certification exams. Students with significant on-the-job training may be given permission by the program head to enroll in select courses only. These students will not earn the career studies certificate from the college, but will be prepared to take the national certification exams. Due to faculty availability, each course may not be offered every semester.

Computer Competency Requirement: All applicants must pass the computer competency exam, administered in the testing centers at each campus, or successfully complete ITE 115 or CSC 155 or equivalent prior to completion of the program. Students not passing the computer competency exam may retake the exam only once.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
NAS 150	Human Biology	3	0	3
HLT 143	Medical Terminology I	3	0	3
HIM 150	Health Records Management	3	0	3
	TOTAL	9	0	9
HIM 110[1]	Introduction to Human Pathology	3	0	3
NUR 136[1]	Principles of Pharmacology I	1	0	1
HIM 253[2]	Health Records Coding	4	0	4
HIM 226	Legal Aspects of Health Record Documentation	2	0	2
	TOTAL	10	0	10
HIM 143[3]	Managing Electronic Billing in Medical Practice	2	0	2
HIM 151[3]	Reimbursement Issues in Medical Practice Management	2	0	2
HIM 254[4]	Advanced Coding and Reimbursements	4	0	4
HIM 295[4]	Topics in Advanced Health Records Coding	2	0	2
	TOTAL	10	0	10

Total Minimum Credits for Career Studies Certificate in Health Records Coding **29**

[1]HIM 110 and NUR 136 must be taken concurrently; prerequisites are HLT 143 or NAS 150.
[2]Prerequisites are NAS 150 and HLT 143; pre- or corequisites are HIM 110 and NUR 136.
[3]HIM 143 and HIM 151 must be taken concurrently.
[4]Pre– or corequisite for HIM 295 is HIM 254.

Hospitality Leadership

Career Studies Certificate

Purpose: The Hospitality Leadership program is intended to develop the leadership and human resources management capabilities of individuals employed in hotels and restaurants.

Occupational Objectives: This instruction will enable individuals with hospitality operations experience to succeed in supervisory and managerial positions.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission, students must demonstrate college level proficiency in reading and writing. Proficiency may be demonstrated by the following:

1. Submission of official college transcripts that record completion of a college level composition course, or
2. Submission of SAT or ACT scores, taken within the past five years, at the following levels:
   - ACT Verbal 19
   - SAT Verbal 480 (taken on or after April 1, 1995)
   - SAT Critical Reading 480 (taken on or after March 1, 2005, or
3. Successful completion of the COMPASS English placement test for ENG 111, with a satisfactory score on the reading test. Students with deficiencies in reading or writing may require developmental studies to be commenced during their first semester of enrollment, and completed sequentially every subsequent semester until all developmental requirements are satisfied.

This course of study yields multiple awards. Students who complete this program earn the Human Resources Management Certificate of Specialization from the Educational Institute (EI) of the American Hotel & Lodging Association (AH&LA), in addition to the Hospitality Leadership Career Studies Certificate from the college. Additionally, students who complete this program are eligible to enter the EI Certified Hospitality Supervisor (CHS) program and sit for the EI Certified Hospitality Supervisor (CHS) Examination. Acceptance into the CHS program allows six months from successful completion of the CHS examination to secure full-time employment as a qualifying supervisor in the hospitality industry and to have held one or more such positions for a minimum of 3 months. A qualifying supervisor is a person who supervises two or more individuals; has job duties that are at least 20 percent supervisory in nature and include such tasks as scheduling, training, interviewing, disciplining, inspecting, and conducting performance reviews; makes decisions and judgment calls while performing daily duties; and has input on hiring and firing decisions within a department. Once the EI verifies this experience through a letter from a candidate's employer(s), the individual will be awarded the CHS designation.

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

The recommended 2-semester sequence can be viewed at http://www.reynolds.edu/hospitality/hospitalityleadershipsequence.htm.

Faculty provide one-on-one advising to enhance student success. Students pursuing this certificate must schedule and complete an entry interview with their faculty advisor. Once enrolled, students must meet with their advisor every semester to review their scheduling strategy and status toward graduation.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
HRI 241	Supervision in the Hospitality Industry	3	0	3
HRI 275	Hospitality Law	3	0	3
HRI 242	Training and Development for the Hospitality Industry	3	0	3
	TOTAL	9	0	9
___ ___[1]	General Education Elective	3	0	3
HRI 140	Fundamentals of Quality for the Hospitality Industry	3	0	3
HRI 255	Human Resources Management and Training for Hospitality and Tourism	3	0	3
	TOTAL	9	0	9

Total Minimum Credits for Career Studies Certificate in Hospitality Leadership **18**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111.

Hotel Rooms Division Management

Career Studies Certificate

Purpose: The Hotel Rooms Division Management program is intended to develop the management capabilities of individuals employed in the rooms division of a lodging property.

Occupational Objectives: This instruction will enable individuals with rooms division employment experience to succeed in rooms division managerial positions.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission, students must demonstrate college level proficiency in reading and writing. Proficiency may be demonstrated by the following:

1. Submission of official college transcripts that record completion of a college level composition course, or
2. Submission of SAT or ACT scores, taken within the past five years, at the following levels:
   - ACT Verbal 19
   - SAT Verbal 480 (taken on or after April 1, 1995)
   - SAT Critical Reading 480 (taken on or after March 1, 2005, or
3. Successful completion of the COMPASS English placement test for ENG 111, with a satisfactory score on the reading test. Students with deficiencies in reading or writing may require developmental studies to be commenced during their first semester of enrollment, and completed sequentially every subsequent semester until all developmental requirements are satisfied.

This course of study yields multiple awards. Students who complete this program earn the Rooms Division Management Certificate of Specialization from the Educational Institute (EI) of the American Hotel & Lodging Association (AH&LA), in addition to the Hotel Rooms Division Management Career Studies Certificate from the college. Additionally, students who complete this program are eligible to enter the EI Certified Rooms Division Executive (CRDE) program and sit for the EI Certified Rooms Division Executive (CRDE) Examination. Plan C Eligibility for CRDE Certification may be obtained by a combination of experience in a qualifying rooms division management position and completion of the EI Rooms Division Management Certificate of Specialization.

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

The recommended 2-semester sequence can be viewed at http://www.reynolds.edu/hospitality/roomsdivisionsequence.htm.

Faculty provide one-on-one advising to enhance student success. Students pursuing this certificate must schedule and complete an entry interview with their faculty advisor. Once enrolled, students must meet with their advisor every semester to review their scheduling strategy and status toward graduation.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
HRI 265	Hotel Front Office Operations	3	0	3
HRI 241	Supervision in the Hospitality Industry	3	0	3
HRI 275	Hospitality Law	3	0	3
	TOTAL	9	0	9
___ ___[1]	General Education Elective	3	0	3
HRI 160	Executive Housekeeping	3	0	3
HRI 240	Managing Technology in the Hospitality Industry	3	0	3
	TOTAL	9	0	9

Total Minimum Credits for Career Studies Certificate in Hotel Rooms Division Management **18**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111.

Information Systems Technology Computer Programmer

Career Studies Certificate

Purpose: The Computer Programmer Career Studies Certificate is designed to provide knowledge and skills in computer programming and application software development.

Occupational Objectives: Computer Programmer, Applications Programmer, Programmer/Analyst, Internet Programmer, and related computer occupations

Admission Requirements: General college curricular admission

Program Notes: Students should demonstrate proficiency in keyboarding before enrolling in the required IT courses. Students must have a strong foundation in computer concepts, Windows, word processing, spreadsheet, database, and presentation software and also have the ability to access information on the internet. Students must attain the grade of "C" or higher in IT courses taken for this certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
ITP 120	Java Programming I	4	0	4
ITP 112	Visual Basic.Net I	4	0	4
ITP 212	Visual Basic.Net II	4	0	4
ITP 251	Systems Analysis and Design	3	0	3
ITD 130	Database Fundamentals	4	0	4
ITP 244	ASP.Net--Server Side Programming	4	0	4
___ ___[1]	Information Technology Elective	3	0	3
	TOTAL	29	0	29

Total Minimum Credits for Career Studies Certificate in Computer Programmer 29

[1]The Information Technology elective can be selected from one of the following areas: Information Technology Design (ITD), Information Technology Essentials (ITE), Information Technology Networking (ITN), or Information Technology Programming (ITP). Information Systems Technology

Information Systems Technology Internet Applications Development (Web Design)

Career Studies Certificate

Purpose: The Internet Applications Development (Web Design) Career Studies Certificate provides knowledge and skills for web page design.

Occupational Objectives: Web Page Designer, Webmaster

Admission Requirements: General college curricular admission

Program Notes: Students enrolling in this program must have a strong foundation in computer concepts, Windows, word processing, spreadsheet, database, and presentation software and the ability to access information on the internet. Students needing this basic computer foundation could take ITE 115, Introduction to Computer Applications and Concepts. Students must attain the grade of "C" or higher in IT courses taken for this certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
ITP 120	Java Programming I	4	0	4
	or			
ITP 112	Visual Basic.Net I			
ITE 221	PC Hardware and OS Architecture	4	0	4
ITD 110	Web Page Design I	3	0	3
ART 133	Visual Arts Foundation	2	4	4
	or			
ITD 112	Designing Web Page Graphics	3	0	3
ITD 130	Database Fundamentals	4	0	4
ITD 210	Web Page Design II	4	0	4
___ ___[1]	Information Technology Elective	3	0	3
	TOTAL	27-28	0-4	28-29

Total Minimum Credits for Career Studies Certificate in Internet Applications Development (Web Design) 28

[1]The Information Technology elective can be selected from one of the following areas: Information Technology Design (ITD), Information Technology Essentials (ITE), Information Technology Networking (ITN), or Information Technology Programming (ITP).

Information Systems Technology Microcomputer Applications

Career Studies Certificate

Purpose: This program is designed to provide microcomputer education and training required by business and industry. Specifically, this includes skills necessary to function in today's highly technical and computerized environment. Students will use microcomputer application software to develop business applications.

Occupational Objectives: Information Center Microcomputer Specialist, Microcomputer Training Specialist, Microcomputer Sales, and related microcomputer occupations

Admission Requirements: General college curricular admission

Program Notes: Students should demonstrate proficiency in keyboarding before enrolling in the required IT courses; otherwise, enrollment in AST 114 is required. Students must attain the grade of "C" or higher in IT courses taken for this certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
AST 114[1]	Keyboarding for Information Processing	0-1	0	0-1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
AST 141	Word Processing I	3	0	3
ITE 140	Spreadsheet Software	3	0	3
ITE 150	Desktop Database Software	3	0	3
ITE 221	PC Hardware and OS Architecture	4	0	4
ITE 215	Advanced Computer Applications and Integration	3	0	3

ITD 110	Web Page Design I	3	0	3
___ ___[2]	Information Technology Elective	3	0	3
	TOTAL	25-26	0	25-26

Total Minimum Credits for Career Studies Certificate in Microcomputer Applications **25**

[1]Students without keyboarding skills should enroll in AST 114 prior to or concurrent with ITE 115.
[2]The Information Technology elective can be selected from one of the following areas: Information Technology Design (ITD), Information Technology Essentials (ITE), Information Technology Networking (ITN), or Information Technology Programming (ITP).

Information Systems Technology Microsoft Network Administration

Career Studies Certificate

Purpose: This program provides the information to enhance the student's networking skills and prepares the student to study for the core exams that may lead to the Microsoft Certified Technology Specialists (MCTS) certification and the Microsoft Certified IT Professional (MCITP) certification.

Occupational Objectives: Server Administrator, Network Administrator, Technical Support Analyst, and Entry Level Systems Engineer

Admission Requirements: General college curricular admission

Program Notes: Students enrolling in this program must have a strong foundation in Computer Concepts, PC Hardware and OS Architecture, and Telecommunications. Students must attain the grade of "C" or higher in IT courses taken for this career studies certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ITN 110	Client Operating System (Windows 7)	4	0	4
ITN 111	Server Administration (Windows 2008)	4	0	4
ITN 112	Network Infrastructure (Windows 2008)	4	0	4
ITN 113	Active Directory (Windows 2008)	4	0	4
___ ___[1]	Information Technology Elective	3	0	3
	TOTAL	19-20	0	19-20

Total Minimum Credits for Career Studies Certificate in Microsoft Network Administration **19**

[1]The Information Technology elective can be selected from one of the following areas: Information Technology Design (ITD), Information Technology Essentials (ITE), Information Technology Networking (ITN), or Information Technology Programming (ITP).

Information Systems Technology Network Engineering

Career Studies Certificate

Purpose: This program provides information to enhance the student's networking skills and prepares the student to study for the Cisco Certified Entry Networking Technician (CCENT), the Cisco Certified Network Associate (CCNA), and the Cisco Certified Network Associate Security (CCNA Security) certifications.

Occupational Objectives: Network Administrator, Technical Support Analyst, Entry Level Systems Engineer, and Network Security Specialist

Admission Requirements: General college curricular admission

Program Notes: Students enrolling in this program must have a strong foundation in Computer Concepts, PC Hardware and OS Architecture, and Telecommunications. Students must attain the grade of "C" or higher in IT courses taken for this certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ITN 154	Networking Fundamentals-Cisco	4	0	4
ITN 155	Introductory Routing-Cisco	4	0	4
ITN 156	Basic Switching and Routing -Cisco	4	0	4
ITN 157	WAN Technologies-Cisco	4	0	4
ITN 295	Network Security-Cisco	4	0	4
___ ___[1]	Information Technology Elective	3-4	0	3-4
	TOTAL	23-24	0	23-24

Total Minimum Credits for Career Studies Certificate in Network Engineering **23**

Information Systems Technology Network Fundamentals

Career Studies Certificate

Purpose: This program provides instruction in beginning networking skills and prepares students to study for the A+ and the Network+ certification exams. The program also prepares students for the college's administrative level career studies certificates, Microsoft Network Administration and General Network Administration.

Occupational Objectives: Hardware Technician, Entry Level Help Desk Technician, and Entry Level Technical Support

Admission Requirements: General college curricular admission

Program Notes: Students enrolling in this certificate should have a strong foundation in microcomputer applications for word processing, spreadsheet, database, and Windows. Students must attain the grade of "C" or higher in IT courses taken for this certificate.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ITE 221	PC Hardware and OS Architecture	4	0	4
ITN 100	Introduction to Telecommunications	3	0	3
ITN 101	Introduction to Network Concepts	4	0	4
ITN 260	Network Security Basics	3	0	3
ITN 171	UNIX I	3	0	3
___ ___[1]	Information Technology Elective	3	0	3
	TOTAL	20	0	20

Total Minimum Credits for Career Studies Certificate in Network Fundamentals **20**

[1]The Information Technology elective can be selected from one of the following areas: Information Technology Design (ITD), Information Technology Essentials (ITE), Information Technology Networking (ITN), or Information Technology Programming (ITP).

Legal Office Technology

Career Studies Certificate

Purpose: The Legal Office Technology Career Studies Certificate program is designed to prepare students for employment in the legal office and in other offices where legal services are required.

Occupational Objectives: Legal Secretary, Calendar Clerk, Document Processor, Records Clerk, Administrative Assistant, and Court Clerk

Admission Requirements: General college curricular admission

Program Notes: Students will be required to repeat English and major courses in which grades lower than "C" are received. Major courses are those with prefixes of LGL or AST.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
LGL 110	Introduction to Law and the Legal Assistant	3	0	3
LGL 125	Legal Research	3	0	3
	or			
LGL 210	Virginia and Federal Procedure			
BUS 240	Introduction to Business Law	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
AST 243	Office Administration I	3	0	3
AST 205	Business Communications	3	0	3
	TOTAL	21	0	21

Total Minimum Credits for Career Studies Certificate in Legal Office Technology **21**

Opticians Apprentice

Career Studies Certificate

Purpose: Successful completion of the Opticians Apprentice Career Studies Certificate will prepare students for employment in the eye care field throughout the Commonwealth of Virginia. This program is designed to develop basic essential knowledge and performance skills necessary to function as an optician.

Occupational Objectives: Students who successfully complete this career studies certificate program and complete the 6,000 hours of on-the-job training as a registered apprentice will be eligible to sit for the licensure examination to become a licensed optician in the State of Virginia.

Admission Requirement: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, an interview with the Opticianry program head is required before beginning the curriculum. Students must be registered as an Apprentice Optician with the Virginia Department of Labor. This career studies certificate program may be completed in three years. To be awarded the Opticians Apprentice Career Studies Certificate, students are required to complete 2,000 hours of on-the-job training per year, for a total of 6,000 hours, along with the required courses. Students will be required to repeat any OPT course in which a grade lower than "C" is received.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
OPT 150	Optical Laboratory Theory I	3	0	3
OPT 151	Optical Laboratory Theory II	3	0	3
OPT 121	Optical Theory I	3	0	3
OPT 122	Optical Theory II	3	0	3
OPT 105	Anatomy, Physiology, and Pathology of the Eye	3	0	3
OPT 160	Optical Dispensing Theory I	3	0	3
OPT 154	Optical Business Management	3	0	3
	TOTAL	21	0	21

Total Minimum Credits for Career Studies Certificate in Opticians Apprentice **21**

Pastry Arts

Career Studies Certificate

Purpose: The Pastry Arts program is intended to develop knowledge and skills in modern and classical pastry and baking techniques and products. The curriculum provides technical education in baking, pastry production, confections and artistic product presentation and leads to employment in a variety of culinary and retail career paths.

Occupational Objectives: The Pastry Arts Career Studies Certificate prepares graduates to enter the following positions: Baker, Pastry Sous Chef, and Pastry Chef.

Admission Requirements: General college curricular admission

Program Notes: Students must demonstrate college level proficiency in reading and writing. Proficiency may be demonstrated by the following:

1. Submission of official college transcripts that record completion of a college level composition course, or
2. Submission of SAT or ACT scores, taken within the past five years, at the following levels:
   - ACT Verbal 19
   - SAT Verbal 480 (taken on or after April 1, 1995)
   - SAT Critical Reading 480 (taken on or after March 1, 2005, or
3. Successful completion of the COMPASS English placement test for ENG 111, with a satisfactory score on the reading test. Students with deficiencies in reading or writing may require developmental studies to be commenced during their first semester of enrollment, and completed sequentially every subsequent semester until all developmental requirements are satisfied.

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

The recommended two-semester sequence can be viewed at http://www.reynolds.edu/hospitality/pastryartssequence.htm.

Faculty provide one-on-one advising to enhance student success. Students pursuing this certificate must schedule and complete an entry interview with their faculty advisor. Once enrolled, students must meet with their advisor every semester to review their scheduling strategy and status toward graduation.

The competency-based nature of the curriculum allows students with previous educational studies or training experience to be evaluated for advanced standing. Students who believe they are eligible for such consideration are required to meet with their advisor to discuss eligibility for evaluation and possible advanced standing.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
HRI 128	Principles of Baking	2	3	3
HRI 158[1]	Safety and Sanitation	3	0	3
HRI 280[2]	Principles of Advanced Baking and Pastry	2	3	3
HRI 281[2]	Artisan Breads	2	3	3
HRI 283[2]	Custards and Crèmes	2	3	3
	TOTAL	11	12	15
HRI 282[2]	European Tortes and Cakes	2	3	3
HRI 284[2]	Specialty, Spa, and Plated Desserts	2	3	3
HRI 285[2]	Chocolate and Sugar Arts	2	3	3
HRI 286[2]	Wedding and Specialty Cakes	2	3	3
	TOTAL	8	12	12

Total Minimum Credits for Career Studies Certificate in Pastry Arts **27**

[1]Students must take HRI 158-Safety and Sanitation during the fall semester.
[2]Students enrolled in HRI classes involving food laboratory usage will be allowed in laboratories only when wearing the required uniforms. Uniform specifications may be obtained at www.reynolds.edu/hospitality/uniforms.htm or from program faculty.

Pharmacy Technician

Career Studies Certificate

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.

Occupational Objectives: Pharmacy technicians work in hospitals, retail pharmacies, home health care, nursing homes, clinics, nuclear medicine, and mail order prescription pharmacies. Pharmacy technicians can be employed with medical insurance companies, pharmacy software companies, drug manufacturing and wholesale companies, 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

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
HLT 143	Medical Terminology I	3	0	3
HLT 250	General Pharmacology	3	0	3
HLT 261[1]	Basic Pharmacy I	3	0	3
HLT 262	Basic Pharmacy II	3	0	3
HLT 298	Seminar and Project in Health (Pharmacy Technician)	4	0	4
	or			
HLT 290	Coordinated Internship	1	15	4
	TOTAL	13-16	0-15	16

Total Minimum Credits for Career Studies Certificate in Pharmacy Technician **16**

[1]AST 101 should be taken if student does not have a keyboarding speed of at least 25 wpm. AST 101 may be taken prior to or concurrently with HLT 261.

Pre-Nursing and Allied Health

Career Studies Certificate

Purpose: The Pre-Nursing and Allied Health Career Studies Certificate (CSC) program is designed to help prepare students for admission to the Nursing and other allied health AAS degree programs at JSRCC. These programs include Medical Laboratory Technology, Emergency Medical Services – Paramedic, and Respiratory Therapy. Students enrolled in this CSC program are not yet accepted into the Nursing or Allied Health AAS degree programs, but are completing their general education and prerequisite courses. After completing the CSC, students will need to apply for admission to their program of study. Students wishing to enroll in the Pre-Nursing and Allied Health CSC or AAS degrees in Dental Laboratory Technology or Opticianry must meet with the program heads prior to enrollment.

Occupational Objectives: This program is designed to prepare students to succeed in the nursing or chosen allied health program. Completion of this program does not guarantee admission into those programs. Students enrolled in the CSC are encouraged to meet with their respective program advisor after completing their first semester of courses.

Admission Requirements: General college curricular admission

Program Notes: This program takes new students in the spring, summer, and fall semesters of each year.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Those students not passing the computer competency exam may retake the exam only once.

The following curriculum is required for those students seeking entrance into the Nursing AAS degree program.

CURRICULUM: Pre–Nursing

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
ENG 111	College Composition I	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
NAS 161	Health Science I	3	3	4
NAS 162	Health Science II	3	3	4
PSY 230	Developmental Psychology	3	0	3
SOC 200	Principles of Sociology	3	0	3
	TOTAL	25	6	27

Total Minimum Credits for Career Studies Certificate in Pre-Nursing and Allied Health, Nursing **27**

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

The following curriculum is required for those students seeking entrance into the Emergency Medical Services – Paramedic AAS degree program.

CURRICULUM: Pre-Emergency Medical Services – Paramedic

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
HLT 143	Medical Terminology	3	0	3
ENG 111	College Composition I	3	0	3
NAS 161	Health Science I	3	3	4
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
___ ___[1]	Social/Behavioral Science Electives	6	0	6
	TOTAL	22	3	23

Total Minimum Credits for Career Studies Certificate in Pre-Nursing and Allied Health, Emergency Medical Services – Paramedic 23

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

The following curriculum may be required for those students seeking entrance into the Opticianry AAS degree program. Advising with the program head is required prior to enrollment.

CURRICULUM: Pre-Opticianry

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
ENG 111	College Composition I	3	0	3
ENG 112	College Composition II	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
___ ___[1]	Social/Behavioral Science Elective	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	19-21	0-4	21

Total Minimum Credits for Career Studies Certificate in Pre-Nursing and Allied Health, Opticianry 21

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

The following curriculum may be required for those students seeking entrance into the Dental Laboratory Technology AAS degree program. Advising with the program head is required prior to enrollment.

CURRICULUM: Pre-Dental Laboratory Technology

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
ENG 111	College Composition I	3	0	3
ENG 112	College Composition II	3	0	3
MTH 120	Introduction to Mathematics	3	0	3
NAS 105	Natural Science Topics for Modern Society	2	0	2
PSY 120 PSY 201	Human Relations or, Introduction to Psychology I	3	0	3
___ ___[1]	Humanities/Fine Arts Elective			
	TOTAL	21-23	0-4	23

Total Minimum Credits for Career Studies Certificate in Pre-Nursing and Allied Health, Dental Laboratory Technology 23

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

The following curriculum is required for those students seeking entrance into the Medical Laboratory AAS degree program.

CURRICULUM: Pre-Medical Laboratory Technology

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
ENG 111	College Composition I	3	0	3
ENG 112	College Composition II	3	0	3
BIO 101	General Biology I	3	3	4
CHM 101	General Chemistry	3	3	4
	or			
CHM 111	College Chemistry I			
MTH 120	Introduction to Mathematics	3	0	3
	or			
MTH 163	Pre-Calculus			
___ ___[1]	Social/Behavioral Science Elective	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	25-27	6-10	29

Total Minimum Credits for Career Studies Certificate in Pre-Nursing and Allied Health, Medical Laboratory Technology 29

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

The following curriculum is required for those students seeking entrance into the Respiratory Therapy AAS degree program.

CURRICULUM: Pre-Respiratory Therapy

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
ENG 111	College Composition I	3	0	3
RTH 102	Integrated Sciences for Respiratory Care	3	0	3
RTH 121	Cardiopulmonary Science I	3	0	3
NAS 161	Health Science I	3	3	4
NAS 162	Health Science II	3	3	4
___ ___[1]	Social/Behavioral Science Elective	3	0	3
___ ___[1]	Humanities/Fine Arts Elective	3	0	3
	TOTAL	25	6	27

Total Minimum Credits for Career Studies Certificate in Pre-Nursing and Allied Health, Respiratory Therapy 27

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design

Pre-Practical Nursing and Dental Assisting

Career Studies Certificate

Purpose: The Pre-Practical Nursing and Dental Assisting Career Studies Certificate (CSC) is designed to help prepare students for admission to the Practical Nursing and Dental Assisting Certificate programs. Students enrolled in this CSC are not yet accepted into the Practical Nursing or Dental Assisting Certificate programs, but are completing their general education and pre-requisite courses. After completing this certificate, students will apply for admission to their intended program of study.

Occupational Objectives: This program is designed to prepare students to succeed in either the Practical Nursing or Dental Assisting Certificate program. Completion of this CSC does not guarantee admission into the Dental Assisting or Practical Nursing Certificate programs. Students enrolled in this CSC are encouraged to meet with their respective program advisor after completing their first semester courses.

Admission Requirements: General college curricular admission

Program Notes: This program takes new students in the spring, summer, and fall semesters of each year.

Computer Competency Requirement: Students in this program will meet the college's computer competency requirement by successfully completing ITE 115. Students can also meet this requirement by passing the college's computer competency exam, administered in the testing centers on each campus, in which case they will receive college credit for ITE 115. Those students not passing the computer competency exam may retake the exam only once.

The following curriculum is required for those students seeking entrance into the Dental Assisting Certificate program.

CURRICULUM: Pre-Practical Nursing

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
HLT 105	Cardiopulmonary Resuscitation	1	0	1
__ ___[1]	Personal Wellness Elective	0-2	0-4	2
ENG 111	College Composition I	3	0	3
NAS 150	Human Biology	3	0	3
PSY 230	Developmental Psychology	3	0	3
	TOTAL	14-16	0-4	16

Total Minimum Credits for Career Studies Certificate in Pre-Practical Nursing and Dental Assisting, Dental Assisting 16

[1]Students must consult the Dental Assisting program head prior to registering for this course. The following curriculum is required for those students seeking entrance into the Practical Nursing Certificate program.

CURRICULUM: Pre-Dental Assisting

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
SDV 100	College Success Skills	1	0	1
HLT 105	Cardiopulmonary Resuscitation	1	0	1
___ ___[1]	Personal Wellness Elective	0-2	0-4	2
ENG 111	College Composition I	3	0	3
ENG 107	Critical Reading	3	0	3
ITE 115	Introduction to Computer Applications and Concepts	3	0	3
PSY 201	Introduction to Psychology	3	0	3
	TOTAL	14-16	0-4	16

Total Minimum Credits for Career Studies Certificate in Pre-Practical Nursing and Dental Assisting, Practical Nursing 16

[1]Students must consult the Practical Nursing program head prior to registering for this course.

Public Transportation Diesel Maintenance

Career Studies Certificate

Purpose: This program is designed specifically to provide mechanics employed by public transit authorities throughout the Commonwealth of Virginia with technical training in the basic theory and fundamentals of the various electrical and mechanical systems related to transportation vehicles.

Occupational Objective: The Public Transportation Diesel Maintenance Program is for designed for mechanics employed by the Public Transit Authorities only.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, each student must be sponsored by a public transit authority and be admitted to the program by both the Diesel program head and the school dean.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
DSL 123	Diesel Engine Systems I	2	0	2
DSL 124	Diesel Engine Systems II	2	0	2
DSL 141	Transportation Electrical Systems I	2	0	2
DSL 142	Transportation Electrical Systems II	2	0	2
DSL 161	Air Brake Systems I	2	0	2
DSL 162	Air Brake Systems II	2	0	2
DSL 171	Transportation Air Conditioning I	2	0	2
DSL 172	Transportation Air Conditioning II	2	0	2
ENG 111	College Composition I	3	0	3
	or			
___ ___[1]	Approved General Education Elective			
	TOTAL	19	0	19

Total Minimum Credits for Career Studies Certificate in Public Transportation Diesel Maintenance 19

1A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design.

Real Estate

Career Studies Certificate

Purpose: The curriculum is designed for persons who seek full-time employment in the real estate field, for those presently in the field who are seeking promotion, and for those who wish to improve or acquire understanding and knowledge of essential real estate subjects, and those who wish recertification.

Occupational Objectives: Include Real Estate Salespersons, Real Estate Broker, Real Estate Office Manager, Real Estate Sales Manager

Admission Requirements: General college curricular admission

Program Notes: The Real Estate option in the career studies certificate program satisfies the Virginia Real Estate Commission's Educational Requirements for Salespersons.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
REA 100	Principles of Real Estate	4	0	4
REA 215	Real Estate Brokerage	3	0	3
REA 216	Real Estate Appraisal	4	0	4
REA 217	Real Estate Finance	3	0	3
REA 290	Real Estate Broker Coordinated Internship	0	15	3
___ ___[1]	Approved Elective	3	0	3
	TOTAL	17	15	20

Total Minimum Credits for Career Studies Certificate in Real Estate **20**

[1]Students may select from the following courses: BUS 100, BUS 240, REA 225, REA 247, REA 219, REA 245, REA 246, REA 256, MKT 271, and CST 100.

Respiratory Therapy Advanced Practice

Career Studies Certificate

Purpose: This option is designed to increase the clinical skill level and knowledge of the entry level therapist in the management of the critically ill patient. Additional skills in cardiopulmonary diagnostics, rehabilitation, and evaluation and modification of therapy will be taught at the advanced practitioner level.

Occupational Objectives: Opportunities for employment as a professional respiratory therapist exist in hospitals, clinics, research facilities, and home health care agencies and alternate care sites. The respiratory therapy practitioner will be able to administer gas therapy, humidity therapy, aerosol therapy, and hyperinflation therapy; assist with mechanical ventilation, special therapeutic and diagnostic procedures, cardiopulmonary resuscitation, and airway management techniques. The respiratory therapist works under the supervision of a physician.

Admission Requirements: General college curricular admission

Discontinuance of the Respiratory Therapy Advanced Practice Career Studies Certificate (CSC): The Advanced Practice CSC will no longer enroll new students into the program after the Fall 2010 Semester. All students currently in the Advanced Practice CSC must complete the program by the end of the Summer 2011 Semester. Courses within the Advanced Practice curriculum will be taught as follows:

Spring 2010
RTH 235
RTH 236
RTH 290
RTH 290
RTH 299

Summer 2010
RTH 227
RTH 290
RTH 299

Fall 2010-This is the last and only semester these courses will be taught before the discontinuance of the Advanced Practice program in Summer 2011.
RTH 223
RTH 225

Spring 2011-This is the last semester these courses will be taught before the discontinuance of the Advanced Practice program in Summer 2011.
RTH 235
RTH 236
RTH 290
RTH 290
RTH 299

Spring 2011-This is the last semester these courses will be taught before the discontinuance of the Advanced Practice program in Summer 2011.
RTH 235
RTH 236
RTH 290
RTH 290
RTH 299

Program Notes: In addition to the general college curricular admissions requirements, the applicant must be a Certified Respiratory Therapist (CRT) or CRT eligible. Entry into the Respiratory Therapy Advanced Practice curriculum also requires a personal interview with the program head/clinical coordinator. A special physical and dental examination is required for students in the School of Nursing and Allied Health, which includes an immunization schedule. Applicants must be free of any physical or mental condition that might adversely affect their performance. Drug testing and criminal background checks are required by clinical affiliates. Current certification in CPR is required for enrollment in all clinical courses, Current ACLS and CRT certification are required for enrollment in all clinical internship courses taught in hospital intensive care units. Students are responsible for transportation to and from facilities used for clinical experiences. This will be at the student's expense.

A student must obtain permission from the program head to continue the major in Respiratory Therapy under the following conditions: (l) Receipt of a grade below a "C" in any major course, (2) Overall GPA falls below a 2.0 average in any one semester. A student must obtain permission from the program head to take courses out of the sequence in the catalog.

Progression through the Program: The college offers this program in affiliation with the healthcare agencies and practitioners in the communities the college serves. The college relies on its community affiliates to provide clinical education opportunities for its students, expert clinical preceptors, and course instructors for many courses. The often rapid changes in healthcare law, standards of practice, technology, and content of credentialing examinations increasingly necessitate sudden changes in the program's course content, policies, procedures and course scheduling. As a result, the college cannot guarantee every student continuous and uninterrupted clinical and course instruction as outlined in the printed catalog curriculum for this program. Circumstances beyond the control of the college may necessitate the postponement of course offerings or changes in the sequencing and/or location of scheduled courses or clinical assignments as well as possible instructor changes after instruction has started.

Financial Requirements:

Books and Supplies	$150.00-250.00/Semester
Miscellaneous Fees (exit exams and seminar)	$425.00

Identification Badge	$10.00
Uniform (approximately)	$50.00
Physical and Dental Examination	Varies

Note: The above costs are approximate and are subject to change.

Program Exit Exams: Every student is required to pass comprehensive exit exams before being added to the National board for Respiratory Care's electronic eligibility database. Exam fees are included in the spring and summer semester tuition. If a student does not pass the secured exams taken in the summer, subsequent attempts are at the student's expense.

Program Accreditation and Therapist Certification: The Respiratory Therapy program is accredited through the Committee on Accreditation for Respiratory Care, 1248 Harwood Road, Bedford, TX 76021-4244, (817)283-2835, by the Commission on Accreditation of Allied Health Education Programs. Graduates of the Respiratory Therapy Advanced Practice program who also have an AAS degree in Respiratory Therapy are eligible to take the registry examinations administered by the National Board for Respiratory Care Inc.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
RTH 223	Cardiopulmonary Science III	2	0	2
RTH 227	Integrated Respiratory Therapy Skills II	2	0	2
RTH 225	Neonatal and Pediatric Respiratory Procedures	2	3	3
RTH 235	Diagnostic and Therapeutic Procedures II	2	3	3
RTH 236	Critical Care Monitoring	2	3	3
RTH 290	Coordinated Practice in Respiratory Therapy-ACC/NPCC III, IV and Internship	0	30	9
RTH 299	Supervised Study in Respiratory Therapy-Exam Prep III	2	0	2
___ ___[1]	General Education Elective	3	0	3
	TOTAL	15	39	27

Total Minimum Credits for Career Studies Certificate in Respiratory Therapy Advanced Practice 27

[1]A list of approved general education electives (humanities/fine arts, social/behavioral sciences, mathematics, science, and personal wellness) is provided in the General Education section of the catalog under Curriculum Planning and Design. Students may also take ENG 111.

Substance Abuse Counseling Education

Career Studies Certificate

Purpose: The Human Services program offers a career studies certificate in Substance Abuse Counseling Education designed to prepare students with the requisite professional knowledge, intervention skills, and values for delivering services in substance abuse counseling programs and addictions treatment. Courses in this curriculum can be used to meet the certification requirements of substance abuse counselors and substance abuse counseling assistants designated by the Health Professions Board of Counseling in the Commonwealth of Virginia.

Occupational Objectives: Graduates may be employed in a variety of settings, including, but not limited to hospital and residential-based treatment programs, community-based treatment programs, group homes, homeless shelters, residential halfway houses, and institutional and community-based juvenile and adult corrections.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, an interview with the Human Services program head is recommended. While a face-to-face interview is preferable, an interview can also be conducted via telephone or electronic conference. Students should see their program advisor for information on the certification requirements of the Virginia Health Professions Board of Counseling for credentialing certified substance abuse counselors and certified substance abuse counselor assistants.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ENG 111	College Composition I	3	0	3
	or			
CST 100	Principles of Public Speaking			
HLT 121	Introduction to Drug Use and Abuse	3	0	3
HMS 260	Substance Abuse Counseling	3	0	3
HMS 220	Addiction and Prevention	3	0	3
HMS 270	Treatment Systems	3	0	3
HMS 258	Case Management and Substance Abuse	3	0	3
HMS 266	Counseling Psychology	3	0	3
HMS 290	Coordinated Internship in Human Services	0	15	3
	TOTAL	21	15	24

Total Minimum Credits for Career Studies Certificate in Substance Abuse Counseling Education 24

Surveying Technology

Career Studies Certificate

Purpose: This option is designed to provide course work preparation to prospective examinees for the Virginia land surveyor licensing examination. The courses are encouraged and accepted by the State Board of Architects, Professional Engineers, Land Surveyors and Certified Landscape Architects under the auspices of the Commerce Department. Practical field experience will also be evaluated by the State Board to determine an individual's eligibility for licensing. As practical surveying experience is a necessary component for becoming licensed as a surveyor, occupational objectives include working in various capacities with surveying and engineering firms—with the ultimate objective of becoming a licensed surveyor.

Occupational Objectives: Graduates of the program may find work as surveyors and surveying technicians in architectural, engineering, and related services firms. Opportunities also exist in Federal, State, and local governmental agencies and in construction firms that concentrate on projects related to site design, land development, and transportation.

Admission Requirements: General college curricular admission

Program Notes: In addition to the general college curricular admission requirements, those interested in entering the Surveying Technology option must be proficient in algebra, plane geometry, and trigonometry. Students found to be deficient in these areas will be advised to enroll in appropriate mathematics courses.

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
ECO 120	Survey of Economics	3	0	3
LGL 226	Real Estate Abstracting	3	0	3
CIV 171	Surveying I	2	3	3

CIV 265	Curves and Earthwork	3	0	3
CIV 172	Surveying II	2	3	3
CIV 241	Applied Hydraulics and Drainage I	3	0	3
CIV 242	Applied Hydraulics and Drainage II	3	0	3
	TOTAL	19	6	21

Total Minimum Credits for Career Studies Certificate in Surveying Technology **21**

Welding

Career Studies Certificate

Purpose: Employment opportunities exist for individuals proficient in advanced welding techniques. This program is designed for students with no previous experience in welding, as well as for individuals currently employed in the welding field who wish to upgrade their skills. Individuals entering the Welding Career Studies Certificate program should consider this program as a means of developing or advancing their job skills over a one-year period of time and as a means of acquiring the skills necessary to test for the various levels of welding certification.

Occupational Objectives: Opportunities for graduates include construction welder, fabrication welder, and welding supply salesperson.

Admission Requirements: General college curricular admission

CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
WEL 120	Fundamentals of Welding	1	3	2
WEL 121	Arc Welding	1	3	2
WEL 122	Welding II (Electric Arc)	2	3	3
WEL 130	Inert Gas Welding	2	3	3
WEL 145	Welding Metallurgy	3	0	3
WEL 150	Welding Drawing and Interpretation	2	0	2
ENG 111	College Composition I	3	0	3
	TOTAL	14	12	18

Total Minimum Credits for Career Studies Certificate in Welding **18**

COURSE INFORMATION

EXPLANATORY NOTES
Course Numbers

Numbers 01-09 indicate Developmental Studies courses. Credits earned in these courses are not applicable toward Certificate or Associate Degree programs.

Numbers 10-99 indicate basic occupational courses (except for ESL courses). Credits earned for these courses are applicable toward Certificate programs. These credits are not applicable toward an Associate Degree.

Numbers 100-199 indicate freshman-level courses. Credits earned for these courses are applicable toward Associate Degree and Certificate programs.

Numbers 200-299 indicate sophomore-level courses. Credits earned for these courses are applicable toward Associate Degree and Certificate programs.

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

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 each week (including laboratory, shop, supervised practice, and cooperative work experiences) are indicated for each course in the course description. In addition to the lecture and laboratory hours in class each week, each student must spend some time on out-of-class assignments under his own direction.

Prerequisites
If any prerequisites are required before enrolling in a course, they will be identified in the course description or by an indication of course sequence. Courses listed as ACC 111-112 and ENG 111-112, for example, must be taken in sequence unless otherwise noted in the course description. Courses in special sequences (usually identified by the numerals I-II or I-II-III) must also be taken in sequence unless otherwise noted in the course description. The prerequisites must be completed satisfactorily before enrolling in a course unless special permission is obtained from the school dean. Co-requisite courses are to be taken simultaneously.

General Usage Courses
The following "General Usage Courses" apply to multiple curricula and may carry a variety of prefix designations. The descriptions of the courses are normally identical for each different prefix and are as follows:

90-190-290 Coordinated Internship
Supervises on-the-job training in selected health agencies, business, industrial, or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

93-193-293 Studies In
Covers new content not covered in existing courses in the discipline. Allows instructor to explore content and instructional methods to asses the course's viability as a permanent offering. Variable hours.

95-195-295 Topics
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.

96-196-296 On-Site Training
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.

97-197-297 Cooperative Education
Provides on-the-job training for pay in approved businesses, industrial, and service firms. 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.

98-198-298 Seminar and Project
Requires completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

99-199-299 Supervised Study
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

COURSE DESCRIPTIONS A-Z

Course descriptions are presented alphabetically by prefix in this section.
Here is a list of the disciplines and their prefixes:

Prefix	Description
ACC	Accounting
ADJ	Administration of Justice
ARA	Arabic
ARC	Architecture
ART	Arts
ASL	American Sign Language
AST	Administrative Support Technology
AUT	Automotive
BIO	Biology
BLD	Building
BUS	Business Management & Administration
CHD	Childhood Development
CHM	Chemistry
CIV	Civil Engineering Technology
CSC	Computer Science
CST	Communication Studies & Theatre
DIT	Dietetics
DNA	Dental Assisting
DNL	Dental Laboratory
DRF	Drafting
DSL	Diesel
ECO	Economics
EDU	Education
EGR	Engineering
ELE	Electrical Technology
EMS	Emergency Medical Services
ENG	English
ESL	English as a Second Language
ETR	Electronics Technology
FIN	Financial Services
FRE	French
FST	Fire Science
GEO	Geography
GER	German
GIS	Geographic Information Systems
GOL	Geology
HIM	Health Information Management
HIS	History
HLT	Health
HMS	Human Services
HRI	Hospitality Management
HRT	Horticulture
HUM	Humanities
IND	Industrial Engineering Technology
INT	Interpreter Education
ITD	Information Technology Design
ITE	Information Technology Essentials
ITN	Information technology Networking
ITP	Information Technology Programming
LGL	Paralegal Studies
MDL	Medical Laboratory
MEN	Mental Health
MKT	Marketing
MTH	Math
MUS	Music
NAS	Natural Science
NUR	Nursing
OPT	Opticianry
PED	Physical Education
PHI	Philosophy
PHT	Photography
PHY	Physics
PLS	Political Science
PNE	Practical Nursing
PSY	Psychology
REA	Real Estate
REL	Religion
RTH	Respiratory Therapy
SDV	Student Development
SOC	Sociology
SPA	Spanish
WEL	Welding

ACC - ACCOUNTING

ACC 115 Applied Accounting (3 cr.)
Presents practical accounting procedures for retail stores, professional individuals in firms, and personal service occupations. Covers the accounting cycle, journals, ledgers, preparation of financial statements and payrolls, and checking account management. Prerequisites: Students should have completed developmental courses in English, reading, and mathematics prior to enrollment in ACC 115. Waivers must be granted by program, school, or counselor approval. Lecture 3 hours per week. Offered in fall, spring, and summer.

ACC 124 Payroll Accounting (3 cr.)
Presents accounting systems and methods used in computing and recording payroll to include payroll taxes and compliance with federal and state legislation. Lecture 3 hours per week. Offered in spring and summer.

ACC 134 Small Business Taxes (3 cr.)
Introduces taxes most frequently encountered in business. Includes payroll, sales, property, and income tax. Studies the fundamentals of income tax preparation of business taxes for small businesses organized as proprietorships and partnerships. Includes sales and property taxes and income tax preparation related to business assets; business of the home; employment taxes; excise taxes; schedules C, SE and 1040; self-employed retirement plans; tip reporting and allocation rules, etc. Lecture 3 hours per week. Offered in spring.

ACC 211 Principles of Accounting I (3 cr.)
Presents accounting principles and their application to various businesses. Covers the accounting cycle, income determination, and financial reporting. Studies services, merchandising, and internal controls. Prerequisites: Students should have completed developmental courses in English, reading, and mathematics prior to enrollment in ACC 211. Waivers must be granted by program, school, or counselor approval. Lecture 3 hours per week. Offered in fall, spring, and summer.

ACC 212 Principles of Accounting II (3 cr.)
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 concepts. Prerequisite: ACC 211. Lecture 3 hours per week. Offered in fall, spring, and summer.

ACC 215 Computerized Accounting (3 cr.)
Introduces the computer in solving accounting problems. Focuses on operation of computers. Presents the accounting cycle and financial statement preparation in a computerized system and other applications for financial and managerial accounting. Prerequisite: ACC 115 or ACC 211 or equivalent or school approval. Lecture 3 hours per week. Offered in summer.

ACC 217 Analyzing Financial Statements (3 cr.)
Explains how financial data are generated and limitations of the data, techniques for analyzing the flow of a business's funds, and the methods of selecting and interpreting financial ratios. Highlights the conceptual framework for analysis, and offers basic and advanced analytical techniques through the use of comprehensive case studies. Prerequisite: ACC 212 or equivalent. Lecture 3 hours per week. Offered in summer, even years.

ACC 219 Government and Non-Profit Accounting (3 cr.)
Introduces fund accounting as used by governmental and nonprofit entities. Stresses differences between accounting principles of for-profit and not-for-profit organizations. Prerequisite: ACC 212 or equivalent. Lecture 3 hours per week. Offered in fall.

ACC 221 Intermediate Accounting I (3 cr.)
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. Prerequisite: ACC 212 or equivalent. Lecture 3 hours per week. Offered in fall.

ACC 222 Intermediate Accounting II (3 cr.)
Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. Prerequisite: ACC 221 or equivalent. Lecture 3 hours per week. Offered in spring.

ACC 231 Cost Accounting I (3 cr.)
Studies cost accounting methods and reporting as applied to job order, process, and standard cost accounting systems. Includes cost control, capital budgeting, and pricing decisions. Prerequisite: ACC 212 or equivalent. Lecture 3 hours per week. Offered in fall.

ACC 241 Auditing I (3 cr.)
Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation gathering techniques and other topics. Prerequisite or co-requisite: ACC 222. Lecture 3 hours per week. Offered in spring.

ACC 261 Principles of Federal Taxation I (3 cr.)
Presents the study of federal taxation as it relates to individuals and related entities. Covers gross income, deductions and credits, sales and other disposition of property, capital gains, losses and timing. Includes tax planning, compliance, and reporting. Emphasizes personal tax burden minimization and preparation of personal tax returns. Prerequisite: ACC 211 or equivalent. Lecture 3 hours per week. Offered in fall.

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. Prerequisites: English placement recommendation for ENG 111, mathematics placement recommendation at level 2 or higher, and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 107 if recommended by reading placement test. Prerequisite and co-requisite courses may be waived only by program or school approval. 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. Prerequisite: English placement recommendation for ENG 111, mathematics placement recommendation at level 2 or higher, and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 107 if recommended by reading placement test. Prerequisite and co-requisite courses may be waived only by program or school approval. 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. Prerequisite: English placement recommendation for ENG 111, mathematics placement recommendation at level 2 or higher, and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 107 if recommended

by reading placement test. Prerequisite and Co-requisite courses may be waived only by program or school approval. Lecture 3 hours per week.

ADJ 116 Special Enforcement Topics (3 cr.)
Considers contemporary issues, problems, and controversies in modern law enforcement. Prerequisite: ADJ 100. Lecture 3 hours per week.

ADJ 128 Patrol Administration and Operations (3 cr.)
Studies the goals, methods and techniques of police patrol with focus on the norms which govern work behavior in a police career. Examines the responsibilities of administrators and field supervisors of patrol in the local and state law enforcement agencies. Prerequisite: ADJ 100. Lecture 3 hours per week.

ADJ 130 Introduction to Criminal Law (3 cr.)
Surveys the general principles of American criminal law, the elements of major crimes, and the basic steps of prosecution procedure. Prerequisite: English placement recommendation for ENG 111, mathematics placement recommendation at level 2 or higher, and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 107 if recommended by reading placement test. Prerequisite and co-requisite courses may be waived only by program or school approval. Lecture 3 hours per week.

ADJ 201 Criminology (3 cr.)
Studies current and historical data pertaining to criminal and other deviant behavior. Examines theories that explain crime and criminal behavior in human society. English placement recommendation for ENG 111, mathematics placement recommendation at level 2 or higher, and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite and co-requisite: ENG 108 if recommended be reading placement test. Prerequisite and co-requisite courses may be waived only by program or school approval. Lecture 3 hours per week.

ADJ 212 Criminal Law, Evidence and Procedures (3 cr.)
Teaches the elements of proof for major and common crimes and the legal classification of offenses. Studies the kinds, degrees and admissibility of evidence and its presentation in criminal proceedings with emphasis on legal guidelines for methods and techniques of evidence acquisition. Surveys the procedural requirements from arrest to final disposition in the various American court systems with focus on the Virginia jurisdiction. Lecture 3 hours per week.

ADJ 227 Constitutional Law for Justice Personnel (3 cr.)
Surveys the basic guarantees of liberty described in the U. S. Constitution and the historical development of these restrictions on government power, primarily through U. S. Supreme Court decisions. Reviews rights of free speech, press, assembly, as well as criminal procedure guarantees (to counsel, jury trial, habeas corpus, etc.) as they apply to the activities of those in the criminal justice system. Lecture 3 hours per week.

ADJ 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.)
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 233 Digital Crime and Digital Terrorism (3 cr.)
Provides instruction in the techniques and practices used to identify incidents of digital crime and digital terrorism, methods of detection of incidents, methods of protection from digital crime and digital terrorism, and the future of digital crime and digital terrorism. Prerequisites: ADJ 100 and 107 or 201, basic computer literacy, experience using the Internet, or permission of the instructor. Lecture 3 hours per week.

ADJ 234 Terrorism and Counter-Terrorism (3 cr.)
Surveys the historical and current practices of terrorism that are national, transnational, or domestic in origin. Includes biological, chemical, nuclear, and cyber terrorism. Teaches the identification and classification of terrorist organizations, violent political groups, and issue-oriented militant movements. Examines investigative methods and procedures utilized in counter-terrorist efforts domestically and internationally. Prerequisites: ADJ 100 and ADJ 107 or equivalent. Lecture 3 hours per week.

ADJ 235 Research in Criminal Justice (3 cr.)
Presents research methodology, including the development of research questions, quantification techniques, collection procedures, analysis tools, and the means of establishing relationships between theory, policy, and practice. Prerequisites: ENG 112, ADJ 100, ADJ 105, and ADJ 107. 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 and collecting, handling, and preserving evidence. Lecture 3 hours per week.

ADJ 246 Correctional Counseling (3 cr.)
Presents concepts and principles of interviewing and counseling as applied in the correctional setting. Lecture 3 hours per week.

ADJ 289 Comparative Systems of Criminal Justice (3 cr.)
Surveys administration of justice in a variety of nations, comparing workings and results of different law enforcement, judicial, and correctional components. Lecture 3 hours per week.

ADJ 290 Coordinated Internship in Administration of Justice (3 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 15 hours per week.

ARA - ARABIC

ARA 101 Beginning Arabic I (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures, as well as the arts and literature in the Arab world. Prerequisite: Student must be functionally fluent in English. Lecture 4 hours per week.

ARA 102 Beginning Arabic II (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures, as well as the arts and literature in the Arab world. Prerequisite: ARA 101. Lecture 4 hours per week.

ARA 201 Intermediate Arabic I (3 cr.)
Continues to develop understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures in the Arab world. Classes are conducted in Arabic. Prerequisite: ARA 102. Lecture 3 hours per week.

ARC - ARCHITECTURE

ARC 121 Architectural Drafting I (3 cr.)
Introduces techniques of architectural drafting, including lettering, dimensioning, and symbols. Requires production of plans, sections, and elevations of a simple building. Studies use of common reference material and the organization of architectural working drawings. Requires development of a limited set of working draw-

ings, including a site plan, related details, and pictorial drawings. Prerequisite: DRF 231 or school approval. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 122 Architectural Drafting II (3 cr.)
Introduces techniques of architectural drafting, including lettering, dimensioning, and symbols. Requires production of plans, sections, and elevations of a simple building. Studies use of common reference material and the organization of architectural working drawings. Requires development of a limited set of working drawings, including a site plan, related details, and pictorial drawings. Prerequisite: ARC 121 or school approval. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 131 Materials and Methods of Construction I (3 cr.)
Covers use of wood as a building material in all phases of construction. Deals with species used, growth characteristics, hygroscopic properties, and applications of lumber and plywood. Includes wood framing systems, pre-manufactured components, modular systems, windows, doors, cabinets and flooring. Lecture 3 hours per week.

ARC 132 Materials and Methods of Construction II (3 cr.)
Studies masonry and concrete materials related to the construction industry: materials, mixtures, handling and placing, finishing and curing and protection of concrete work. Includes brick and cementitious materials, mortar, and workmanship, and iron, steel, and aluminum as used in construction. Lecture 3 hours per week.

ARC 199 Supervised Study in Architecture (1-5 cr.)
Assigns problems for independent study outside the normal classroom setting under the guidance and direction of an instructor. Incorporates prior experience and instruction in the discipline. Lecture 1-5 hours per week.

ARC 211 Computer-Aided Drafting Applications (3 cr.)
Utilizes computer's hardware and software to create orthographic and pictorial drawings. Requires creation of working drawings by adding the necessary sections, dimensions, and notes to the computer generated views. Prerequisite: DRF 231 or equivalent. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ARC 212 Architectural Drafting III (3 cr.)
Provides fundamental knowledge of the principles and techniques of architectural drawings and procedures. Familiarizes students with the design process to provide a better understanding of the relationship between architectural design and structural systems. Computer-aided design/drafting begins to assume a dominant role in the drawing production process. Prerequisites: ARC 122 or equivalent and DRF 231. Prerequisite or co-requisite: ARC 211. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 213 Architectural Drafting IV (3 cr.)
Requires preparation of complete set of working drawings according to principles and techniques of architectural drawing procedures used in professional firms. CAD is the primary means for drawing production, as well as design presentation, including 3D renderings and animations. Prerequisites: ARC 212 or equivalent and DRF 232. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 241 Building Mechanical Systems (3 cr.)
Studies components and design for systems in residential and commercial building. Covers plumbing supply and drainage, including storm drainage and private sewage disposal. Requires calculation of overall heat balances for buildings as basis for design of heating and cooling systems. Prerequisite: ARC 122 or equivalent. Lecture 3 hours per week.

ARC 242 Building Electrical Systems (3 cr.)
Studies components and design for lighting and electrical systems, security, fire, and smoke alarms. Lecture 3 hours per week.

ART - ARTS

ART 100 Art Appreciation (3 cr.)
Introduces art from prehistoric times to the present day. Describes architectural styles, sculpture, photography, printmaking, and painting techniques. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Lecture 3 hours per week.

ART 101 History and Appreciation of Art I (3 cr.)
Presents the history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of western civilization to the present. ART 101 and 102 may be taken out of order. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Part I of II. Lecture 3 hours per week.

ART 102 History and Appreciation of Art II (3 cr.)
Presents the history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of western civilization to the present. ART 101 and 102 may be taken out of order. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Part II of II. Lecture 3 hours per week.

ART 106 History of Modern Art (3 cr.)
Surveys the history of modern architecture, sculpture, painting, and graphic arts in representational and nonrepresentational forms. Focuses on the periods and movements that influenced the arts of the twentieth century. Emphasizes contemporary art forms, particularly the interaction between art and society, industry, and design. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Lecture 3 hours per week.

ART 121 Drawing I (4 cr.)
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. These courses may be taken out of sequence only by permission of the instructor only. Part I of II. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 122 Drawing II (4 cr.)
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. These courses may be taken out of sequence only by permission of the instructor only. Part of II of II. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 125 Introduction to Painting (3 cr.)
Introduces study of color, composition and painting techniques. Places emphasis on experimentation and enjoyment of oil and/or acrylic paints and the fundamentals of tools and materials. This course is intended to be an art elective for students who do not plan to pursue a degree in the visual arts. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

ART 131 Fundamentals of Design I (4 cr.)
Explores the concepts of two- and three-dimensional design and color. May include field trips as required. ART 131 and 132 must be taken in order except with instructor's approval. Part I of II. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 132 Fundamentals of Design II (4 cr.) .
Explores the concepts of two- and three-dimensional design and color. May include field trips as required. ART 131 and 132 must be taken in order except with

instructor's approval. Par II of II. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 133 Visual Arts Foundation (4 cr.)
Covers tools and techniques, design concepts and principles, color theory and an introduction to the computer for graphic use. Applies to all fields of Visual Art. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

ART 138 Figure Drawing (3 cr.)
Develops drawing skills for beginning and experienced students. Explores a broad range of drawing problems dealing with the human figure in costume using various media and techniques. Prerequisite: ART 120, or equivalent course, or school approval. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 217 Electronic Graphic Design I (4 cr.)
Focuses on creative concepts of graphic design problem solving using electronic technology; includes techniques specific to computer generated publication design and imagery. Electronic Graphic Design II includes use of electronic color models and principles of pre-press production. Required for students pursuing careers in graphic design with emphasis on use of the computer. ART 217 and 218 must be taken in order except with instructor's approval. Prerequisites: ART 131 and passing score on computer competency exam or satisfactory completion of ITE 115 or CSC 155 or equivalent. Part I of II. Lecture 2 hours. Studio Instruction 4 hours. Total 6 hours per week.

ART 218 Electronic Graphic Design II (4 cr.)
Focuses on creative concepts of graphic design problem solving using electronic technology; includes techniques specific to computer generated publication design and imagery. Electronic Graphic Design II includes use of electronic color models and principles of pre-press production. Required for students pursuing careers in graphic design with emphasis on use of the computer. ART 217 and 218 must be taken in order except with instructor's approval. Prerequisites: ART 131 and passing score on computer competency exam or satisfactory completion of ITE 115 or CSC 155 or equivalent. Part I of II. Lecture 2 hours. Studio Instruction 4 hours. Total 6 hours per week.

ART 241 Painting I (4 cr.)
Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Prerequisite: ART 122 or instructor's approval. ART 241 and 242 must be taken in order except with instructor's approval. Part I of II. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 242 Painting II (4 cr.)
Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Prerequisite: ART 122 or instructor's approval. ART 241 and 242 must be taken in order except with instructor's approval. Part of II of II. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 243 Watercolor I (3 cr.)
Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique and value. Prerequisite: ART 131, or school approval. Lecture 1.5 hours. Studio instruction 3.5 hours. Total 5 hours per week.

ART 293 Studies in Art (Painting) (4 cr.)
Provides directed study in painting in the student's chosen medium with emphasis on investigation of personal style and development of portfolio. Prerequisite: ART 242 or instructor's approval. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ASL - AMERICAN SIGN LANGUAGE

ASL 100 Orientation to Acquisition of ASL as an Adult (2 cr.)
Presents a brief introduction to the U.S. Deaf Community, focusing on the differences in language and literature. Introduces many common pitfalls experienced by adults when acquiring ASL as a second language. Provides students with an experience bridging spoken English and ASL via use of visual-gestural, non-verbal communication. Introduces students to the various ASL and IE curricular options offered at JSRCC. Lecture 2 hours per week.

ASL 101 American Sign Language I (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. Part I of II. The first course in a six-semester sequence. Lecture 4 hours per week.

ASL 102 American Sign Language II (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. Part II of II. The second course in six-semester sequence. Prerequisite: ASL 101. Lecture 4 hours per week.

ASL 125 History and Culture of the Deaf Community I (3 cr.)
Examines the history of the Deaf Community and presents an overview of various aspects of Deaf Culture, including educational and legal issues. Prerequisite: Placement for ENG 111. Lecture 3 hours per week.

ASL 201 American Sign Language III (3 cr.)
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. Encourages contact with the Deaf Community to enhance linguistic and cultural knowledge. Part I or II. The third course in a six-semester sequence. Prerequisite: ASL 102 or permission of instructor. Lecture 3 hours per week.

ASL 202 American Sign Language IV (3 cr.)
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. Encourages contact with the Deaf Community to enhance linguistic and cultural knowledge. Part II of II. The fourth course in six-semester sequence. Prerequisite: ASL 201 or permission of instructor. Lecture 3 hours per week.

ASL 220 Comparative Linguistics: ASL and English (3 cr.)
Describes spoken English and ASL (American Sign Language) on five levels: phonological, morphological, lexical, syntactic, and discourse. Compares and contrasts the two languages on all five levels using real-world examples. Documents similarities between signed languages and spoken languages in general. Describes the major linguistic components and processes of English and ASL. Introduces basic theories regarding ASL structure. Emphasizes ASL's status as a natural language by comparing and contrasting similarities and unique differences between the two languages. Prerequisite: ASL 201 and ENG 111. Lecture 3 hours per week.

ASL 225 Literature of the U.S. Deaf Community (3 cr.)
Presents an overview of various aspects of literature common in the U.S. Deaf Community, including those forms written in English and those forms signed in ASL. Applies the recurring themes and metaphors in the context of the history of the U.S. Deaf Community. Prerequisites: ASL 125, ASL 202, ASL 220, and ENG 111. Lecture 3 hours per week.

ASL 261 American Sign Language V (4 cr.)
Develops advanced American Sign Language comprehension and production skills. Emphasizes advanced linguistic aspects of ASL. Presents ASL literary forms. Encourages contact with the Deaf Community. Part I of II. The fifth course in a six-semester sequence. Prerequisite: ASL 202. Lecture 4 hours per week.

ASL 262 American Sign Language VI (4 cr.)
Develops advanced American Sign Language comprehension and production skills. Emphasizes advanced linguistic aspects of ASL. Presents ASL literary forms. Encourages contact with the Deaf Community. Part II of II. The sixth course in a six -semester sequence. Prerequisite: ASL 261. Lecture 4 hours per week.

AST - ADMINISTRATIVE SUPPORT TECHNOLOGY

AST 101 Keyboarding I (3 cr.)
Teaches the alpha/numeric keyboard with emphasis on correct techniques, speed, and accuracy. Teaches formatting of basic personal and business correspondence, reports and tabulation using a software package. Lecture 3 hours per week.

AST 102 Keyboarding II (3 cr.)
Develops keyboarding and document production skills with emphasis on preparation of specialized business documents. Continues skill-building for speed and accuracy. Prerequisite: AST 101. 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 137 Records Management (3 cr.)
Teaches filing and records management procedures for hard copy, electronic, and micrographic systems. Identifies equipment, supplies, and solutions to records management problems. Lecture 3 hours per week.

AST 141 Word Processing I (3 cr.)
Teaches creating and editing documents, including line and page layouts, columns, fonts, search/replace, cut/paste, spell/thesaurus, and advanced editing and formatting features of word processing software. Prerequisite: AST 101 or equivalent. Lecture 3 hours per week.

AST 142 Word Processing II (3 cr.)
Teaches advanced software applications. Prerequisite: AST 141 or equivalent. Lecture 3 hours per week.

AST 190 Coordinated Internship in Administrative Support Technology
See General Usage Courses.

AST 195 Topics in Administrative Support Technology
See General Usage Courses.

AST 205 Business Communications (3 cr.)
Teaches techniques of oral and written communications. Emphasizes writing and presenting business-related materials. Prerequisite: ENG 111 or equivalent. Lecture 3 hours per week.

AST 240 Machine Transcription (3 cr.)
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. Co-requisite: AST 102 or equivalent. Lecture 3 hours per week.

AST 243 Office Administration I (3 cr.)
Develops an understanding of the administrative support role and the skills and knowledge 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. Prerequisite: AST 101. Lecture 3 hours per week.

AST 245 Medical Machine Transcription (3 cr.)
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 with proper grammar and punctuation. Co-requisite: AST 102 or equivalent. Lecture 3 hours per week.

AST 260 Presentation Software (PowerPoint® Presentation Graphics Program) (3 cr.)
Teaches creation of slides including use of text, clip art, and graphs. Includes techniques for enhancing presentations with on-screen slide show as well as printing to transparencies and hand-outs. Incorporates use of sound and video clips. Prerequisite: AST 101 or equivalent. Lecture 3 hours per week.

AUT - AUTOMOTIVE

AUT 111 Automotive Engines I (4 cr.)
Presents analysis of power, cylinder condition, valves and bearings in the automotive engine to establish the present condition, repairs or adjustments. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 112 Automotive Engines II (3 cr.)
Continues study of the analysis of power, cylinder condition, and valves and bearings in the automotive engine to establish the present condition, repairs, or adjustments. Prerequisite: AUT 111. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 126 Auto Fuel and Ignition Systems (5 cr.)
Studies automobile ignition and fuel systems and their functions in operation of the engine. Includes carburetors, fuel pumps, ignition systems, troubleshooting, engine testing and adjustment, and tune-up. Lecture 4 hours. Laboratory 3 hours. Total 7 hours per week.

AUT 130 Introduction to Auto Mechanics (2 cr.)
Introduces auto mechanics, including auto shop safety and tool identification and use. Explains automobile system theory and function. Stresses quality work practices and job opportunities. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

AUT 136 Automotive Vehicle Inspection (2 cr.)
Presents information on methods for performing automotive vehicle safety inspection. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

AUT 141 Auto Power Trains I (Manual Transmissions) (4 cr.)
Presents operation, design, construction and repair of power train components, standard and automatic transmission. Includes clutches, propeller shaft, universal joints, rear axle assemblies, fluid couplings, torque converters, as well as 2-, 3-, and 4- speed standard, overdrive and automatic transmissions. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 142 Auto Power Trains II (Automatic Transmissions) (4 cr.)
Continues to present operation, design, construction and repair of power train components, standard and automatic transmission. Includes clutches, propeller shaft, universal joints, rear axle assemblies, fluid couplings, torque converters, as

well as 2-, 3-, and 4- speed standard, overdrive and automatic transmissions. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 150 Introduction to the Automotive Diesel Engine (3 cr.)
Studies the modern automotive diesel engine including its construction, fuel system, lubrication, cooling, induction, exhaust systems, maintenance, minor adjustment and repair, and tune-up procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 156 Small Gasoline Engines (2 cr.)
Studies small gasoline engine operating principles, construction, design, variety, and their many purposes. Gives instruction on two-cycle and four-cycle small gas engines, their construction, design, fuel system, ignition system, and lubricating systems. Demonstrates disassembly, reconditioning, overhaul and reassembly in the lab. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

AUT 165 Auto Diagnosis and Tune-Up (2 cr.)
Presents the techniques for diagnosis of malfunctions in systems of the automobile. Uses dynamometers, oscilloscopes and other specialized diagnostic and testing equipment. Demonstrates tune-up of conventional and rotary engines. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

AUT 193 Studies in Automotive: Advanced Automotive Technology (3 cr.)
Introduces advanced automotive technologies, including hybrid electric vehicle systems, alternative fueled vehicle systems, and advanced automotive electronics. Teaches theory, function and operation of each hybrid vehicle system and provides students an opportunity to perform diagnostic procedures and maintenance. Prerequisite: approval of Automotive Technology faculty. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 197 Cooperative Education in Automotive (2 cr.)
Develops on-the-job training for automotive technology students. Laboratory 10 hours per week.

AUT 199 Automotive Systems (2 cr.)
Introduces fundamental systems of the automobile, the engine fuel, exhaust, electric, ignition, lubrication, cooling, transmission, steering, brake and suspension systems. Teaches theory and function of each system. Demonstrates operation. Lecture 2 hours per week.

AUT 236 Automotive Climate Control (4 cr.)
Introduces principles of refrigeration, air conditioning controls, and adjustment and general servicing of automotive air conditioning systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 241 Automotive Electricity I (3 cr.)
Introduces electricity and magnetism, symbols and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments and gauges and accessories. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 242 Automotive Electricity II (3 cr.)
Introduces electricity and magnetism, symbols and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments and gauges and accessories. Prerequisite: AUT 241. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 245 Automotive Electronics (4 cr.)
Introduces the field of electronics as it applies to the modern automobile. Emphasizes basic circuit operation, diagnosis and repair of digital indicator and warning systems. Prerequisites: AUT 241 and AUT 242. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 267 Automotive Suspension and Braking Systems (4 cr.)
Presents the operation, design, construction, repair and servicing of braking and suspension systems. Explains use of tools and test equipment, evaluation of test results, estimation of repair cost, front and rear suspension alignment, power and standard steering, and power, standard and disc brakes. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 268 Automotive Alignment (2 cr.)
Studies use of alignment equipment in diagnosing, adjusting, and repairing suspension problems. Prerequisite: AUT 267. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

AUT 275 Shop Management (3 cr.)
Studies shop layout, personnel management, cost analysis, record keeping and quality control. Discusses shop manager, service salesman, and service writer's roles in customer relations. Lecture 3 hours per week.

AUT 297 Cooperative Education in Automotive (2 cr.)
Develops on-the-job training for automotive technology students. Laboratory 10 hours per week.

BIO - BIOLOGY

BIO 1 Foundations of Biology (4 cr.)
Develops a basic understanding of plant and animal form, function, and relationships. Prepares students who have a deficiency in high school biology. Credits cannot be included in any of the college's academic programs. Lecture 4 hours per week.

BIO 101 General Biology I (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. Prerequisite: satisfactory score on reading placement test. Credit toward graduation cannot be awarded for both Biology 106 and Biology 101 or Biology 102. Lecture 3 hours. Recitation and Laboratory 3 hours. Total 6 hours per week.

BIO 102 General Biology II (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. Prerequisite: BIO 101. Credit toward graduation cannot be awarded for both Biology 106 and Biology 101 or Biology 102. Lecture 3 hours. Recitation and Laboratory 3 hours. Total 6 hours per week.

BIO 106 Life Science (4 cr.)
Provides a topical approach to basic biological principles. Includes the scientific process, characteristics of living organisms, molecular aspects of cells, bioenergetics, cellular and organismal reproduction genetics, evolution, some human organ systems, and ecology. Designed for the non-science major. Prerequisite: satisfactory score on the reading and writing placement tests; students should not be enrolled in a remedial reading or writing course while enrolled in this course. Credit toward graduation cannot be awarded for both Biology 106 and Biology 101 or Biology 102. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 107 Biology of the Environment (4 cr.)
Presents the basic concepts of environmental science through a topical approach. Includes the scientific method, population growth and migration, use of natural resources and waste management, ecosystem simplification and recovery, evolution, biogeochemical cycles, photosynthesis and global warming, geological formations, atmosphere and climate, and ozone depletion, pollution examples and anti-pollution laws, and acid deposition. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 205 General Microbiology (4 cr.)
Examines morphology, genetics, physiology, ecology, and control of microorganisms. Emphasizes application of microbiological techniques to selected fields. Prerequisites: BIO 101-102 and CHM 111-112 or equivalent, or permission of instructor. CHM 101-102 are acceptable equivalent courses. Credits for CHM 101 -102 do not count toward the AS degree in Science. Lecture 3 hours. Recitation and Laboratory 3 hours. Total 6 hours per week.

BIO 206 Cell Biology (4 cr.)
Introduces the ultrastructure and functions of cells. Emphasizes cell metabolism, cell division, and control of gene expression. Prerequisite: one year of college biology and one year of college chemistry. Lecture 3 hours. Recitation and Laboratory 3 hours. Total 6 hours per week.

BIO 231 Human Anatomy and Physiology I (4 cr.)
Integrates the study of gross and microscopic anatomy with physiology, emphasizing the analysis and interpretation of physiological data. Prerequisite: one year of college biology and one year of college chemistry or school approval. Lecture 3 hours. Recitation and Laboratory 3 hours. Total 6 hours per week.

BIO 232 Human Anatomy and Physiology II (4 cr.)
Integrates the study of gross and microscopic anatomy with physiology, emphasizing the analysis and interpretation of physiological data. Prerequisite: BIO 231. Lecture 3 hours. Recitation and Laboratory 3 hours. Total 6 hours per week.

BIO 270 General Ecology (3 cr.)
Studies interrelationships between organisms and their natural and cultural environments with emphasis on populations, communities, and ecosystems. Prerequisites: BIO 101 and 102 or departmental approval. Lecture 2 hours. Recitation and Laboratory 3 hours. Total 5 hours per week.

BIO 299 Supervised Study in Ecology- Intermediate (2 cr.)
Assigns problems for independent study by the student incorporating previous instruction and supervised by the instructor. Provides students the opportunity to research scientific literature on their selected topic, design a field study to be conducted, assemble and analyze observed field data, and complete a final report on this research. Prerequisites: one year of college biology (including BIO 102) and MTH 163 or MTH 166 or faculty approval. Lecture 2 hours per week.

BIO 299 Supervised Study in Ecology- Advanced (4 cr.)
Assigns problems for independent study by the student incorporating previous instruction and supervised by the instructor. Provides the student an opportunity to research scientific literature on their selected topic, design a field study to be conducted, assemble and analyze observed field data, and complete a final report on this research. Prerequisites: one year of college biology (including BIO 102) and MTH 163 or MTH 166 or faculty approval. Lecture 4 hours per week.

BLD - BUILDING

BLD 101 Construction Management I (3 cr.)
Presents overview of all phases of construction project management. Introduces students to philosophy, responsibilities, methodology, and techniques of the construction process. Introduces topics related to the construction and design industries, organizations, construction contracts, bidding procedures, insurance, taxes, bonding, cost accounting, business methods, including basic computer usage, safety, and general project management procedures. Lecture 3 hours per week.

BLD 103 Principles of Residential Building Construction Inspection (3 cr.)
Introduces general principles of residential building inspection including materials, foundations, framing, finishing, and building codes. Lecture 3 hours per week.

BLD 210 Building Structures (3 cr.)
Introduces analysis and design of steel, wood, and reinforced concrete structural members including loads, reactions, bending moments, stresses, and deflection for selection of beam and column sizes. Considers bolted and welded connections in steel design. Introduces determination of reinforcing steel sizes and arrangements in concrete members. Prerequisite: MTH 116. Lecture 3 hours per week.

BLD 231 Construction Estimating (3 cr.)
Focuses on materials take-off and computing quantities from working drawings and specifications. Includes methods for computing quantities of concrete, steel, masonry, roofing, excavation. Deals with pricing building components, materials and processes, as well as transportation and handling costs, markup discount procedures, equipment costs, and labor rates. Prerequisites: ARC 131, ARC 132 or instructor's approval. Lecture 3 hours per week.

BLD 247 Construction Planning and Scheduling (3 cr.)
Introduces principles of planning and scheduling a construction project. Includes sequence of events and processes on a construction site. Studies scheduling techniques, including the critical path method. Lecture 3 hours per week.

BUS - BUSINESS MANAGEMENT AND ADMINISTRATION

BUS 100 Introduction to Business (3 cr.)
Presents a broad introduction to the functioning of business enterprise within the U.S. economic framework. Introduces economic systems, essential elements of business organization, production, human resource management, marketing, finance, and risk management. Develops business vocabulary. Lecture 3 hours per week.

BUS 111 Principles of Supervision I (3 cr.)
Teaches the fundamentals of supervision, including the primary responsibilities of the supervisor. Introduces factors relating to the work of supervisor and subordinates. Covers aspects of leadership, job management, work improvement, training and orientation, performance evaluation, and effective employee/supervisor relationships. Lecture 3 hours per week.

BUS 116 Entrepreneurship (3 cr.)
Presents the various steps considered necessary when going into business. Includes areas such as product-service analysis, market research evaluation, setting up books, ways to finance start-up, operations of the business, development of business plans, buyouts versus starting from scratch, and franchising. Uses problems and cases to demonstrate implementation of these techniques. Lecture 3 hours per week.

BUS 117 Leadership Development (3 cr.)
Covers interpersonal relations in hierarchical structures. Examines the dynamics of teamwork, motivation, handling change and conflict and how to achieve positive results through others. Lecture 3 hours per week.

BUS 125 Applied Business Mathematics (3 cr.)
Applies mathematical operations to business process and problems, such as wages and payroll, sales and property taxes, checkbook records and bank reconciliation, depreciation, overhead, distribution of profit 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 146 Introduction to Labor Relations (3 cr.)
Examines history of the labor unions, labor contracts, bargaining processes, philosophy of unionism; use of bargaining techniques for non-wage issues; legal, social, and economic context of labor-management relations; responsibilities and

duties of unions and management; analysis of public policy; and current state of the labor movement. May apply simulation and cases of arbitration and collective bargaining procedures. 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. Prerequisite: BUS 116 or BUS 200, or school approval. Lecture 3 hours per week.

BUS 200 Principles of Management (3 cr.)
Teaches management and the management functions of planning, organizing, leading, and controlling. Focuses on application of management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Lecture 3 hours per week.

BUS 201 Organizational Behavior (3 cr.)
Presents a behaviorally oriented course combining the functions of management with the psychology of leading and managing people. Focuses on the effective use of human resources through understanding human motivation and behavior patterns, conflict management and resolution, group functioning and process, the psychology of decision-making, and the importance of recognizing and managing change. Lecture 3 hours per week.

BUS 202 Applied Management Principles (3 cr.)
Focuses on management practices and issues. May use case studies and/or management decision models to analyze problems in developing and implementing a business strategy while creating and maintaining competitive advantage. Prerequisite: BUS 200. Lecture 3 hours per week.

BUS 205 Human Resource Management (3 cr.)
Introduces employment, selection, and placement of personnel; forecasting; job analysis; job descriptions; training methods and programs; employee evaluation systems; compensation; benefits; and labor relations. 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 road maps. Lecture 3 hours per week.

BUS 209 Continuous Quality Improvement (3 cr.)
Presents the different philosophies in Quality Control. Introduces students to Process Improvement, Team Development, Consensus Building, and Problem-Solving Strategies. Identifies methods for Process Improvement in manufacturing and service organizations, which includes Statistical Process Control when used in the quality control function of business and industry. Lecture 3 hours per week.

BUS 220 Introduction to Business Statistics (3 cr.)
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 numbers, probability theory, and time series analysis. Prerequisite or co-requisite: keyboarding competence. Lecture 3 hours per week.

BUS 221 Business Statistics I (3 cr.)
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. Prerequisite: MTH 163 or school approval. Lecture 3 hours per week.

BUS 226 Computer Business Applications (3 cr.)
Provides a practical application of software packages, including spreadsheets, word processing, database management, and presentation graphics. Includes the use of programs in accounting techniques, word processing, and management science application. Prerequisite or co-requisite: keyboarding competence. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

BUS 240 Introduction to Business Law (3 cr.)
Presents an introduction to the American legal system, including an overview of the courts, civil, and criminal law. Develops an in-depth understanding of contracts, agency law, and business organizations. Also includes an overview of property, UCC Sales, and Commercial Paper. Lecture 3 hours per week.

BUS 260 Planning for Small Business (3 cr.)
Provides knowledge of the development of a business plan, which can be used to acquire capital and serve as a management guide. Combines knowledge that has been acquired in the areas of planning, management, and finance using proforma statements and marketing. Covers internet searching techniques. Recommended as a capstone course. Lecture 3 hours per week.

BUS 265 Ethical Issues in Management (3 cr.)
Examines the legal, ethical, and social responsibilities of management. May use cases to develop the ability to think and act responsibly. Lecture 3 hours per week.

BUS 290 Coordinated Internship in Business Management and Administration (3 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 15 hours per week.

BUS 298 Seminar and Project in Business Management and Administration (3 cr.)
Requires completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. Prerequisite: Students should have completed most of the management courses before enrolling in this course. Lecture 3 hours per week.

CHD - CHILDHOOD DEVELOPMENT

CHD 117 Introduction to Reading Methods (3 cr.)
Introduces current practices of teaching reading in the elementary school. Familiarizes students with materials currently in use and emphasizes observation of various reading techniques and trends in the classroom. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

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 storytelling and story reading, and stresses the use of audiovisual 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, use of classroom time and materials, approaches to education for young children, professionalism, and curricular procedures. Lecture 3 hours per week.

CHD 121 Childhood Educational Development I (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 145 Teaching Art, Music, and Movement to Children (3 cr.)
Provides experiences in developing the content, methods, and materials for directing children in art, music, and movement activities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 146 Math, Science, and Social Studies for Children (3 cr.)
Provides experiences in developing the content, methods, and materials for directing children in math, science, and social studies activities. Lecture 2 hours. Laboratory 2 hours. Total 4 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 levels. 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. Covers scheduling, preparing age-appropriate activities, health and safety policies, record keeping, and reporting to parents. Lecture 3 hours per week.

CHD 205 Guiding the Behavior of Children (3 cr.)
Explores positive ways to build self-esteem in children and help them develop self-control. Presents practical ideas for encouraging pro-social behavior in children and emphasizes basic skills and techniques in classroom and group 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, including the gifted child. Explores positive techniques for managing behavior and adapting materials for classroom use. Lecture 3 hours per week.

CHD 215 Models of Early Childhood Programs (3 cr.)
Studies and discusses the various models and theories of early childhood education programs, including current trends and issues. Presents state licensing and staff requirements. Lecture 3 hours per week.

CHD 216 Early Childhood Programs, School, and Social Change (3 cr.)
Explores methods of developing positive, effective relations 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 nontraditional family and cultural patterns, and lists community resources. Lecture 3 hours per week.

CHD 220 Introduction to School-Age Child Care (3 cr.)
Examines the purposes of school-age child care in today's society, the role of adults within school-age child care, and the state of the profession of school-age child care. Lecture 3 hours per week.

CHD 225 Curriculum Development for School-Age Child Care (3 cr.)
Explores the creative activities, techniques, interactions, and program development that promote positive social and emotional growth in school-age children. Emphasizes positive development through everyday programming and experiences. Lecture 3 hours per week.

CHD 230 Behavior Management for School-Age Child Care (3 cr.)
Discusses the development of social skills that school-age children need for self management, including self-discipline, self-esteem, and coping with stress and anger. Explores ways to effectively guide and discipline school-age children, focusing on how adults can facilitate positive prosocial and self-management skills. Lecture 3 hours per week.

CHD 235 Health and Recreation for School-Age Child Care (3 cr.)
Examines the physical growth of school-age children and the role of health and recreation in school-age child development. Explores the use of medication, misuse of drugs, health issues of children, and the availability of community resources. Lecture 3 hours per week.

CHD 240 Play and Early Childhood Curriculum Development (3 cr.)
Explores and examines how curriculum supports play. Focuses on competencies that are appropriate to early childhood education. Studies theories of play development, instructional strategies that place play at the center of curriculum, and how play can be used to improve developmentally-based early childhood education. Lecture 3 hours per week.

CHD 265 Advanced Observation & 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 through 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 Child Care Programs (3 cr.)
Examines the 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 1 Chemistry I (4 cr.)
Presents basic inorganic and organic principles to students with little or no chemistry background. Taught as pass/fail, the course can be taken in subsequent semesters as necessary until course objectives are completed. The credits are not applicable to any of the college's academic programs, although high school level chemistry or higher may be required for entrance into certain programs. The credits do not transfer. Prerequisite: MTH 3 or equivalent. Lecture 4 hours per week.

CHM 101 General Chemistry I (4cr.)
Emphasizes experimental and theoretical aspects of inorganic, organic, and biological chemistry. Discusses general chemistry concepts as they apply to issues within our society and environment. Designed for the non-science major. Prerequisite: MTH 3 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 102 General Chemistry II (4cr.)
Emphasizes experimental and theoretical aspects of inorganic, organic, and biological chemistry. Discusses general chemistry concepts as they apply to issues within our society and environment. Designed for the non-science major. Prerequisite: CHM 101. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 111 College Chemistry I (4 cr.)
Explores the fundamental laws, theories and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Requires a strong background in mathematics. Co-requisites: MTH 163, MTH 166 or MTH 173. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 112 College Chemistry II (4 cr.)
Explores the fundamental laws, theories and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Requires a strong background in mathematics. Prerequisite: CHM 111. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 241 Organic Chemistry I (3 cr.)
Introduces fundamental chemistry of carbon compounds, including structures, physical and chemical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Prerequisite: CHM 112 or equivalent. Co-requisite: CHM 245.

CHM 242 Organic Chemistry II (3 cr.)
Introduces fundamental chemistry of carbon compounds, including structures, physical and chemical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Prerequisite: CHM 241. Co-requisite: CHM 246. Lecture 3 hours per week.

CHM 243 Organic Chemistry Laboratory I (1 cr.)
Provides a laboratory experience for students in organic synthesis and qualitative organic analysis. Prerequisite: CHM 112 or permission of instructor. Co-requisite: CHM 241. Laboratory 3 hours per week.

CHM 244 Organic Chemistry Laboratory II (1 cr.)
Provides a laboratory experience for students in organic synthesis and qualitative organic analysis. Prerequisite: CHM 112 or permission of instructor. Co-requisite: CHM 242. Laboratory 3 hours per week.

CHM 245 Organic Chemistry Laboratory I (2 cr.)
Introduces fundamental chemistry of carbon compounds, structures, and properties. Emphasizes reaction mechanisms and synthesis. Includes qualitative organic analysis. Co-requisite: CHM 241. Laboratory 6 hours per week.

CHM 246 Organic Chemistry Laboratory II (2 cr.)
Introduces fundamental chemistry of carbon compounds, structures, and properties. Emphasizes reaction mechanisms and synthesis. Includes qualitative organic analysis. Co-requisite: CHM 242. Laboratory 6 hours per week.

CIV - CIVIL ENGINEERING TECHNOLOGY

CIV 135 Construction Management and Estimating (3 cr.)
Teaches the equipment and methods used in construction. Includes principles and economics of construction, planning and management, and principles of estimating primarily using highway and building project examples. Co-requisite: MTH 115 or equivalent. Lecture 3 hours per week.

CIV 160 Transportation Engineering (3 cr.)
Presents the practical application of transportation design including administration, location studies, traffic surveys, alignment design, drainage design, intersection and interchange design, pavement types and pavement design. Co-requisite: MTH 115 or instructor's approval. Lecture 3 hours per week.

CIV 171 Surveying I (3 cr.)
Introduces surveying equipment, procedures, and computations, including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations, and introduction to topography. Prerequisite or co-requisite: MTH 115 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 172 Surveying II (3 cr.)
Introduces surveys for transportation systems, including the preparation and analysis of topographic maps, horizontal and vertical curves, earthwork and other topics related to transportation construction. Prerequisite: CIV 171 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 190 Coordinated Internship in Civil Engineering Technology (3 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 15 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. Prerequisite: MTH 115 or equivalent. Lecture 2 hours per week.

CIV 226 Soil Mechanics Laboratory (1 cr.)
Introduces practical soil sampling; classification of unified, ASTM and ASSHTO specifications; laboratory testing of soils to predict engineering performance. Co-requisite: CIV 225. Laboratory 2 hours per week.

CIV 241 Applied Hydraulics and Drainage I (3 cr.)
Presents the basic fundamentals of hydrology and hydraulics to the practical problems of drainage design. Stresses the use of design aids with supportive theory to ensure an understanding of the background, the theory of development, basic assumptions and limitations of the various methods of estimating storm water run off, and hydraulic structure design. Prerequisite: MTH 116 or equivalent. Lecture 3 hours per week.

CIV 242 Applied Hydraulics and Drainage II (3 cr.)
Presents the basic fundamentals of hydrology and hydraulics to the practical problems of drainage design. Stresses the use of design aids with supportive theory to ensure an understanding of the background, the theory of development, basic assumptions and limitations of the various methods of estimating storm water run off, and hydraulic structure design. Prerequisite: CIV 241. Lecture 3 hours per week.

CIV 245 Storm Water Management (3 cr.)
Focuses on hydrographic analysis and flood routing conforming to soil conservation techniques and applied methods of retention-detention design employed by various governmental agencies in Virginia. Prerequisite: CIV 242 or equivalent. Lecture 3 hours per week.

CIV 260 Surveying Exam Preparation (3 cr.)
Provides preparation for licensure of surveyors by explaining and practicing problems typical of those appearing in the surveyors' state board examination. Reviews state requirements for licensing of surveyors, including rules, regulations and ethics. CIV 171 and 172 or instructor approval. Lecture 3 hours per week.

CIV 265 Curves and Earthwork (3 cr.)
Studies computations of simple, compound and transition curves: grades and vertical curves; earthwork and haul quantities. Prerequisite: CIV 172 or equivalent. Lecture 3 hours per week.

CIV 270 Utilizing Surveying Software (3 cr.)
Introduces computer applications for conventional coordinate-geometry (COGO) calculations. Studies and evaluates numerous COGO software and their associated drafting packages. Includes calculations and drafting of traverse adjustment, subdivision, curves, and others. Prerequisite: CIV 172 or equivalent. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CSC - COMPUTER SCIENCE

CSC 110 Introduction to Computing (3 cr.)
Introduces problem solving through computer applications and programming language. Examines development of computers, social and ethical implications of computers, and properties of programming languages. Covers input, storage, data manipulation, software, and hardware. Prerequisite: Competency level in mathematics must exceed MTH 3 as exhibited by a placement test or a passing grade in MTH 3. Satisfactory score on reading placement test or passing grade in ENG 4. Lecture 3 hours per week.

CSC 155 Computer Concepts and Applications (3 cr.)
Introduces basic hardware and software concepts of computer usage, programming languages and the computer's impact on society. Includes applications of various types of software to illustrate how computers are used in sciences, social sciences, humanities, and education. Covers the use of an operating system, word processing, spreadsheets, e-mail, library access, database access and retrieval, presentation graphics, and the Internet. Lecture 3 hours per week.

CSC 195 Technology in the Classroom (3 cr.)
Provides an overview of the field of educational computing. Includes computer hardware and software, the impact of computers on the educational process, curriculum applications of computers, a brief overview of evaluation and installation of software, selection and use of hardware, including handheld calculators, and an introduction to programming. Prerequisite or co-requisite: CSC 155 or equivalent. Lecture 3 hours per week.

CSC 200 Introduction to Computer Science (3 cr.)
Provides a broad introduction to computer science. Discusses architecture and function of computer hardware, including networks and operating systems, data and instruction representation and data organization. Covers software, algorithms, programming languages and software engineering. Discusses artificial intelligence and theory of computation. Includes a hand-on component with oral and written presentations. Prerequisite: MTH 166 or equivalent with a grade of "C" or better. Lecture 3 hours per week.

CSC 201 Computer Science I (4 cr.)
Introduces algorithm and problem solving methods. Emphasizes structured programming concepts, elementary data structures and the study and use of a high level programming language. Co-requisite: MTH 173 or equivalent or school approval. Lecture 4 hours per week.

CSC 202 Computer Science II (4 cr.)
Examines data structures, introduction to object oriented design, and algorithm analysis. Covers data structures (including sets, strings, stacks, queues, arrays, records, files, linked lists, and trees), polymorphism, inheritance, exceptions, interfaces, abstract data types, algorithm analysis (including searching and sorting methods), and file structures. Prerequisite: CSC 201 with a grade of "C" or better. Co-requisite: MTH 174. Lecture 4 hours per week.

CSC 205 Computer Organization (4 cr.)
Examines the hierarchical structure of computer architecture. Focuses on multilevel machine organization. A simple assembler language is used by students to complete programming projects. Includes processors, instruction execution, addressing techniques, data representation and digital logic. Prerequisite: CSC 202. Lecture 4 hours per week.

CSC 210 Programming with C++ (4 cr.)
Includes language syntax, problem solving techniques, top-down refinement, procedure definition, loop invariance, theory of numerical errors and debugging. Covers the syntax of the C++ language. Prerequisite: CSC 201 and 202, EGR 125, or approval from instructor. Co-requisite: MTH 173. Lecture 4 hours per week.

CST - COMMUNICATION STUDIES AND THEATRE

(formerly Speech and Drama – SPD)

CST 100 Principles of Public Speaking (3 cr.)
Applies theory and principles of public address with emphasis on preparation and delivery. Lecture 3 hours per week.

CST 105 Oral Communication (3 cr.)
Studies effective communication with emphasis on speaking and listening techniques, interpersonal communications and public speaking. Lecture 3 hours per week.

CST 110 Introduction to Speech Communication (3 cr.)
Examines the elements affecting speech communication at the individual, small group, and public communication levels with emphasis on practice of communication at each level. Lecture 3 hours per week.

CST 151 Film Appreciation I (3 cr.)
Course aims to increase student's knowledge and enjoyment of film and film criticism through discussion and viewing of movies. Course examines the cultural, social, and artistic contributions and impact of films on individuals and on larger society. Overview of development of film genres is also studied. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 04 if required by reading placement test. Lecture 3 hours per week.

DIT - DIETETICS

DIT 121 Nutrition I (3 cr.)
Studies food composition, dietary guidelines, and nutrients essential to healthy human life. Analyzes nutrient function and metabolism. Lecture 3 hours per week.

DNA - DENTAL ASSISTING

DNA 100 Introduction to Oral Health Professions (1 cr.)
Provides an introduction to the oral health profession and covers basic terminology, historical perspective, the credentialing process, accreditation, professional organizations, and legal and ethical considerations. Prerequisite or co-requisite: completion of Pre-Dental Assisting Career Studies Certificate. Lecture 1 hour per week.

DNA 103 Introduction to Oral Health (1 cr.)
Teaches anatomy of the head and neck, the hard and soft tissues of the oral cavity, tooth morphology, deciduous and permanent dentition, as well as dental pathology and terminology. Prerequisite or co-requisite: completion of Pre-Dental Assisting Career Studies Certificate. Lecture 1 hour per week.

DNA 108 Dental Science (3 cr.)
Studies head and neck anatomy, tooth morphology, pathological conditions of the oral cavity, disease processes, and microbiology. Prerequisites: completion of courses in the Pre-Dental Assisting Career Studies Certificate. Prerequisites or corequisites: DNA 100 and DNA 103. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 109 Practical Infection Control (3 cr.)
Studies principles of management of disease producing microorganisms and associated diseases. Emphasizes sterilization, asepsis, and disinfection techniques applicable in the dental office. Prerequisites: completion of courses in Pre-Dental

Assisting Career Studies Certificate. Prerequisites or co-requisites: DNA 100, DNA 103, and DNA 108. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 110 Dental Materials (3 cr.)
Studies the materials utilized in the laboratory aspect of dentistry as support in treatment. Emphasizes the characteristics, manipulation, economical control, storage, and delivery of materials. Prerequisites: completion of courses in Pre-Dental Assisting Career Studies Certificate. Prerequisites or co-requisites: DNA 100, DNA 103, DNA 108, and DNA 109. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 113 Chairside Assisting I (3 cr.)
Provides instruction on the principles of clinical chairside dental assisting, dental equipment use and maintenance, safety, instrument identification, tray set-ups by procedures, and patient data collection. Emphasizes patient management during restorative procedures. Prerequisites: completion of courses in Pre-Dental Assisting Career Studies Certificate. Prerequisites or co-requisites: DNA 100, DNA 103, DNA 108, DNA 109, and DNA 110. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 114 Chairside Assisting II (4 cr.)
Introduces the student to the various dental specialties, including oral surgery, orthodontics, periodontics, prosthodontics, endodontics, and pediatric dentistry. Emphasizes integration and application of previous course content to operative dental procedures. Prerequisite: DNA 190. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

DNA 119 Dental Therapeutics (1 cr.)
Exposes students to concepts and terminology related to pharmacology, pain control, and dental medicinal agents. Emphasizes the use of materials in patient treatment. Prerequisites: DNA 100, DNA 103, DNA 108, DNA 109, and DNA 110. Lecture 1 hour per week.

DNA 120 Community Health (1 cr.)
Studies topics related to community health issues including identification of specific diseases, symptoms, causes and effects. Emphasizes the promotion of oral health in the community through patient education in oral home care techniques, dietary counseling, plaque control procedures, and application of medicinal agents. Prerequisites: DNA 100, DNA 103, DNA 108, DNA 109, and DNA 110. Lecture 1 hour per week.

DNA 130 Dental Office Management (3 cr.)
Exposes students to and provides practical experience in the legal aspects of dental office management with regard to ethics, jurisprudence, appointment control, recall systems, reception techniques, telephone techniques, accounts receivable and payable, payroll insurance claims, inventory control, and professional conduct in a dental office. Prerequisites: DNA 100 and DNA 103. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 134 Dental Radiology and Practicum (3 cr.)
Teaches the physics of dental radiation and safety, equipment operation, cone placement for the parallel and bisection techniques, panoramic exposures, mounting and film processing. Prerequisites: DNA 100, DNA 103, DNA 108, DNA 109, and DNA 110. Students must be at least 18 years old to enroll in course. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 140 Externship (5 cr.)
Exposes students to the fast pace of a dental practice while they perform support services with an established team. Prerequisites: DNA 114 and DNA 190. Co-requisites: DNA119, DNA 120, and DNA 134. Lecture 1 hour. Laboratory 12 hours. Total 13 hours per week.

DNA 190 Coordinated Internship in Dental Assisting (2 cr.)
Provides students clinical experience to supplement DNA 113 through hands-on experience in the dental clinic at JSRCC. Students will be assisting staff. Prerequisite: completion of Pre-Dental Assisting Career Studies Certificate. Prerequisites or co-requisites: DNA 100, DNA 103, DNA 108, DNA 109, DNA 110, and DNA 113. Laboratory 8 hours per week.

DNL - DENTAL LABORATORY

DNL 100 Professional Ethics and Dental History (2 cr.)
Introduces students to dental professional and supporting personnel; history and development of dentistry; the role of the dental auxiliaries in clinical settings and to members of dental laboratory craft and others of the dental health team; dental ethics and jurisprudence; professional and educational opportunities. Prerequisites: successful completion of all placement tests; an interview with the program head to establish interest, motivation, and aptitudes for dental laboratory technology. Lecture 2 hours per week.

DNL 110 Dental Laboratory Materials (3 cr.)
Studies the chemical composition, physical properties, and uses of metallic and non-metallic dental materials, dentures and tooth resins, porcelain, waxes and duplicating materials. The laboratory exercises are designed to illustrate the properties and uses of the materials studied, including their inherent limitations. Students observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Prerequisites: successful completion of all placement tests; an interview with the program head to determine interests, motivation, and aptitudes related to dental lab technology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNL 120 Dental Anatomy and Physiology (3 cr.)
Introduces students to human anatomy and physiology. Emphasizes regions of the head and neck and the primary and permanent teeth. Laboratory exercises include accurate scale drawings of the permanent teeth and tooth carvings of the permanent teeth. Students observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Prerequisites: successful completion of all placement tests; an interview with the program head to determine interests, motivation, and aptitudes related to dental lab technology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNL 130 Introduction to Complete Dentures (6 cr.)
Introduces the student to the basic principles, knowledge, and skills involved in the proper construction of complete dentures. Includes introduction to articulation and occlusal harmony followed by repair, relining, and reconstruction techniques. Students observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Prerequisites: successful completion of all placement tests; an interview with the program head in order to determine interest, motivation, and aptitudes related to dental lab technology. Lecture 3 hours. Laboratory 9 hours. Total 12 hours per week.

DNL 135 Introduction to Removable Partial Dentures (6 cr.)
Introduces students to the principles of surveying and designing of removable partial denture frame works followed by the fabrication and repair of removable partial dentures. Students will observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Prerequisites: successful completion of all placement tests; an interview with the program head in order to determine interest, motivation, and aptitudes in dental lab technology. Lecture 3 hours. Laboratory 9 hours. Total 12 hours per week.

DNL 136 Principles of Occlusion (3 cr.)
Provides a general overview of the masticatory system and the dynamics of mandibular movement. Occlusal restorations are fabricated in wax on a semi-adjustable articulator according to functional criteria. Students observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNL 137 Orthodontic and Pedodontic Appliances (3 cr.)
Develops the student's ability to fabricate and repair pedodontic and orthodontic appliances. This laboratory-didactic course utilizes programmed instruction aug-

mented by individualized assistance and demonstration. Students observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Prerequisite: an interview with the program head to determine interest, motivation, and aptitudes in dental lab technology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNL 138 Introduction to Fixed Prosthodontics (6 cr.)
Introduces students to fixed prosthodontic restorations. The student practices the techniques of die preparation and the fabrication of inlays, crowns, and fixed partial dentures utilizing gold alloy, shaded acrylic and composite materials. Students observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Prerequisite: an interview with the program head to determine interest, motivation, and aptitudes in dental lab technology. Lecture 3 hours. Laboratory 9 hours. Total 12 hours per week.

DNL 160 Removable Prosthodontic Techniques (3 cr.)
Introduces the student to repairing, rebasing, and relining complete and partial dentures. Provides additional experience in fabricating upper and lower complete dentures. Introduces the student to mounting, setting of teeth, processing and finishing removal partial dentures. Studies the need for, and how to, attain balanced occlusion in removable partial denture prosthetics. Prerequisite: an interview with the program head in order to determine interest, motivation, and aptitudes in dental lab technology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNL 175 Dental Laboratory Management (2 cr.)
Teaches ethical principles, laws, and organizations, which regulate the dental technician and the commercial dental laboratory. Introduces the business fundamentals of operating the dental laboratory. Includes management, marketing, accounting fundamentals, human resources, production, finance, and dental laboratory design. Develops job survival skills. Prerequisite: an interview with the program head in order to determine interest, motivation, and aptitudes for dental laboratory activities. Co-requisite: passing score on computer competency placement test or satisfactory completion of ITE 115 or CSC 155. Lecture 2 hours per week.

DNL 216 Dental Laboratory Practicum (6 cr.)
Provides practical experiences in two specialties of dental laboratory technique. Designed to strengthen the student's skill and knowledge by experience in the utilization of advanced techniques. Gives practical experience in a commercial dental laboratory. Seminars conducted. Student's laboratory work evaluated for clinical acceptability during each laboratory session. Prerequisite: an interview with the program head to determine interest, motivation, and aptitudes in dental lab technology. Lecture 1 hour. Laboratory 15 hours. Total 16 hours per week.

DNL 220 Introduction to Dental Ceramics (6 cr.)
Introduces students to ceramic and porcelain-fused-to-metal dental restorations. Includes techniques of design and fabrication of metal substructures followed by ceramic firing techniques. Discusses various ceramic alloy techniques. Students observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Prerequisite: an interview with the program head to determine interest, motivation, and aptitudes in dental lab technology. Lecture 3 hours. Laboratory 9 hours. Total 12 hours per week.

DNL 231 Advanced Dental Laboratory Techniques I (2 cr.)
Introduces the theory of advanced dental laboratory techniques and new technological developments that are currently used in dentistry. Prerequisite: an interview with the program head to determine interest, motivation, and aptitudes in dental lab technology. Lecture 2 hours per week.

DNL 240 Comprehensive Review in Dental Laboratory Technology (2 cr.)
Provides concentrated review of related subject matter pertaining to the recognized graduate examination (National Certification Examination). Prerequisite: an interview with the program head to determine interest, motivation, and aptitudes in dental lab technology. Lecture 2 hours per week.

DNL 298 Seminar and Project in Dental Laboratory (1-2 cr.)
Requires completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. Lecture 1-2 hours per week.

DRF - DRAFTING

DRF 111 Technical Drafting I (3 cr.)
Introduces technical drafting from the fundamentals through advanced drafting practices. Teaches lettering, metric construction, technical sketching, orthographic projection, sections, intersections, development, fasteners, theory and applications of dimensioning and tolerances. Includes pictorial drawing, and preparation of working and detailed drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DRF 165 Architectural Blueprint Reading (3 cr.)
Emphasizes reading, understanding and interpreting standard types of architectural drawings, including plans, elevation, sections, and details. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 231 Computer-Aided Drafting I (3 cr.)
Teaches computer-aided drafting concepts and equipment. Develops a general understanding of components and operating a typical CAD system. DRF 111 is recommended for individuals with no experience in technical drawing prior to enrolling in DRF 231. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 232 Computer-Aided Drafting II (3 cr.)
Teaches advanced operation in computer-aided drafting. Prerequisite: DRF 231. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 233 Computer-Aided Drafting III (3 cr.)
Introduces programming skills and exposes student to geometric modeling. Focuses on proficiency in production drawing using a CAD system. Prerequisite: DRF 232. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 238 Computer-Aided Modeling and Rendering (3 cr.)
Focuses on training students in the contemporary techniques of 3D modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photo-realism, which enables the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-throughs that will bring the third dimension to architectural designs. 3-D Studio is the primary software used in this course. Prerequisite: DRF 232. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL - DIESEL

DSL 111 Introduction to the Diesel Engine (2 cr.)
Studies the modern diesel engine, including its fuel, cooling, induction, and exhaust systems. Covers construction, fabrication, maintenance, tune-up, and minor repair and adjustment. Lecture 1 hour, Laboratory 2 hours. Total 3 hours per week.

DSL 123 Diesel Engine Systems I (2 cr.)
Studies basic operational theory of the two- and four-stroke cycle diesel engine used in public transportation vehicles. Covers the construction and function of the diesel engine and the major components as they relate to air, exhaust, and fuel systems. Emphasizes diesel engine tune-up and troubleshooting theory. Prerequisites: sponsorship by a public transit authority and school approval. Part I of II. Lecture 2 hours per week.

DSL 124 Diesel Engine Systems II (2 cr.)
Studies basic operational theory of the two- and four-stroke cycle diesel engine used in public transportation vehicles. Covers the construction and function of the diesel engine and the major components as they relate to air, exhaust, and fuel systems. Emphasizes diesel engine tune-up and troubleshooting theory. Prerequisites: sponsorship by a public transit authority and school approval. Part II of II. Lecture 2 hours per week.

DSL 123 Diesel Engine Systems I (2 cr.)
Studies basic operational theory of the two and four-stroke cycle diesel engine used in public transportation vehicles. Covers the construction and function of the diesel engine and the major components as they relate to air, exhaust, and fuel systems. Emphasizes diesel engine tune-up and troubleshooting theory. Prerequisites: sponsorship by a public transit authority and divisional approval. Lecture 2 hours per week.

DSL 126 Diesel Engine Reconditioning (6 cr.)
Provides basic knowledge of the construction, design, and application of selected modern diesel engines and their components. Covers induction and exhaust systems, cooling and lubricating systems, and fuel injection and governing systems. Provides opportunity to disassemble, inspect, recondition, reassemble, and test selected engines. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

DSL 131 Diesel Fuel Systems and Tune-Up (4 cr.)
Teaches maintenance, adjustment, testing, and general repair of the typical fuel injection components used on non-automotive diesel engines. Includes engine and fuel system tune-up procedures and troubleshooting using current diagnostic equipment. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

DSL 141 Transportation Electrical Systems I (2 cr.)
Studies basic operational theory of electrical systems used in public transportation vehicles. Covers electrical symbols, schematics, troubleshooting procedures, as well as the function, construction, and operation of the electrical system and its components. Prerequisites: sponsorship by a public transit authority and school approval. Lecture 2 hours per week.

DSL 142 Transportation Electrical Systems II (2 cr.)
Continues the study of basic operational theory of electrical systems used in public transportation vehicles. Includes electrical symbols, schematics, troubleshooting procedures, as well as the function, construction, and operation of the electrical system and its components. Prerequisites: sponsorship by a public transit authority and school approval. Lecture 2 hours per week.

DSL 150 Mobile Hydraulics and Pneumatics (3 cr.)
Introduces the theory, operation and maintenance of hydraulic/pneumatic systems and devices used in mobile applications. Emphasizes the properties of fluid, fluid flow, fluid states, and the application of Bernoulli's equation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL 153 Power Trains I (3 cr.)
Focuses on manual transmissions. Examines various types of power trains and their components, such as multi-disc clutch, multi-speed transmissions, drive lines, and differentials. Includes disassembly and assembly of various components. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL 154 Power Trains II (3 cr.)
Focuses on hydrostatic and heavy-duty automatic transmissions. Examines various types of power trains and their components, such as torques, drive lines, and differentials. Includes disassembly and assembly of various components. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL 155 Heavy Duty Suspension and Service (3 cr.)
Examines suspensions used on heavy-duty trucks and teaches preventative maintenance and service procedures. Includes nomenclature, theory of operation and services, and repair of heavy-duty truck suspension systems, including tires and wheels and steering gear and connecting linkage. Provides opportunity for preventative maintenance inspections and service procedures on heavy-duty vehicles. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL 160 Air Brake Systems (3 cr.)
Studies the basic operational theory of pneumatic and air brake systems as used in heavy-duty and public transportation vehicles. Covers various air control valves, test system components, and advanced air system schematics. Teaches proper service and preventative maintenance of system. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL 161 Air Brake Systems I (2 cr.)
Studies the basic operational theory of pneumatic and air brake systems used in public transportation vehicles. Covers various air control valves, air and test system components, and advanced air system schematics. Prerequisites: sponsorship by a public transit authority and school approval. Lecture 2 hours per week.

DSL 162 Air Brake Systems II (2 cr.)
Continues the study of basic operational theory of pneumatic and air brake systems used in public transportation vehicles. Covers various air control valves, air system components, and advanced air system schematics. Prerequisites: sponsorship by a public transit authority and school approval. Lecture 2 hours per week.

DSL 171 Transportation Air Conditioning I (2 cr.)
Studies the fundamentals of air conditioning systems used in public transportation vehicles. Includes the basic theory of operation, repair, servicing, and troubleshooting of the air conditioning system. Prerequisites: sponsorship by a public transit authority and school approval. Lecture 2 hours per week.

DSL 172 Transportation Air Conditioning II (2 cr.)
Studies the fundamentals of air conditioning systems used in public transportation vehicles. Includes the basic theory of operation, repair, servicing, and troubleshooting of the air conditioning system. Prerequisites: sponsorship by a public transit authority and school approval. Lecture 2 hours per week.

DSL 176 Transportation Air Conditioning (2 cr.)
Studies fundamentals of transportation air conditioning. Includes repair, service, and troubleshooting of the refrigeration systems used in road vehicles and heavy equipment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

DSL 195 Transportation Electrical Systems (3 cr.)
Studies the theory and operation of various trucks and equipment electrical systems. Covers starting, charging, lighting systems, and multiplexing. Uses modern test equipment for measurement, adjusting, troubleshooting, and repair of electrical and electronic systems. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DSL 197 Cooperative Education in Diesel Mechanics Technology (3 cr.)
Supervises on-the-job training for pay in approved business, industrial and service firms, coordinated by the college. Laboratory 15 hours per week.

ECO - ECONOMICS

ECO 120 Survey of Economics (3 cr.)
Presents a broad overview of economic theory, history, development, and application. Introduces terms, definitions, policies, and philosophies of market economies. Provides some comparison with other economic systems. Includes some degree of exposure to microeconomic and macroeconomic concepts. Lecture 3 hours per week.

ECO 201 Principles of Economics I–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. Prerequisites: English placement recommendation for ENG 111, mathematics placement recommendation at level 2 or higher, and satisfactory completion of ENG 4 if required by reading placement test. Prerequisites may be waived only by school approval. Lecture 3 hours per week.

ECO 202 Principles of Economics II–Microeconomics (3 cr.)

Introduces the basic concepts of microeconomics. Explores the free market concepts with coverage of economic models and graphs, scarcity and choices, supply and demand, elasticity's, marginal benefits and cost, profits, and production and distribution. Prerequisites: English placement recommendation for ENG 111, mathematics placement recommendation at level 2 or higher, and satisfactory completion of ENG 4 if required by reading placement test. Prerequisites may be waived only by school approval. Lecture 3 hours per week.

EDU - EDUCATION

EDU 114 Driver Task Analysis (3 cr.)

Introduces the "driver task" as related to the highway transportation system and factors that influences performance ability. Prepares students so they may be eligible to take certification exams for driving school instructors in both public and private schools. Prerequisites: Must be eligible for ENG 3 and 5 or ESL 13. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 140 Music and the Arts for Education (3 cr.)

Examines the nature and significance of creative play in education. Emphasizes an understanding of the use of directed activities in the arts, music, and movement. Prepares students with a conceptual framework of how K-12 students learn through creative activity. Lecture 3 hours per week.

EDU 160 Observation and Assessment in Early Care (3 cr.)

Introduces formal and informal methods of gathering data on children. Emphasizes understanding developmental patterns and implications for diagnostic teaching. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 190 Coordinated Internship in Education (2 cr.)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 6 hours per week.

EDU 200 Introduction to Teaching as a Profession (3 cr.)

Provides an orientation to the teaching profession in Virginia, including historical perspectives, current issues, and future trends in education on the national and state levels. Emphasizes information about teacher licensure examinations, steps to certification, teacher preparation and induction programs, and attention to critical shortage areas in Virginia. Includes supervised field placement in a K-12 school. Prerequisites: successful completion of 24 credits of transfer courses. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 214 Instructional Principles of Driver Education (3 cr.)

Analyzes rules and regulations that govern the conduct of Driver Education programs with special emphasis on organization and administration. Includes uses in the classroom, driving range and on the street. Prepares students so they may be eligible to take the state certification exam in driver education. Prerequisite: EDU 114. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 220 Teaching Reading (3 cr.)

Provides instruction in concepts and strategies involved in teaching reading at the K-12 levels. Includes topics on literacy and components and development, various reading programs, technology integration, and assessment tools. May include field placement in a K-12 school. Lecture 3 hours per week.

EDU 225 Audiovisual Materials and Computer Software (3 cr.)

Prepares students to construct graphic teaching aids, to select and develop materials for instructional support, to operate, maintain, and use audiovisual equipment used in the classroom. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 230 Curriculum Development and Instructional Media (3 cr.)

Covers curriculum development for language arts, mathematics, science, social studies, and the arts and includes such topics as influential factors, historical trends, and standards of learning. Incorporates the use of various instructional media and appropriate mergers of the technology with the curriculum. Recommended prerequisites: ENG 112 and CSC 155 or their equivalent. Lecture 3 hours per week.

EDU 235 Health, Safety, and Nutrition Education (3 cr.)

Focuses on the physical needs of children and explores strategies to meet these needs. Emphasizes positive health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases, and safety. Places emphasis on the development of food habits and concerns in food and nutrition. Describes symptoms and reporting procedures for child abuse. Lecture 3 hours per week.

EDU 290 Coordinated Internship in Education (3 cr.)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 9 hours per week.

EDU 295 Teaching Online Project (TOP) (3 cr.)

Provides faculty members the chance to experience and learn, from the learner's perspective, within an online course. Presents similarities and differences between teaching in the face-to-face and online classrooms. Guides learners through examining basic pedagogical principles, critical technological skills, and required administrative tasks, all while they are participating as an online student. Examines if online teaching is right for them, what skills they will need to teach online, what technology they will need to employ and therefore know, and how to engage students to become active learners. Examines some of the potential barriers to successful online learning and at the same time finding strategies for motivating themselves to persist and finish. The course is taught online in an eight-week session. Lecture 3 hours per week.

EDU 295 Instructional Design for Online Learning (IDOL) (3 cr.)

Introduces learners to the fundamentals of creating and organizing online courses according to the ASSURE Model of instructional design and the standards created by Quality Matters. IDOL covers analyzing learners; writing proper learning objectives; ADA compliance; selecting methods, media, and materials to be used within an online course; utilizing those methods, media, and materials; requiring learner participation; evaluating and revising one's course; assessing and measuring performance; and, a self reflection. Prerequisites: basic computer skills, ability to navigate the World Wide Web, experience using Blackboard in teaching for at least one semester, and permission of the instructor. Lecture 3 hours per week.

EGR - ENGINEERING

EGR 110 Engineering Graphics (3 cr.)

Presents theories and principles of orthographic projection. Studies multiview, pictorial drawings and sketches, geometric construction, sectioning, lettering, tolerancing, dimensioning, and auxiliary projections. Studies the analysis and graphic presentation of space relationships of fundamental geometric elements: points, lines, planes and solids. Includes instruction in computer-aided drafting and completion of a design project using computer-aided drawing software, such as Inventor or Solid Works. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EGR 123 Introduction to Engineering Design (2 cr.)

Introduces the fundamental knowledge and experience needed to understand the engineering design process through the basics of electrical, computer, and mechanical systems. Includes the completion of a project in which a specific electro-

mechanical robot kit will be analyzed, assembled, and operated. Students will present project results orally and in writing. Prerequisite or co-requisite: MTH 173. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EGR 124 Introduction to Engineering and Engineering Methods (3 cr.)

Introduces the engineering profession, professionalism, and ethics. Covers problem presentation, engineering calculations, digital computer applications, word processing, worksheets, programming in MATLAB, ALICE, FORTRAN or C++, and elementary numerical methods. Includes completion of a design project. Prerequisite or co-requisite: MTH 173. Lecture 3 hours per week.

EGR 135 Statics for Engineering Technology (3 cr.)

Introduces Newton's Laws, resultants and equilibrium of force systems, analysis of trusses and frames. Teaches determination of centroids, distributed loads and moments of inertia. Covers dry friction and force systems in space. Prerequisite: MTH 115. Lecture 3 hours per week.

EGR 136 Strength of Materials for Engineering Technology (3 cr.)

Presents concepts of stress and strain. Focuses on analysis of stresses and deformations in loaded members, connectors, shafts, beams, columns and combined stress. Prerequisite: EGR 135. Lecture 3 hours per week.

EGR 140 Engineering Mechanics–Statics (3 cr.)

Introduces mechanics of vector forces and space, scalar mass and time, including S.I. and U.S. customary units. Teaches equilibrium, free-body diagrams, moments, couples, distributed forces, centroids, moments of inertia analysis of two-force and multi-force members, and friction and internal forces. Prerequisite: MTH 173. Lecture 3 hours per week.

EGR 206 Engineering Economy (3 cr.)

Presents economic analysis of engineering alternatives. Studies economic and cost concepts, calculation of economic equivalence, comparison of alternatives, replacement economy, economic optimization in design and operation, depreciation, and after tax analysis. Prerequisite or co-requisite: ENG 111. Lecture 3 hours per week.

EGR 216 Computer Methods in Engineering and Technology (3 cr.)

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. Prerequisites or co-requisites: ENG 111, MTH 115, and ITE 115, CSC 155, or passing score on the computer competency exam. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EGR 245 Engineering Mechanics—Dynamics (3 cr.)

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. Prerequisite: EGR 140. Lecture 3 hours per week.

EGR 246 Mechanics of Materials (3 cr.)

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. Prerequisite: EGR 140. Lecture 3 hours per week.

EGR 251 Basic Electric Circuits I (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. Prerequisites: MTH 174 and PHY 241 or equivalent. Lecture 3 hours per week.

EGR 255 Electric Circuits Laboratory (1 cr.)

Teaches principles and operation of laboratory instruments such as VOM, electronic voltmeters, digital multimeters, oscilloscopes, counters, wave generators and power supplies. Presents application to circuit measurements, including transient and steady-state response of simple networks with laboratory applications of laws and theories of circuits plus measurement of AC quantities. Co-requisite: EGR 251. Laboratory 3 hours per week.

EGR 261 Signals and Systems (3 cr.)

Presents the concept of linear continuous-time and discrete-time signals and systems. Covers topics including Laplace transforms and Laplace transform analysis of circuits, time and frequency domain representation of linear systems, methods of linear systems analysis including convolution and Laplace transforms, frequency domain representation of signals including frequency response, filters, Fourier series, and Fourier transforms. Utilizes online data and related computational analysis support to assist with the representation, analysis and applications of signals and systems models. Other topics covered include differential and difference equations, signal modulation and demodulation, Fourier analysis of discrete-time systems, Parseval's theorem, ideal filters, sampling, Laplace Transfer Function representation, and introduction to the *z*-Transform. Prerequisites: EGR 124 or equivalent, EGR 251 or equivalent. Co-requisites: MTH 279 or equivalent and the companion lab course for EGR 261, which is EGR 295: Signals and Systems Laboratory. Lecture 3 hours per week.

EGR 295 Topics in Engineering: Signals and Systems Laboratory (1 cr.)

Utilizes high-level software, such as Matlab®, to formulate and analyze computer models of complex Engineering signals and systems. Topics covered include vector manipulation, plotting, function creation, complex numbers, difference equations, convolution, Fourier Series, DTMF modulation and demodulation, analog filters, frequency response, and sampling and reconstruction. Co-requisite: EGR 261 – Signals and Systems. Laboratory 3 hours per week.

ELE - ELECTRICAL TECHNOLOGY

ELE 138 National Electrical Code Review I (2 cr.)

Covers purpose and interpretation of the National Electrical Code, as well as various charts, code rulings, and wiring methods. Prepares the student to take the journeyman-level exam. Lecture 2 hours per week.

ELE 239 Programmable Controllers (3 cr.)

Deals with installation, programming, interfacing, and concepts of troubleshooting programmable controllers. Prerequisites or co-requisites: ETR 15 and ELE 21 or ETR 164 and ETR 273 or equivalent, or permission of instructor. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS - EMERGENCY MEDICAL SERVICES

EMS 111 Emergency Medical Technician - Basic (6 cr.)

Prepares student for certification as a Virginia and National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Prerequisite: CPR certification at the Health Care Provider level. Co-requisite: EMS 120. Lecture 4 hours. Laboratory 4 hours. Total 8 hours per week.

EMS 112 Emergency Medical Technician-Basic I (3 cr.)
Prepares student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 113 Emergency Medical Technician-Basic II (3 cr.)
Continues preparation of student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 120 Emergency Medical Technician - Basic Clinical (1 cr.)
Observes in a program approved clinical/field setting. Includes topics for both EMS 111 and EMS 113, dependent upon the program in which the student is participating and is a co-requisite to both EMS 111 and EMS 113. Lecture 1 hour per week.

EMS 151 Introduction to Advanced Life Support (4 cr.)
Prepares the student for Virginia Enhanced certification eligibility and begins the sequence for National Registry Intermediate and/or Paramedic certification. Includes the theory and application of the following: foundations, human systems, pharmacology, overview of shock, venous access, airway management, patient assessment, respiratory emergencies, allergic reaction, and assessment based management. Conforms at a minimum to the Virginia Office of Emergency Medical Services curriculum. Co-requisite: EMS 170. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 153 Basic ECG Recognition (2 cr.)
Focuses on the interpretation of basic electrocardiograms (ECG) and their significance. Includes an overview of anatomy and physiology of the cardiovascular system including structure, function, and electrical conduction in the heart. Covers advanced concepts that build on the knowledge and skills of basic dysrhythmia determination and introduction to 12 lead ECG. Prerequisites: EMS 111 and EMS 120. Co-requisites: EMS 151, 157 and 170. Lecture 2 hours per week.

EMS 155 ALS - Medical Care (4 cr.)
Continues the Virginia Office of Emergency Medical Services Intermediate and/or paramedic curricula. Includes ALS pharmacology, drug and fluid administration with emphasis on patient assessment, differential diagnosis, and management of multiple medical complaints. Includes, but is not limited to conditions relating to cardiac, diabetic, neurological, non-traumatic abdominal pain, environmental, behavioral, gynecology, and toxicological disease conditions. Prerequisites: current EMT-B certification, EMS 151, and EMS 153. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 157 ALS - Trauma Care (3 cr.)
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Prerequisites: current EMT-B certification and EMS 151. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 159 ALS - Special Populations (2 cr.)
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of specialty patients including obstetrical, neonates, pediatric, and geriatrics. Prerequisites: EMS 151 and EMS 153. Prerequisite or co-requisite: EMS 155. Lecture 1 hour per week. Laboratory 2 hours per week. Total 3 hours per week.

EMS 170 ALS Internship I (1 cr.)
Begins the first in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes, but not limited to, patient care units such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room, Trauma Centers, and various advanced life support units. Prerequisites: EMS 151 and EMS 120. Co-requisites: EMS 151, EMS 153, and EMS 157. Laboratory 3 hours per week.

EMS 172 ALS Clinical Internship II (2 cr.)
Continues with the second in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes, but not limited to, patient care units such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room, and Trauma Centers. Co-requisite: EMS 151. Laboratory 6 hours per week.

EMS 173 ALS Field Internship II (1cr.)
Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3 hours per week.

EMS 201 EMS Professional Development (2 cr.)
Prepares students for Paramedic certification at the National Registry Level by fulfilling community activism, personal wellness, resource management, ethical considerations in leadership and research objectives in the Virginia Office of Emergency Medical Services Paramedic curriculum. Lecture 2 hours per week.

EMS 205 Advanced Pathophysiology (3 cr.)
Focuses on the pathological processes of disease with emphasis on the anatomical and physiological alterations of the human body by systems. Includes diagnosis and management appropriate to the advanced health care provider in and out of the hospital environment. Lecture 3 hours per week.

EMS 207 Advanced Patient Assessment (3 cr.)
Focuses on the principles of normal and abnormal physical exam. Emphasizes the analysis and interpretation of physiological data to assist in patient assessment and management. Applies principles during the assessment and management of trauma, medical, and specialty patients in laboratory environment. Lecture 2 hours per week. Laboratory 2 hours per week. Total 4 hours per week.

EMS 209 Advanced Pharmacology (4 cr.)
Focuses on the principles of pharmacokinetics, pharmacodynamics, and drug administration. Includes drug legislation, techniques of medication administration, and principles of math calculations. Emphasizes drugs used to manage respiratory, cardiac, neurological, gastrointestinal, fluid and electrolyte, and endocrine disorders and includes classification, mechanism of action, indications, contraindications, precautions, and patient education. Incorporates principles related to substance abuse and hazardous materials. Applies principles during the assessment and management of trauma, medical, and specialty patients in a laboratory environment. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 211 Operations (2 cr.)
Prepares the student in the theory and application of the following: medical incident command, rescue awareness and operations, hazardous materials incidents, and crime scene awareness. (Conforms to the current Virginia Office of Emergency Medical Services curriculum for EMT-Paramedics.) Prerequisites: EMS 201, 207, 242 and 243. Co-requisites: EMS 209, 244, and 245. Lecture 1 hour per week. Laboratory 2 hours per week. Total 3 hours per week.

EMS 242 ALS Clinical Internship III (2 cr.)
Continues, as the third in a series of clinical experiences, providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes, but not limited to, patient care units such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room, Trauma Centers and various advanced life support units. Prerequisites: EMS 155, EMS 159, EMS 172 and EMS 173. Co-requisites: EMS 201, EMS 207, and EMS 243. Laboratory 6 hours per week.

EMS 243 ALS Field Internship III (2 cr.)
Continues, as the third in a series of field experiences, providing supervised direct patient care in out-of-hospital advanced life support units. Prerequisites: EMS 155, EMS 159, EMS 172, and EMS 173. Co-requisites: EMS 201, EMS 207, and EMS 242. Laboratory 6 hours per week.

EMS 244 ALS Clinical Internship IV (1 cr.)
Continues, as the fourth in a series of clinical experiences, providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes, but not limited to, patient care units, such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room, and Trauma Centers. Prerequisites: EMS 201, 207, 242, and 243. Co-requisites: EMS 209, 211, and 245. Laboratory 3 hours per week.

EMS 245 ALS Field Internship IV (1 cr.)
Continues, as the fourth in a series of field experiences, providing supervised direct patient care in out-of-hospital advanced life support units. Prerequisites: EMS 201, EMS 207, EMS 242, and EMS 243. Co-requisites: EMS 209, EMS 211, and EMS 244. Laboratory 3 hours per week.

ENG - ENGLISH

ENG 1 Preparing for College Writing I (5 cr.)
Helps students discover and develop writing processes needed to bring their proficiency to the level necessary for entrance into their respective curricula. Guides students through the process of starting, composing, revising, and editing. Lecture 5 hours per week.

ENG 2 Spelling and Vocabulary Study (3 cr.)
Helps students to improve spelling and develop vocabulary. Reviews common spelling patterns. Familiarizes the student with basic prefixes, suffixes, root words, and other word formations. Teaches effective use of the dictionary and thesaurus. Stresses recognizing words in reading context and using them effectively in writing. Lecture 3 hours per week.

ENG 4 Preparing for College Reading I (5 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 5 hours per week.

ENG 5 Preparing for College Reading II (3 cr.)
Helps students read critically and increase appreciation of reading. Guides students in making inferences, drawing conclusions, detecting relationships between generalizations and supporting details. Includes interpreting graphic aids and basic library skills. Prerequisite: placement recommendation or completion of ENG 4. Lecture 3 hours per week.

ENG 8 Writing and Reading Improvement II (6 cr.)
Emphasizes strategies within the writing and critical reading processes to help students with specific writing and reading assignments. Encourages an appreciation for clear writing and practical reading applications. Prerequisites: placement recommendations for ENG 1 and ENG 5, or grades of “S” in ENG 1 and ENG 4. These prerequisites will allow students to take this accelerated reading and writing course combination to bridge to ENG 111, as well as science and social science courses. Lecture 6 hours per week.

ENG 9 Individualized Instruction in Writing (1 cr.)
Focuses on individual writing needs as determined by student and instructor. Provides support for students simultaneously enrolled in other courses or who want additional writing instruction in a tutorial setting. Prerequisite: departmental recommendation. Co-requisite: ENG 111. Lecture 1 hour per week.

ENG 50 Reading and Writing for Teacher Entrance Exams (1 cr.)
Provides students with review and practice for the reading and writing portions of the licensure examination required of all beginning teachers in Virginia. Emphasizes critical thinking, reading for comprehension, the writing process, and test-taking. Prerequisite: ENG 111 suggested. Lecture 1 hour per week.

ENG 107 Critical Reading (3 cr.)
Helps students refine their reading processes. Emphasizes applying and synthesizing ideas. Includes ways to detect organizations, make inferences, draw conclusions, evaluate generalizations, recognize differences between facts and opinions, and other advanced comprehension strategies. May include comprehensive library skills. Prerequisite: placement recommendation or completion of ENG 5. Lecture 3 hours per week.

ENG 111 College Composition I (3 cr.)
Introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics: develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and analysis with at least one researched essay. Prerequisite: writing placement recommendation for ENG 111. Prerequisite or co-requisite: ENG 4 if required by reading placement recommendation. ENG 111 is a prerequisite for ENG 112. Lecture 3 hours per week.

ENG 112 College Composition II (3 cr.)
Continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Requires students to develop competency in preparing and delivering an oral presentation. Prerequisite: English 111 or its equivalent; a grade of "C" or better in ENG 111 and ability to use word processing software are recommended. Prerequisite or co-requisite: ENG 5 if recommended by reading placement or by reading faculty. 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 appropriate to a specific audience and purpose. Includes instruction in formatting, editing, and graphics. Introduces students to technical discourse through selected reading. Provides instruction and practice in basic principles of oral presentation. Prerequisites: ENG 111 or approval by the English program head, and ENG 4 if recommended by placement test. Lecture 3 hours per week.

ENG 137 Communication Processes I (3 cr.)
Covers content, form, and procedures for research writings, which may include reports, articles, summaries, essays and correspondence. Stresses editing, proofreading skills, sentence structure, and paragraph development. Offers instruction and practice in oral communication skills. May use reading selections for discussions and writing assignments. Prerequisite: departmental placement recommendation. ENG 4 is a prerequisite or a co-requisite if recommended by placement test. Lecture 3 hours per week.

ENG 190 Coordinated Internship (1-3 cr.)
Provides students the opportunity to gain direct business and industry experience while maintaining one hour of contact time with the supervising instructor. Laboratory 3-9 hours per week.

ENG 210 Advanced Composition (3 cr.)
Helps students refine skills in writing non-fiction prose. Guides development of individual voice and style. Introduces procedures for publication. Prerequisite: a grade of “C” or better in ENG 112 or approval by the English program head. Lecture 3 hours per week.

ENG 215 Creative Writing - Fiction I (3 cr.)
Introduces, in a workshop setting, the fundamentals and techniques of writing short and long fiction. Prerequisite: ENG 111 or approval by the English program head. Lecture 3 hours per week.

ENG 217 Creative Writing Poetry I (3 cr.)
Introduces, in a workshop setting, the fundamentals and techniques of writing poetry. Prerequisite: ENG 111 or approval by the English program head. Lecture 3 hours per week.

ENG 241 Survey of American Literature I (3 cr.)
Examines American literary works from pre-colonial times to about 1865, emphasizing the ideas and characteristics of our national literature. Involves critical reading and writing. Involves critical reading and writing. ENG 241 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 112 or approval by the English program head. ENG 241 and 242 may be taken out of order. Lecture 3 hours per week.

ENG 242 Survey of American Literature II (3 cr.)
Examines American literary works from colonial times to the present, emphasizes the ideas and characteristics of our national literature. Involves critical reading and writing. ENG 242 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 111 and ENG 112 or approval by the English program head. ENG 241 and 242 may be taken out of order. Lecture 3 hours per week.

ENG 243 Survey of British Literature I (3 cr.)
Examines major British texts from the Anglo-Saxon period to the 18th century. Involves critical reading and writing. The course emphasizes the critical ideas and traditions of the British literary tradition, and examines the literary texts within their social and historical context. ENG 243 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 112 or approval by the English program head. ENG 243 and 244 may be taken out of order. Lecture 3 hours per week.

ENG 244 Survey of British Literature II (3 cr.)
Examines major British texts from the Romantics to the contemporary period. Involves critical reading and writing. The course emphasizes the critical ideas and traditions of the British literary tradition, and examines the literary texts within their social and historical context. ENG 244 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 112 or approval by the English program head. ENG 243 and 244 may be taken out of order. Lecture 3 hours per week.

ENG 251 Survey of World Literature I (3 cr.)
Examines major works of world literature from the ancient period to the early 17th century. Involves critical reading and writing. The course emphasizes both the global development of literary forms and their unique expressions within individual cultural contexts. The course also examines the social and historical influences on literary texts. ENG 251 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 111 or approval by the English program head. ENG 251 and 252 may be taken out of order. Lecture 3 hours per week.

ENG 252 Survey of World Literature II (3 cr.)
Examines major works of world literature from the 17th century to the present era. Involves critical reading and writing. The course emphasizes both the global development of literary forms and their unique expressions within individual cultural contexts. The course also examines the social and historical influences on literary texts. ENG 252 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 111 or approval by the English program head. ENG 251 and 252 may be taken out of order. Lecture 3 hours per week.

ENG 253 Survey of African-American Literature I (3 cr.)
Survey of African American Literature I introduces students to the rich and varied heritage of the African American literary culture as it emerges from the 18th century, with an emphasis on the vernacular tradition, through the philosophical ideology of the New Negro movement in the 20th century. Involves critical reading and writing. The course examines the significant contributions of African American literature and its place within the historical and literary context of America's literatures. ENG 253 has been designated as a "writing intensive" course according to standards developed by the English Department. ENG 253 and 254 may be taken out of order. Lecture 3 hours per week.

ENG 254 Survey of African American Literature II (3 cr.)
Survey of African American II introduces students to the rich and varied heritage of the African American literary culture as it emerges from Reconstruction to the contemporary period. Involves critical reading and writing. The course examines the significant contributions of African American literature and its place within the historical and literary context of American literature. ENG 254 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 112 or approval by the English program head. ENG 253 and 254 may be taken out of order. Lecture 3 hours per week.

ENG 273 Women in Literature I (3 cr.)
Examines literature by and about women prior to 1900 from a variety of countries and cultures. Involves critical reading and writing. ENG 273 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 112 or approval by the English program head. ENG 273 and 274 may be taken out of order. Lecture 3 hours per week.

ENG 274 Women in Literature II (3 cr.)
Examines literature by and about women from 1900 to the present from a variety of countries and cultures. Involves critical reading and writing. ENG 274 has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 112 or approval by English program head. ENG 273 and 274 may be taken out of order. Lecture 3 hours per week.

ENG 295 Topics in English: The Bible as Literature I (3 cr.)
Introduces students to the Hebrew Bible (or Tanakh) as a literary text, and incorporates literary critical techniques to the student's reading. Involves the analytical/critical study of selected books of the Hebrew Bible with an emphasis on its component genres, literary conventions, and, languages. Introduces students to the literary types found in the Hebrew Bible: folklore, myth and legend, poetry and narrative, metaphor, irony, and allegory. This course has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 112. The Bible as Literature I and II may be taken out of order. Lecture 3 hours per week.

ENG 295 Topics in English: The Bible as Literature II (3 cr.)
Introduces students to the New Testament as a literary text and includes the reading of selected narratives, with particular emphasis on the four gospels. This course has been designated as a "writing intensive" course according to standards developed by the English Department. Prerequisite: ENG 112. The Bible as Literature I and II may be taken out of order. Lecture 3 hours per week.

ESL - ENGLISH AS A SECOND LANGUAGE

ESL 5 English as a Second Language: Reading I (6 cr.)
Helps students improve their reading comprehension and vocabulary. Improves students' reading proficiency to a level which would allow the students to function adequately in ESL 6 and other college classes. Prerequisite: placement recommendation for ESL 5. Lecture 6 hours per week.

ESL 6 English as a Second Language: Reading II (6 cr.)
Helps students improve their reading comprehension and vocabulary. Improves students' reading proficiency to a level which would allow students to function adequately in the ESL 17 reading class and other college classes. Prerequisite: placement recommendation for ESL 6 or completion of ESL 5. Lecture 6 hours per week.

ESL 7 Oral Communication I (3 cr.)
Helps students practice and improve listening and speaking skills as needed for functioning successfully in academic, professional, and personal settings. Assesses students' oral skills and includes, as needed, practice with pronunciation,

rhythm, stress, and intonation. Provides exercises, practice, small and large group activities, and oral presentations to help students overcome problems in oral communication. Prerequisite: placement recommendation for ESL 7. Lecture 3 hours per week.

ESL 8 Oral Communication II (3 cr.)
Provides further instruction and practice in helping students to improve listening and speaking skills. Assesses students' oral skills and includes, as needed, practice with pronunciation, rhythm, stress, and intonation. Emphasizes the development of fluency through exercises, practices, small and large group activities, and formal and informal presentations. Prerequisite: placement recommendation for ESL 8 or completion of ESL 7. Lecture 3 hours per week.

ESL 9 Accent Reduction (3 cr.)
Provides contextualized practice at the high intermediate/advanced level to improve the speech intelligibility of non-native speakers of English. Focuses on problems of American English sound/spelling patterns, word endings, syllables, stress, rhythm and intonation common to speakers of different language backgrounds. May include individualized practice in consonant and vowel production. Lecture 3 hours per week.

ESL 11 English as a Second Language: Composition I (6 cr.)
Provides instruction and practice in the writing process, emphasizing development of fluency in writing and competence in structural and grammatical patterns of written English. Prerequisite: placement recommendation for ESL 11. Lecture 6 hours per week.

ESL 12 English as a Second Language: Composition II (6 cr.)
Provides further instruction and practice in the writing process and introduces advanced language patterns. Includes practice in developing and improving writing strategies. Prerequisite: placement recommendation for ESL 12 or completion of ESL 11. Lecture 6 hours per week.

ESL 13 English as a Second Language: Composition III (6 cr.)
Prepares for college-level writing by practice in the writing process, emphasizing development of thought in essays of greater length and complexity, and use of appropriate syntax and diction. Prerequisite: placement recommendation for ESL 13 or completion of ESL 12. Lecture 6 hours per week.

ESL 16 Oral and Written Communications III (3 cr.)
Provides practice in the sound, stress, intonation, structural patterns, grammar, vocabulary, and idioms of advanced-level English in frequently encountered situations, with an emphasis on preparation for college-level English proficiency. Prerequisite: placement recommendation for ESL 16 or completion of ESL 8. Lecture 3 hours per week.

ESL 17 English as a Second Language: Reading III (6 cr.)
Helps students improve their reading comprehension and vocabulary development. Improves students' reading proficiency to a level which would allow students to succeed in certificate and degree programs. Emphasizes applying and synthesizing ideas. Includes ways to detect organization, summarize, make inferences, draw conclusions, evaluate generalizations, recognize differences between facts and opinions, and other advanced comprehension strategies. May also include comprehensive library skills. Prerequisite: placement recommendation for ESL 17 or completion of ESL 6. Lecture 6 hours per week.

ESL 18 English as a Second Language: Writing Workshop (6 cr.)
Provides an opportunity for further practice in intermediate and advanced writing techniques taught in required ESL writing courses. Provides reinforcement in writing skills, including composing, organizing, revising, and editing. Prerequisite: placement recommendation for ESL 18 or completion of ESL 13. Lecture 6 hours per week.

ESL 19 English as Second Language: Spelling and Vocabulary (1 cr.)
Provides individualized instruction and practice in sound-letter correspondences. Introduces students to basic spelling rules, word division, prefixes, roots and suffixes. Helps students master vocabulary through an understanding of homonyms, confusing words, and Greek and Latin roots. Stresses using words in context. Lecture 1 hour per week.

ESL 95 ESL Foundations (5 cr.)
Provides instructions and practice in reading and writing at the low intermediate level. Helps students build their basic reading comprehension and vocabulary skills. Requires practice in writing with emphasis on review of basic sentence structures, grammar and sentence-level writing. Prerequisite: placement recommendation. Lecture 5 hours per week.

ETR - ELECTRONICS TECHNOLOGY

ETR 101 Electrical/Electronic Calculations I (3 cr.)
Teaches calculation methods and fundamental applications and processes to electrical and electronic problems. Stresses basic calculations required in circuit analysis. Includes problem solving utilizing calculators or computers. Prerequisite: MTH 3 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ETR 113 D.C. and A.C. Fundamentals (3 cr.)
Studies D.C. and A.C. circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze, and measure electrical quantities. Prerequisite or co-requisite: MTH 4 or equivalent or permission of the instructor. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. (For Electronics Technology CSC.)

ETR 113 D.C. and A.C. Fundamentals I (4 cr.)
Studies D.C. and A.C. circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze and measure electrical quantities. Part I of II. Prerequisite or co-requisite: MTH 4 or equivalent or permission of the instructor. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. (For Computer and Electronics Technology AAS.)

ETR 114 D.C. and A.C. Fundamentals II (4 cr.)
Studies D.C. and A.C. circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze and measure electrical quantities. Part II of II. Prerequisite: ETR 113 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. (For Computer and Electronics Technology AAS.)

ETR 164 Upgrading and Maintaining PC Hardware (3 cr.)
Teaches upgrading of the system CPU, memory, drives, multimedia components, modem, and video card in a microcomputer. Covers hardware as well as software related maintenance issues. Prerequisite: MTH 2 or equivalent. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ETR 199 Supervised Study in Electronics Technology (3 cr.)
Teaches upgrading of the system CPU, memory, drives, multimedia components, modem, and video card in a microcomputer. Covers hardware as well as software related maintenance issues. (Assigns problems for independent study outside the normal classroom setting under the guidance and direction of an instructor. Incorporates prior experience and instruction in the discipline.) Prerequisite: MTH 2 or equivalent. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ETR 203 Electronic Devices I (3 cr.)
Studies active devices and circuits such as diodes, power supplies, transistors (BJTs), amplifiers, thermionic devices, and other devices. Prerequisite: ETR 113 or equivalent knowledge of D.C. and A.C. theory. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. (For Electronics Technology CSC.)

ETR 203 Electronic Devices I (4 cr.)
Studies active devices and circuits such as diodes, power supplies, transistors (BJTs), amplifiers, thermionic devices, and other devices. Part I of II. Prerequisite: ETR 113 or equivalent knowledge of D.C. and A.C. theory. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. (For Computer and Electronics Technology AAS.)

ETR 204 Electronic Devices II (4 cr.)
Studies active devices and circuits such as diodes, power supplies, transistors (BJTs), amplifiers, thermionic devices, and other devices. Part II of II. Prerequisite: ETR 203. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. (For Computer and Electronics Technology AAS.)

ETR 214 Advanced Circuits and New Devices (2 cr.)
Includes lectures and demonstrations on the latest developments in electronics. Prerequisite: ETR 113 or equivalent. Co-requisite: ETR 203 or equivalent. Lecture 2 hours per week.

ETR 221 Electronic Controls I (4 cr.)
Discusses characteristics and performance of linear control systems with one or more feedback loops. Includes functions and properties of various components encountered in control systems, including servo-amplifiers and error detectors, machine synchronization for automatic operations. Part I of II. Prerequisite: ETR 203 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 222 Electronic Controls II (4 cr.)
Discusses characteristics and performance of linear control systems with one or more feedback loops. Includes functions and properties of various components encountered in control systems, including servo-amplifiers and error detectors, machine synchronization for automatic operations. Part II of II. Prerequisite: ETR 203 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 273 Computer Electronics I (3 cr.)
Teaches principles of digital electronics and microprocessors to familiarize the student with typical circuits and methods used to interface computer and/or controllers with various I/O devices. Includes exposure to high level programming as well as assembly language routines. Prerequisite: ETR 203 or equivalent**.** Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. (For Electronics Technology CSC.)

ETR 273 Computer Electronics I (4 cr.)
Teaches principles of digital electronics and microprocessors to familiarize the student with typical circuits and methods used to interface computer and/or controllers with various I/O devices. Includes exposure to high-level programming, as well as assembly language routines. Part I of II. Prerequisite: ETR 203 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 274 Computer Electronics II (4 cr.)
Teaches principles of digital electronics and microprocessors to familiarize the student with typical circuits and methods used to interface computer and/or controllers with various I/O devices. Includes exposure to high-level programming, as well as assembly language routines. Part II of II. Prerequisite: ETR 203 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 295 Computer-Based Automotive Electronics and Diagnostics (3 cr.)
Presents the application of operating theory and diagnostic procedures on automotive computer systems. Emphasizes diagnostic procedures using PC and/or PDA based diagnostic software and on-board computers. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

FIN - FINANCIAL SERVICES

FIN 95 Analysis of Financial Statements (1cr.)
Explores the tools necessary to analyze financial statements from both a credit grantor's and investor's perspective. Course includes ratio analysis, cash flow generation measurements, liquidity, leverage profitability, and asset utilization. Lecture 1 hour per week.

FIN 95 Introduction to the Stock Market (1 cr.)
Intensive study of the equities markets and the approaches that successful investors use to pick stocks. Topics include goal-setting and successful strategies; protecting profits and limiting losses; understanding investment risk and market psychology; stock selection techniques, stock classifications, market cycles, investment portfolio construction and diversification, tracking and measuring stock performance. Lecture 1 hour per week.

FIN 107 Personal Finance (3 cr.)
Presents a framework of personal money management concepts, including establishing values and goals, determining sources of income, managing income, preparing a budget, developing consumer buying ability, using credit, understanding savings and insurance, providing for adequate retirement, and estate planning. Lecture 3 hours per week.

FIN 215 Financial Management (3 cr.)
Introduces basic financial management topics including statement analysis, working capital, capital budgeting, and long-term financing. Focuses on Net Present Value and Internal Rate of Return techniques, lease vs. buy analysis, and Cost of Capital computations. Uses problems and cases to enhance skills in financial planning and decision making. Lecture 3 hours per week.

FRE - FRENCH

FRE 101 Beginning French I (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic French sentence structure. Incorporates exposure to the arts, culture, and literature of the areas of the world where French is spoken. Part I of II. Lecture 4 hours per week. May include one additional hour of oral practice per week.

FRE 102 Beginning French II (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic French sentence structure. Incorporates exposure to the arts, culture, and literature of the areas of the world where French is spoken. Part II of II. Prerequisite: FRE 101. Lecture 4 hours per week. May include one additional hour of oral practice per week.

FRE 201 Intermediate French I (3 cr.)
Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. Part I of II. Prerequisite: FRE 102 or equivalent. May include one additional hour of oral practice per week. Lecture 3 hours per week.

FRE 202 Intermediate French II (3 cr.)
Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. Part II of II. Prerequisite: FRE 201 or equivalent. May include one additional hour of oral practice per week. Lecture 3 hours per week.

FST - FIRE SCIENCE

FST 100 Principles of Emergency Services (3 cr.)
Provides an overview to fire protection, career opportunities in fire protection and related fields, philosophy and history of fire protection/service, fire loss analysis, organization and function of public and private fire protection services, fire departments as part of local government, laws and regulations affecting the fire service,

fire service nomenclature, specific fire protection functions, basic fire chemistry and physics, introduction to fire protection systems, and introduction to fire strategy and tactics. Students with Firefighter level 1 and level 2 certification may receive credit for the course when other degree requirements have been met. (See program head for more information.) Lecture 3 hours per week. (Usually offered only in the fall semester)

FST 105 Fire Suppression Operations (3 cr.)
Introduces the fundamentals of fire suppression. Explores fire behavior and basic physical and chemical laws of fire dynamics. Prepares student to understand the need for quick operational decisions made on the fire ground including emergency management. Lecture 3 hours per week.

FST 110 Fire Behavior and Combustion (3 cr.)
Explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. Lecture 3 hours per week. (Usually offered only in the fall semester)

FST 112 Hazardous Materials Chemistry (3 cr.)
Studies basic fire chemistry relating to the categories of hazardous materials, including problems of recognition, reactivity, and health encountered by firefighters. Students with Hazardous Materials Technician or Specialist certification may receive credit for the course when other degree requirements have been met. (See program head for more information.) Lecture 3 hours per week. (Usually offered only in the spring semester)

FST 115 Fire Prevention (3 cr.)
Provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education. Students with Fire Inspector level 1 or level 2 certification may receive credit for the course when other degree requirements have been met. (See program head for more information.) Lecture 3 hours per week. (Usually offered only in the spring semester)

FST 121 Principles of Fire and Emergency Services Safety and Survival (3 cr.)
Introduces basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency service. Lecture 3 hours per week. (Usually offered only in the fall semester)

FST 135 Fire Instructor I (3 cr.)
Emphasizes development of teaching methods and aids, including role-playing, small group discussion, and development of individual learning methods and materials. Requires students to develop lesson plans and make presentations on appropriate topics. Prepares students for certification as Fire Instructor 1, based on current requirements of NFPA 1041, Standards for Fire Instructor Professional Qualifications. Students with Fire Service Instructor level 1 plus Train-the-Trainer for Firefighter 1 and 2 or Fire Service Instructor level 2 certification may receive credit for the course when other degree requirements have been met. (See program head for more information; course will substitute for CST 100.) Lecture 3 hours per week. (This course is usually not offered, but may be used for awarding credits)

FST 205 Fire Protection Hydraulics and Water Supply (3 cr.)
Provides students a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Lecture 3 hours per week. (Usually offered only in the spring semester)

FST 210 Legal Aspects of Fire Service (3 cr.)
Introduces the Federal, State, and local laws that regulate emergency services, national standards influencing emergency services, standard of care, tort, liability, and a review of relevant court cases. Lecture 3 hours per week. (Usually offered only in the spring semester)

FST 215 Fire Protection Systems (3 cr.)
Provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. Lecture 3 hours per week. (Usually offered only in the spring semester)

FST 216 Automated Sprinkler System Design I (3 cr.)
Presents a comprehensive study of automated sprinkler systems including sprinkler standards, design features, water supply adequacy, sprinkler limitations, and appropriate building and fire code applications. Lecture 3 hours per week. (Usually offered only in the fall semester)

FST 217 Automated Sprinkler Design II (3 cr.)
Continues the study of sprinkler system design, implementation, and installation,. Includes the use of appropriate computer applications in the design of various types of sprinkler systems. Prerequisite: FST 216. Lecture 3 hours per week. (Usually offered only in the spring semester)

FST 220 Building Construction for Fire Protection (3 cr.)
Studies the components of building construction that relate to fire and life safety. Focuses on firefighter safety. Covers the construction and design of structures and how they are key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. Lecture 3 hours per week. (Usually offered only in the fall semester)

FST 230 Fire Investigation (3 cr.)
Provides students with the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the firesetter, and types of fire causes. Lecture 3 hours per week.

FST 231 Fire Investigation II (3 cr.)
Provides students with advanced technical knowledge on rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation, and testifying. Prerequisite: FST 230. Lecture 3 hours per week

FST 235 Strategy and Tactics (3 cr.)
Provides students an in-depth analysis of the principles of fire control through utilization of personnel, equipment, and extinguishing agents on the fire ground. Lecture 3 hours per week. (Usually offered only in the fall semester)

FST 240 Fire Administration (3 cr.)
Introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasizes fire service leadership from the perspective of the company officer. Lecture 3 hours per week. (Usually offered only in the fall semester)

FST 245 Fire and Risk Analysis (3 cr.)
Presents a study of current urban fire problems with emphasis on solutions based upon current available technology. Includes master planning, as well as methods of identifying, analyzing, and measuring accompanying risk and loss possibilities. Prerequisite: FST 240. Lecture 3 hours per week. (Usually offered only in the spring semester)

GEO - GEOGRAPHY

GEO 200 Introduction to Physical Geography (3 cr.)
Studies major elements of the natural environment including earth sun relationship, land forms, weather and climate, natural vegetation and soils. Introduces the student to types and uses of maps. Lecture 3 hours per week.

GEO 210 People and the Land: Introduction to Cultural Geography (3 cr.)
Focuses on the relationship between culture and geography. Presents a survey of modern demographics, landscape modification, material and non-material culture, language, race and ethnicity, religion, politics, and economic activities. Introduces the student to types and uses of maps. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 107 if recommended by reading placement test. 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. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

GER - GERMAN

GER 101 Beginning German I (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Incorporates exposure to the arts, culture, and literature of the areas of the world where German is spoken. Lecture 4 hours per week. May include one additional hour of oral practice per week.

GER 102 Beginning German II (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Incorporates exposure to the arts, culture, and literature of the areas of the world where German is spoken. Prerequisite: GER 102Lecture 4 hours per week. May include one additional hour of oral practice 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: ITE 115 or instructor approval. 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 crystal deformation. This course completes a one-year laboratory science when followed by GOL106. Prerequisites: satisfactory score on reading and writing placement tests or completion of all developmental reading and writing courses. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GOL 106 Historical Geology (4 cr.)
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. Prerequisite: GOL 105 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

HIM - HEALTH INFORMATION MANAGEMENT
(formerly Health Information Technology – HIT)

HIM 110 Introduction to Human Pathology (3 cr.)
Introduces the basic concepts, terminology, etiology, and characteristics of pathological processes. Co-requisite: NUR 136. Prerequisites: HLT 143 and NAS 150. Lecture 3 hours per week.

HIM 143 Managing Electronic Billing in a Medical Practice (2 cr.)
Presents practical knowledge on use of computer technology in medical practice management. Develops basic skills in preparation of universal billing claims. Explores insurance claim processing issues. Co-requisite: HIM 151. Lecture 2 hours per week.

HIM 150 Health Records Management (3 cr.)
Presents documentation format and content of the medical record relevant to the coding function. Introduces application of standard techniques for filing, maintenance, and acquisition of health information. Examines the processes of collecting, computing, analyzing, interpreting, and presenting data related to health care services. Includes legal and regulatory guidelines for the control and use of health information data. Lecture 3 hours per week.

HIM 151 Reimbursement Issues in Medical Practice Management (2 cr.)
Introduces major reimbursement systems in the United States. Focuses on prospective payment systems, managed care, and documentation necessary for appropriate reimbursement. Emphasizes management of practice to avoid fraud. Co-requisite: HIM 143. Lecture 2 hours per week.

HIM 226 Legal Aspects of Health Record Documentation (2 cr.)
Presents the legal requirements associated with health record documentation. Emphasizes the policies and procedures concerning the protection of the confidentiality of patient's health records. Lecture 2 hours per week.

HIM 253 Health Records Coding (4 cr.)
Examines the development of coding classification systems. Introduces ICD-9-CM coding classification system, its format and conventions. Stresses basic coding steps and guidelines according to body systems. Provides actual coding exercises in relation to each system covered. Prerequisites: NAS 150, HLT 143. Prerequisites or co-requisites: HIM 110, NUR 136. Lecture 4 hours per week

HIM 254 Advanced Coding and Reimbursement (AMA-CPT) (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. Prerequisite: HIM 253. Lecture 4 hours per week.

HIM 295 Topics in Advanced Health Records Coding (2 cr.)
Provides an opportunity to explore topical areas in Advanced Health Records Coding and prepares prospective graduates for the national certification exam. Prerequisite: HIM 253. Prerequisite or co-requisite: HIM 254. Lecture 2 hours per week.

HIS - HISTORY

HIS 101 History of Western Civilization I (3 cr.)
Examines the development of western civilization from ancient times to the present (part I of II). Begins with ancient times and ends with the seventeenth century. History 101 and 102 need not be taken in sequence. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HIS 102 History of Western Civilization II (3 cr.)
Examines the development of western civilization from ancient times to the present (part II of II). Begins with the mid-seventeenth century and continues through modern times. History 101 and 102 need not be taken in sequence. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HIS 111 History of World Civilization I (3 cr.)
Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present (part I of II). History 111 and 112 need not be taken in sequence. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HIS 112 History of World Civilization II (3 cr.)
Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present (part I of II). History 111 and 112 need not be taken in sequence. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HIS 121 United States History I (3 cr.)
Surveys the United States history from its beginning to the present (part I of II). History 121 and 122 need not be taken in sequence. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HIS 122 United States History II (3 cr.)
Surveys the United States history from its beginning to the present (part II of II). History 121 and 122 need not be taken in sequence. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HIS 141 African-American History I (3 cr.)
Surveys the history of black Americans from their African origins to the present (part I of II). History 141 and 142 need not be taken in order. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HIS 142 African-American History II (3 cr.)
Surveys the history of black Americans from their African origins to the present (part II of II). History 141 and 142 need not be taken in order. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HIS 203 History of African Civilization (3 cr.)
Examines major social, economic, political and religious developments from earliest times to the present. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. 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. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. 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. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and/or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

HLT - HEALTH

HLT 100 First Aid and Cardiopulmonary Resuscitation (3 cr.)
Focuses on the principles and techniques of safety, first aid, and cardiopulmonary resuscitation. Lecture 3 hours per week.

HLT 105 Cardiopulmonary Resuscitation (1 cr.)
Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression, choking, life-threatening emergencies, and sudden illness. Equivalent to EMS 100. Lecture 1 hour per week.

HLT 106 First Aid and Safety (2 cr.)
Focuses on the principles and techniques of safety and first aid. Lecture 2 hours per week.

HLT 116 Introduction to Personal Wellness Concepts (3 cr.)
Explores the relationship between personal health and physical fitness as they apply to individuals in today's society. Includes nutrition, weight control, stress, conditioning, and drugs. Lecture 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 135 Child Health and Nutrition (3 cr.)
Focuses on the physical needs of the preschool child and the methods by which these are met. Emphasizes health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases, and safety as related to health, growth, and development. Lecture 3 hours per week.

HLT 143 Medical Terminology I (3 cr.)
Provides an understanding of medical abbreviations and terms. Includes the study of prefixes, suffixes, word stems, and technical terms with emphasis on proper spelling, pronunciation, and usage. Emphasizes more complex skills and techniques in understanding medical terminology. Lecture 3 hours per week.

HLT 175 Swimming Pool Management (1 cr.)
Studies the management of hot tubs, and home and community pools. May include water chemistry, filtration, circulation, chemical feeders, and sanitation. Lecture 1 hour per week.

HLT 195 Topics in Health (1-5 cr.)
Provides an opportunity to explore topic areas of an evolving nature or of short-term importance in the discipline. Variable hours per week.

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 215 Personal Stress and Stress Management (3 cr.)
Provides a basic understanding of stress and its physical, psychological, and social effects. Includes the relationships between stress and change, self-evaluation, sources of stress, and current coping skills for handling stress. Lecture 3 hours per week.

HLT 230 Principles of Nutrition and Human Development (3 cr.)
Teaches the relationship between nutrition and human development. Emphasizes nutrients, balanced diet, weight control, and the nutritional needs of an individual. Lecture 3 hours per week.

HLT 250 General Pharmacology (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 3 hours per week.

HLT 261 Basic Pharmacy I (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. Pre- or co-requisite: HLT 250. Lecture 3 hours per week.

HLT 262 Basic Pharmacy II (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. Prerequisites: HLT 250 and 261. Lecture 3 hours per week.

HMS - HUMAN SERVICES

HMS 100 Introduction to Human Services (3 cr.)
Introduces human service agencies, roles and careers. Presents an historical perspective of the field as it relates to human services today. Additional topics include values clarification and needs of target populations. Lecture 3 hours per week.

HMS 121 Basic Counseling Skills I (3 cr.)
Develops skills needed to function in a helping relationship. Emphasizes skills in attending, listening and responding. Clarifies personal skill strengths, deficits, and goals for skill improvement. Lecture 3 hours per week.

HMS 122 Basic Counseling Skills II (3 cr.)
Expands the development of counseling skills needed to function effectively in a helping relationship. Emphasizes skills in responding, personalizing, summarizing and initiating. Clarifies personal skill strengths, deficits, and goals for skill improvement. Develops plans for achieving personal and program goals. Lecture 3 hours per work.

HMS 141 Group Dynamics I (3 cr.)
Examines the stages of group development, group dynamics, the role of the leader in a group, and recognition of the various types of group processes. Discusses models of group dynamics that occur as a result of group membership dynamics. Lecture 3 hours per week.

HMS 142 Group Dynamics II (3 cr.)
Examines group dynamics, group leadership, group cohesion, transference and group helping through experiential involvement in group facilitating and leadership. Increases group skills through active classroom participation in group experiences. Lecture 3 hours per week.

HMS 220 Addiction and Prevention (3 cr.)
Examines the impact of drugs and addiction on individuals and their families. Explores the myths about various drugs and their benefit or lack of benefit. Lecture 3 hours per week.

HMS 225 Functional Family Intervention (3 cr.)
Provides an understanding of functions and dysfunctions within the family. Emphasizes the development of effective skills through an interpersonal/interactional approach to family intervention. Lecture 3 hours per week.

HMS 226 Helping Across Cultures (3 cr.)
Provides an historical overview of selected cultural and racial groups. Promotes understanding of group differences and the impact on counseling services. Lecture 3 hours per week.

HMS 227 The Helper as a Change Agent (3 cr.)
Teaches the following skills for implementing alternative models of change and influence: action research, problem-solving, consultation, workshop development, and outreach and advocacy for diverse client populations. Lecture 3 hours per week.

HMS 236 Gerontology (3 cr.)
Examines the process of aging and its implications in relation to health, recreation, education, transportation, meaningful work or activity, and to community resources. Emphasizes experiencing the aging process, facilitating retirement, and application of the helping relationship to work with older adults. Lecture 3 hours per week.

HMS 258 Case Management and Substance Abuse (3 cr.)
Focuses on the process for interviewing substance abuse clients. Includes intake, assessment, handling denial, and ending the interview. Teaches skills for writing short-term goals and treatment plans with emphasis on accountability. Examines various reporting devices. Lecture 3 hours per week.

HMS 260 Substance Abuse Counseling (3 cr.)
Provides an understanding of the skills of guidance of clients and those associated with being an advocate. Examines the dynamics of the client/counselor relationship in developing treatment plans and empowerment skills. Lecture 3 hours per week.

HMS 266 Counseling Psychology (3 cr.)
Studies major counseling theories, their contributions and limitations, and the application of each to a counseling interaction. Provides students an opportunity to develop their own personal counseling theory. Lecture 3 hours per week.

HMS 270 Treatment Systems (3 cr.)
Examines the services and facilities established for the purpose of treating addictions. Focuses on treatment therapy models and ethical standards related to addiction-disease theory. Lecture 3 hours per week.

HMS 290 Coordinated Internship in Human Services (3 cr.)
Places students in selected career-related human service agencies. Provides students with an opportunity to learn to integrate practice with theory under the supervision of a qualified supervisor in their designated career field. Helps students gain an overview of their chosen service career field. Laboratory 15 hours per week.

HRI - HOSPITALITY MANAGEMENT

HRI 106 Principles of Culinary Arts (3 cr.)
Introduces the fundamental principles of food preparation and basic culinary procedures. Stresses the use of proper culinary procedures combined with food science, proper sanitation, standards of quality for food items that are made, and proper use and care of kitchen equipment. Corequisite: HRI 219. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 115 Food Service Managers Sanitation Certification (1 cr.)
Presents an accelerated survey of principles and applications of sanitary food service, designed to promote the skills of managers in food service establishments licensed by the Commonwealth of Virginia. Upon successful completion of the course, a certificate of achievement is awarded by the Educational Foundation of the National Restaurant Association and the student's name is entered in the Foundation Registry. Lecture 1 hour per week.

HRI 119 Applied Nutrition for Food Service (3 cr.)
Studies food composition, nutrition science, and application of nutrition principles by the foodservice professional. Provides the student with a basic understanding of human nutrition and application of nutrition in the service of commercially prepared meals. Lecture 3 hours per week.

HRI 128 Principles of Baking (3 cr.)
Instructs the student in the preparation of breads, pastries, baked desserts, candies, frozen confections, and sugar work. Applies scientific principles and techniques of baking. Promotes the knowledge/skills required to prepare baked items, pastries, and confections. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 134 Food and Beverage Service Management (3 cr.)
Provides a conceptual and technical framework for managing the service of meals in a variety of commercial settings. Studies the integration of production and service delivery, guest contact dynamics, reservation management, and point-of-sale technology systems. Lecture 3 hours per week.

HRI 140 Fundamentals of Quality for the Hospitality Industry (3 cr.)
Teaches quality in the hospitality industry, including material on the total quality management movement. Emphasizes quality from the customer's perspective. Lecture 3 hours per week.

HRI 145 Garde Manger (3 cr.)
Studies garde manger, the art of decorative cold food preparation and presentation. Provides a detailed practical study of cold food preparation and artistic combination and display of cold foods. Prerequisite: HRI 220. Corequisite: HRI 128. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 147 World Cuisines (3 cr.)
Introduces students to the diversity of international cuisines. Teaches how different cuisines are manifested, by way of ingredients, flavorings, and cooking techniques. Lecture 3 hours per week.

HRI 150 Introduction to Hospitality Ownership (3 cr.)
Presents growth, development, present status, and trends of the food and lodging industry. Includes special problems of operating small and medium sized establishments. Introduces credit and accounting procedures, management of staff, marketing, advertising, and security as well as personal attitudes, qualifications, and ethics. Prerequisites: ACC 115 and HRI 235. 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 hours per week.

HRI 159 Introduction to Hospitality Industry Computer Systems (4 cr.)
Familiarizes students with computerized information technology to manage information, support decision-making and analysis, improve processes, increase productivity, and enhance customer service in the hospitality industry. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

HRI 160 Executive Housekeeping (3 cr.)
Studies the housekeeping department with emphasis on organization, staffing and scheduling, staff development, work methods improvements, equipment, cleaning materials and cleaning procedures; maintenance and refurnishing; and, room design and safety engineering. Lecture 3 hours per week.

HRI 205 Fundamentals of Wine (3 cr.)
Familiarizes the student with basic knowledge needed to make decisions relative to the purchase, storage, and service of wine, as well as decisions relative to the use of wine in the hospitality and food service industry. Lecture 3 hours per week.

HRI 206 International Cuisine (3 cr.)
Introduces the concepts of cultural differences and similarities and the preparation of the food specialties of the major geographical areas of the world. Focuses on emerging cuisines as they become popular. Prerequisite: HRI 220. Corequisites: HRI 147 and HRI 207. 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. Prerequisite: HRI 220. Corequisites: HRI 147 and HRI 206. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 218 Fruit, Vegetable, and Starch Preparation (3 cr.)
Instructs the student in the preparation of fruits, vegetables, grains, cereals, legumes, and farinaceous products. Promotes the knowledge/skills necessary to prepare menu items from fruits, vegetables, and their byproducts, and to select appropriate uses as meal components. Prerequisite: HRI 219. Corequisite: HRI 220. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 219 Stock, Soup, and Sauce Preparation (3 cr.)
Instructs the student in the preparation of stocks, soups, and sauces. Promotes the knowledge/skills to prepare stocks, soups, and sauces, and to select appropriate uses as meal components. Corequisite HRI 106. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 220 Meat, Seafood, and Poultry Preparation (3 cr.)
Provides the study and preparation of meat, poultry, shellfish, fish, and game. Promotes the know-ledge/skills required to select appropriate use of these foods as meal components. Prerequisite: HRI 219. Corequisite: HRI 218. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 224 Recipe and Menu Management (3 cr.)
Presents a comprehensive framework for creating and evaluating recipes and menus for commercial and non-commercial food service operations. Requires students to use microcomputer software to design recipes, recipe files, and menus. Teaches students menu engineering analysis and methods for optimizing menu contribution margin. Prerequisite: HRI 159 or equivalent. Lecture 3 hours per week.

HRI 226 Nutritional Analysis of Menus (1 cr.)
Focuses on the study of nutritional analysis as applied to actual commercial and non-commercial menus. Lecture 1 hour per week.

HRI 235 Marketing of Hospitality Services (3 cr.)
Studies principles and practices of marketing the services of the hotel and restaurant industry. Emphasizes the marketing concept with applications leading to customer satisfaction. Reviews methods of external and internal stimulation of sales. May include a practical sales/marketing exercise and computer applications. Lecture 3 hours per week.

HRI 240 Managing Technology in the Hospitality Industry (3 cr.)
Provides an overview of the information needs of lodging properties and food service establishments; addresses essential aspects of computer systems, such as hardware, software, and generic applications; focuses on computer-based property management systems for both front office and back office functions; examines features of computerized restaurant management systems; describes hotel sales computer applications, revenue management strategies, and accounting applications; addresses the selection and implementation of computer systems; focuses on managing information systems; and examines the impact of the Internet and private intranets on the hospitality industry. Lecture 3 hours per week.

HRI 241 Supervision in the Hospitality Industry (3 cr.)
Provides a comprehensive review of considerations for preparing students to become effective supervisors in restaurants and lodging operations. Lecture 3 hours per week.

HRI 242 Training and Development for the Hospitality Industry (3 cr.)
Provides a thorough look at training by addressing how to assess and analyze the training needs of new and established hospitality operations; look upon training and development as an investment; use training tools and techniques; train with technology; measure and evaluate training; and use different training techniques when training employees, supervisors, and managers. Lecture 3 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. Prerequisite: MTH 120 or program head approval. Lecture 3 hours per week.

HRI 255 Human Resources Management and Training for Hospitality and Tourism (3 cr.)
Prepares students for interviewing, training, and developing employees. Covers management skills (technical, human, and conceptual) and leadership. Covers the establishment and use of effective training and evaluative tools to improve productivity. Emphasizes staff and customer relations. Lecture 3 hours per week.

HRI 257 Catering Management (3 cr.)
Studies special functions in the hospitality industry. Presents lecture and demonstration in banquet layout, menus, services, sales, and supervision. Lecture 3 hours per week.

HRI 258 Quality Management for Culinarians (1 cr.)
Covers quality management principles to enhance the student's ability to deliver quality foodservice through effective management. Lecture 1 hour per week.

HRI 260 HACCP Applications for Culinarians (1 cr.)
Focuses on managing risk in food handling through application of HACCP principles in a foodservice setting. Lecture 1 hour per week.

HRI 265 Hotel Front Office Operations (3 cr.)
Analyzes hotel front office positions and the procedures involved in reservation registration, accounting for and checking out guests, and principles and practices of night auditing. Covers the complete guest operation in both traditional and computerized operations. Lecture 3 hours per week.

HRI 270 Strategic Lodging Management (3 cr.)
Presents lodging management principles, focusing on strategic planning as the foundation for operational effectiveness. Synthesizes management practices which can be used by entry-level, mid-level, and executive management. Prerequisites: HRI 154 and ACC 115 or equivalent. Lecture 3 hours per week.

HRI 275 Hospitality Law (3 cr.)
Studies legal principles governing hospitality operations. Includes applications of common law and statutory decisions, discussion of legal theory, and regulations governing management of hospitality enterprises. Lecture 3 hours per week.

HRI 280 Principles of Advanced Baking and Pastry (3 cr.)
Reviews foundation principles of classical and modern baking/pastry methods. Prerequisites: (1) completion of HRI 128 at a Virginia Community college, (2) American Culinary Federation (ACF) Certification, (3) a minimum of three years work experience in a bakery or pastry kitchen or in a related field, (4) completion of a Culinary Arts certificate or degree program from an accredited college or university, (5) permission of the program head. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 281 Artisan Breads (3 cr.)
Provides an integrated study of both classical and modern bread baking methods. Focuses on craft baking using simple ingredients to create superior products. Prerequisite: HRI 280. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 282 European Tortes and Cakes (3 cr.)
Provides an integrated study of classical European tortes and cakes. Prerequisites: HRI 280 and HRI 283. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 283 Custards and Crèmes (3 cr.)
Consists of an integrated study of classical and contemporary custards and crèmes as menu items and recipe ingredients. Prerequisite: HRI 280. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 284 Specialty, Spa, and Plated Desserts (3 cr.)
Provides an integrated study of specialty, spa, and plated desserts, which possess enhanced value through artistic presentation. Prerequisites: HRI 280 and HRI 282. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 285 Chocolate and Sugar Arts (3 cr.)
Focuses on the study of chocolate and sugar as used by the pastry artist to create candies, confections, and showpieces. Prerequisite: HRI 280. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 286 Wedding and Specialty Cakes (3 cr.)
Provides an integrated study of wedding and specialty cakes. Prerequisites: HRI 280 and HRI 285. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 290 Coordinated Internship in Hospitality Management (3 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 15 hours per week.

HRI 298 Seminar and Project (3 cr.)
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. Involves field research and observation, independent research, and development of a context for assimilating hospitality management principles. Prerequisites: HRI 154, HRI 140, HRI 235, and HRI 255. Lecture 3 hours per week.

HRI 299 Capstone in Culinary Arts (2 cr.)
Provides an opportunity for the student and instructor to work together to identify the critical areas of need in the student's repertoire. An individualized plan will be developed to address the student's weaknesses and to lead progressively to a group demonstration of critical skills. Lab, lecture, research, and out of class projects will be utilized. Prerequisites: HRI 106, 218, 219, 220, 206, 207, 145, and HRI 128. Laboratory 4 hours per week.

HRT - HORTICULTURE

HRT 106 Practical Horticulture (1 cr.)
Provides practical experience in landscape construction equipment operations and maintenance. Laboratory 2 hours per week.

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. 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 119 Irrigation Systems for Turf and Ornamentals (3 cr.)
Explains why, when, and how irrigation systems are used by the grounds management industry. Includes component selection, system design, installation, operation, and maintenance. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 120 History of Garden Design (3 cr.)
Studies the development of gardens as they chronicle the development of civilization. Introduces the periods, in both Europe and North America, beginning with settlement, on through industrial development, land and space utilization to current environmental concerns. Explores physical and cultural influences on garden design and utilization. Lecture 3 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 affecting production of seasonal crops. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 122 Greenhouse Crop Production II (3 cr.)
Continues commercial practices related to production of floriculture crops. Considers production requirements, environmental control and management, and cultural techniques. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 125 Chemicals in Horticulture (3 cr.)
Emphasizes basic chemical principles and their application to horticulture. Introduces principles of inorganic and organic chemicals. Studies chemical activities of insecticides, fungicides, herbicides, fertilizers, and growth regulators. Provides students an opportunity to test for their Commercial Pesticide Applicators License, administered by VDACS, at the end of the course. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 126 Home Landscaping (3 cr.)
Studies current approaches to improving home landscapes. Emphasizes planning, proper implementation, and landscape maintenance. Lecture 3 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 130 Introduction to Biointensive Mini-Farming (3 cr.)
Familiarizes students, through lecture and demonstration, with small-scale food production by gardening. Covers the basics of composting and organic vegetable gardening using biointensive methods. Lecture 3 hours per week.

HRT 134 Four Season Food Production (3 cr.)
Familiarizes students with organic small-scale food production through lecture and demonstration. Includes seed saving, cover crops, and gardening planning. Lecture 3 hours per week.

HRT 150 Theory of Landscape Design (3 cr.)
Presents the theoretical aspects of landscape planning and design. Uses theory to analyze and solve design problems. Lecture 3 hours per week.

HRT 195 Topics in Horticulture: Annuals (1 cr.)
Considers annuals used in the landscape. Includes site selection and evaluation for annual culture under various environmental conditions, taxonomic identification, and control of insects and diseases. Lecture 1 hour per week.

HRT 195 Topics in Horticulture: Introduction to Mushroom Culture (1 cr.)
Covers fungi in human culture, biology and ecology of fungi, mushroom culture, and home garden and landscape use of fungi. Lecture 1 hour per week.

HRT 195 Topics in Horticulture: Tree and Shrub Propagation (2 cr.)
Introduces propagation of select trees and shrubs. Lecture 2 hours per week.

HRT 201 Landscape Plant Materials I (3 cr.)
Studies landscape use of plants. Considers ornamental value, growth habit, identification, and limitations. Focuses on trees and shrubs. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 202 Landscape Plant Materials II (3 cr.)
Studies landscape use of plants. Considers ornamental value, growth habit, identification, and limitations. Focuses on trees and shrubs. Part II of II. 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 225 Nursery and Garden Center Management (3 cr.)
Covers aspects of nursery management, including culture, plant handling, and facilities layout. Discusses aspects of garden center management, including planning and layout, purchasing, product selection, marketing, merchandising, and display. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 226 Greenhouse Management (3 cr.)
Discusses the theoretical and applied practices of managing a greenhouse facility. Emphasizes greenhouse construction and design, environmental control, energy conservation, and related topics. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 227 Professional Landscape Management (3 cr.)
Focuses on basic practices and techniques involving landscape management. Includes development of a year-round management calendar and preparation of bid and contract proposals. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 231 Planting Design I (3 cr.)
Applies landscape theory and principles of drawing to the planning of residential and small scale commercial landscape designs. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 232 Planting Design II (3 cr.)
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 235 Landscape Drawing (3 cr.)
Teaches students the use of drafting equipment. Emphasizes drawing techniques and use of media. Includes hard line and free-style landscape drawing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 238 Growing for Market Mini-Farming (3 cr.)
Focuses on development of a marketing plan for mini-farm items offered for sale to the public, retail and wholesale. Includes hands-on experience in double digging, planting, crop testing, and utilization of compost. Prerequisite: HRT 130 or permission of instructor. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 239 Complete Diet Mini-Farming (3 cr.)
Considers biointensive methods by which food can be grown for personal or family consumption, emphasizing high nutritional yield in relatively small areas. Focuses on the development of a garden plan that includes vegetable and root crops and grains used for food and composing. Prerequisite: HRT 130 or permission of instructor. Lecture 3 hours per week.

HRT 249 Perennial Plants (3 cr.)
Considers the perennial plants used in the landscape. Includes site selection and evaluation for perennial culture, perennial plant selection, perennial culture under various environmental conditions, taxonomic identification, and control of insects and diseases. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 259 Arboriculture (3 cr.)
Studies the techniques of tree care. Covers surgery, pruning, insect and disease recognition and control, fertilization, cabling, and lightning rod installation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 260 Introduction to Floral Design (3 cr.)
Teaches skills required for the composition of basic table arrangements. Includes the history of design styles, identification of flowers and greens, identification and use of equipment, and conditioning and handling of flowers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 266 Advanced Floral Design (3 cr.)
Teaches skills required for composition of traditional floral designs and contemporary floral designs. Includes wedding, funeral, and special occasion designs, and the use of exotic florals to create arrangement styles such as Japanese, European, and Williamsburg. Prerequisite: HRT 260. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 268 Advanced Floral Design Applications (3 cr.)
Teaches skills required for the composition of large floral arrangements. Includes wedding, funeral, and special occasion designs for the home as well as public areas. Includes use of dried and silk flowers for special occasions. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 269 Professional Turf Care (3 cr.)
Covers turfgrass identification, selection, culture, propagation, and pest control. Surveys commercial turf care operations and use of common equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 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 290 Coordinated Internship in Horticulture (2 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 4 hours per week.

HRT 295 Topics in Horticulture: Sports Turf Management (3 cr.)
Addresses the scientific principles for the establishment and maintenance of intensely managed turfgrass for golf courses and athletic fields. Topics include seeding, sprigging, sodding, irrigation, fertilization, weed identification and control, insect identification and control, fungus identification and control, drainage, and mowing. Also covers critical tasks for constructing recreational turfgrass facilities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 295 Topics in Horticulture: The ABC's of Green Industry Communications (2 cr.)
Considers "branding" and "green marketing " strategies to improve business planning. Lecture 2 hours per week.

HUM- HUMANITIES

HUM 100 Survey of the Humanities (3 cr.)
Introduces the humanities through the art, literature, music, and philosophy of various cultures and historical periods. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Lecture 3 hours per week.

IND - INDUSTRIAL ENGINEERING TECHNOLOGY

IND 116 Applied Technology (3 cr.)
Introduces basic information and problem solving techniques in liquids, gases, solids, metrics, mechanics, forces, simple machines, heat, light, sound, and nuclear energy as applied in industrial engineering technologies. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

INT - INTERPRETER EDUCATION

INT 105 Interpreting Foundations I (3 cr.)
Develops fundamental skills of interpreting, including cognitive processes and intralingual language development in English and ASL. Reviews Process Models of interpreting, and uses one to analyze interpretations. Develops feedback skills essential to the team interpreting process. Part I of II. Prerequisite: placement for ENG 111. Lecture 3 hours per week.

INT 106 Interpreting Foundations II (3 cr.)
Develops fundamental skills of interpreting, including cognitive processes and intralingual language development in English and ASL. Reviews Process Models of interpreting, and uses one to analyze interpretations. Develops feedback skills essential to the team interpreting process. Part II of II. Prerequisite: placement for ENG 111. Lecture 3 hours per week.

INT 107 Translation Skills 3 [cr.)
Further develops fundamental skills needed for the task of interpreting Targets comprehending source language (either ASL or English), transferring content into memory store (breaking from original form), restructuring into target language, maintaining message equivalence, conveying implicit and inferred information, and applying appropriate discourse structure. Reviews Process Model of interpreting, and uses it to analyze translations. Further develops feedback skills essential to the team interpreting process. Prerequisites: ASL 262, INT 105, and INT 106. Lecture 3 hours per week.

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. Prerequisite: placement for ENG 111. Lecture 3 hours per week.

INT 133 ASL-to-English Interpretation I (3 cr.)
Provides students the opportunity to begin consecutively interpreting monologues from the source language (ASL) to the target language (English); watch, process, and analyze entire ASL monologues; choose appropriate English to match the message; and, eventually interpret the monologue into English. Puts interpreting theory into practice in a lab environment. Develops team interpreting techniques and provides students with the opportunity to interact with consumers of ASL-English interpretation and conduct research in the field of interpretation. Prerequisite: INT 107. Lecture 3 hours per week.

INT 134 English-to-ASL Interpretation I (3 cr.)
Provides students the opportunity to begin consecutively interpreting monologues from the source language (English) to the target language (ASL); listen to, process, and analyze entire English monologues; and, choose appropriate ASL to match the message. Puts interpreting theory into practice in a lab environment. Develops team interpreting techniques and provides students with the opportunity to interact with consumers of ASL-English interpretation and conduct research in the field of interpretation. Prerequisite: INT 107. Lecture 3 hours per week.

INT 195 Topics in Interpreter Education: EIPA Written Assessment Prep (1 cr.)
Covers the contents of the Educational Interpreter Performance Assessment (EIPA) written exam, which includes the following: role and function of the K-12 educational interpreter; knowledge and application of the EIPA code of ethics; knowledge and application of applicable state and federal laws; and, linguistic questions related to the languages of English and American Sign Language. Prerequisite: placement for ENG 111. Co-requisite: ASL 220 or program head permission. Lecture 1 hour per week.

INT 195 Topics in Interpreter Education: Introduction to ASL-English Interpretation (1 cr.)
Introduces the student to the ASL-English Interpretation AAS degree requirements and other avenues necessary to achieve certification, establishes the standard of work ethic required to successfully complete the curriculum, provides an overview of the requirements typically required to work as an interpreter, and provides for an introduction to and a discussion of the application of the RID Code of Ethics and the NAD-RID Code of Professional Conduct. Prerequisite: placement for ENG 111 and demonstrated fluency in ASL. Lecture 1 hour per week.

INT 195 Topics in Interpreter Education: Introduction to Oral Transliteration I (1 cr.)
Studies roles, responsibilities, and qualifications involved in working as an oral transliterator. Addresses specific linguistic and communication concerns typically occurring in the oral transliteration setting. Prerequisite: placement for ENG 111. Lecture 1 hour per week.

INT 195 Topics in Interpreter Education: VQAS Written Assessment I (1 cr.)
Covers the contents of the Virginia Quality Assurance Screening (VQAS) written exam, which includes the following: role and function of the ASL-English interpreter, knowledge and application of the RID code of ethics, and knowledge and application of applicable state and federal laws. Prerequisite: placement for ENG 111 or program head permission. Lecture 1 hour per week.

INT 233 ASL-to-English Interpretation II (3 cr.)
Teaches students to perform simultaneous interpretations of monologues in the source language (ASL) to the target language (English) and process an incoming ASL monologue while simultaneously producing an appropriate interpretation in English. Provides students the opportunity to conduct research in the field of interpretation, apply team interpreting techniques, and interact with consumers of interpretation. Prerequisites: INT 133 and INT 134. Lecture 3 hours per week.

INT 234 English-to-ASL Interpretation II (3 cr.)
Teaches students to perform simultaneous interpretations of monologues in the source language (English) into the target language (ASL) and process an incoming English monologue while simultaneously producing an appropriate interpretation in ASL. Provides students the opportunity to conduct research in the field of interpretation, apply team interpreting techniques, and interact with consumers of interpretation. Prerequisites: INT 133 and INT 134. Lecture 3 hours per week.

INT 250 Dialogic Interpretation I (3cr.)
Provides students the opportunity to apply interpreting fundamentals, interpret dialogs between spoken English and ASL users, analyze interpretations by using a Process Model of Interpreting, conduct research, practice team interpreting skills in an interactive interpreting environment, and prepare for the interactive nature of standard interpreting evaluations. Prerequisites: INT 233 and INT 234. Lecture 3 hours per week.

INT 280 Interpreter Assessment Preparation (3 cr.)
Prepares student to sit for a specific interpreter assessment tool. Examines the contents of the various segments of the assessment tool. Provides an opportunity for the student to design and implement a specific individualized work plan based upon a diagnostic assessment of the student's interpretation product to improve all knowledge, skill and ability elements in order to meet or exceed the competency set for the selected interpreter assessment tool. Prerequisites: INT 233 and INT 234 or permission of the program head. Lecture 3 hours per week.

INT 290 Coordinated Internship in Interpreter Education (3 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 12 hours per week.

INT 295 Topics in Interpreter Education: Interpreting in Safe Settings (3cr.)
Studies roles, responsibilities, and qualifications involved in working in the free-lance setting, including ethical and business practices. Addresses specific linguis-

tic, placement, and practice concerns for the freelance/contract practitioner. Prerequisites: INT 133 and INT 134 or instructor permission. Lecture 3 hours per week.

ITD - INFORMATION TECHNOLOGY DESIGN

ITD 110 Web Page Design I (3 cr.)
Stresses a working knowledge of web site designs, construction, and management using HTML or XHTML. Includes headings, lists, links, images, image maps, tables, forms, and frames. Prerequisite: ITE 115 or school approval. Lecture 3 hours per week.

ITD 112 Designing Web Page Graphics (3 cr.)
Addresses the creation of digital graphics for web design. Explores basic design elements, such as color and layout, utilizing a computer graphics program. Prerequisite: ITE 115 or school approval. Lecture 3 hours per week.

ITD 130 Database Fundamentals (4 cr.)
Introduces the student to Relational Database and Relational Database theory. Includes planning, defining and using a database; table design, linking, and normalization; and, types of databases, database description and definition. Prerequisite: ITE 115 or school approval. Lecture 4 hours per week.

ITD 132 Structured Query Language (4 cr.)
Incorporates a working introduction to commands, functions, and operators used in SQL for extracting data from standard databases. Provides students with a hands-on experience developing code, functions, triggers, and stored procedures for SQL Server 2005. Prerequisite ITD 130 or equivalent. Lecture 4 hours per week.

ITD 134 PL/SQL Programming (4 cr.)
Presents a working introduction to PL/SQL programming within the Oracle RDBMS environment. Includes PL/SQL fundamentals of block program structure, variables, cursors and exceptions, and creation of program units of procedures, functions, triggers and packages. Prerequisite: ITD 130 or school approval. Lecture 4 hours per week.

ITD 210 Web Page Design II (4 cr.)
Incorporates advanced techniques in web site planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editor software. Prerequisite: ITD 110 or school approval. Lecture 4 hours per week.

ITD 295 Topics in Information Technology Design: Advanced Dreamweaver Software (3 cr.)
Presents the advanced features of Macromedia Dreamweaver. Prerequisite: Dreamweaver course or equivalent. Lecture 3 hours per week.

ITD 295 Topics in Information Technology Design: Service Oriented Architecture (SOA) Design and Development (3 cr.)
Presents the principles and approach for Service Oriented Architecture (SOA) design and development to effectively decompose business processes and lower level activities into standards-based reusable and secure services. The ability to effectively manage the lifecycle and a catalog of available services is fundamental to achieving success within SOA initiatives. Prerequisite: programming course or equivalent. Lecture 3 hours per week.

ITD 295 Topics in Information Technology Design: SQL Server 2005 Reporting Services (SSRS) (4 cr.)
Teaches students to build and extract valuable information from the database by using SQL Server 2005 Reporting Services (SSRS). Lecture 4 hours per week.

ITD 298 Seminar and Project – Web Design Capstone (4 cr.)
Provides students with hands-on experience developing exemplary Web sites created with Dreamweaver using advanced behaviors and techniques such as Asynchronous JavaScript And XML (AJAX), database connectivity, Flash with ActionScript 3.0, and additional components that students will select. Prerequisite: ITD 210 or permission from the instructor. Lecture 4 hours per week.

ITE - INFORMATION TECHNOLOGY ESSENTIALS

ITE 115 Introduction to Computer Applications and Concepts (3 cr.)
Covers computer concepts and internet skills and use a software suite which includes word processing, spreadsheet, database, and presentation software to demonstrate skills required for computer literacy. Prerequisite: keyboarding skills. Lecture 3 hours per week.

ITE 130 Introduction to Internet Services (3 cr.)
Provides students with a working knowledge of Internet terminology and services including e-mail, WWW browsing, search engines, ftp, file compression, and other services using a variety of software packages. Provides instruction for basic web page construction. Lecture 3 hours per week.

ITE 140 Spreadsheet Software (Excel) (3 cr.)
Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Includes typing and editing text in a cell, entering data on multiple worksheets, working with formulas and functions, creating charts, and pivot tables, styles, inserting headers and footers, and filtering data. Covers MOS Excel objectives. Prerequisite: ITE 115 or school approval. Lecture 3 hours per week.

ITE 150 Desktop Database Software (Access) (3 cr.)
Incorporates instruction in planning, defining, and using a database; performing queries; producing reports; working with multiple files; and concepts of database programming. Includes database concepts, principles of table design and table relationships, entering data, creating and using forms, using data from different sources, filtering, and creating mailing labels. Covers MOS Access certification objectives. Prerequisite: ITE 115 or school approval. Lecture 3 hours per week.

ITE 195 Microsoft Outlook 2003-Advanced (1 cr.)
Covers some of the advanced features of Microsoft Outlook 2003 including customizing Outlook, searching and filtering messages, organizing and managing the mailbox, and working with folders. Prerequisite: basics of Microsoft Outlook or equivalent knowledge. Lecture 1 hour per week.

ITE 215 Advanced Computer Applications and Integration (3 cr.)
Incorporates advanced computer concepts including the integration of a software suite. Prerequisite: ITE 115 or school approval. Lecture 3 hours per week.

ITE 221 PC Hardware and OS Architecture (4 cr.)
Covers instruction about processors, internal functions, peripheral devices, computer organization, memory management, architecture, instruction format, and basic OS architecture. Lecture 4 hours per week.

ITE 295 Advanced Excel (3 cr.)
Continues the content of ITP 140, Excel. Covers advanced topics, such as what-if analysis tools, functions, working with enhanced formatting tools, connecting to external data, integrating with other windows programs, creating a shared workbook, and Visual Basic for Applications. Uses projects to reinforce the advanced topics. Prerequisite: ITE 140 or equivalent. Lecture 3 hours per week.

ITN - INFORMATION TECHNOLOGY NETWORKING

ITN 101 Introduction to Network Concepts (4 cr.)
Provides instruction in networking media, physical and logical topologies, common networking standards, and popular networking protocols. Emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Includes selected topics in network implementation, support, and LAN/WAN connectivity. Prerequisite: ITE 221 or school approval. Lecture 4 hours per week.

ITN 110 Client Operating System (Windows 7) (4 cr.)
Covers installation, configuration, administration, management, maintenance, and troubleshooting of the Client Operating System (Windows 7) in a networked data communications environment. Prerequisite: ITN 101. Lecture 4 hours per week.

ITN 111 Server Administration (Windows 2008) (4 cr.)
Covers basic instruction in various network protocols, name resolution services, remote access, security, and print installation, configuration, administration, monitoring, and troubleshooting of Server Administration software (Windows 2008) in an Active Directory domain environment. Prerequisite: ITN 110 or school approval. Lecture 4 hours per week.

ITN 112 Network Infrastructure (Windows 8) (4 cr.)
Provides extensive instruction for the technical knowledge required for installation, configuration, administration, monitoring, and troubleshooting of Network Infrastructure services (Windows 8) such as NDS, DHCP, WINS, RRAS, NAT, and Certificate Authority to support the network infrastructure. Prerequisite: ITN 111 or school approval. Lecture 4 hours per week.

ITN 113 Active Directory (Windows 2008) (4 cr.)
Covers installation, configuration, administration, monitoring, and troubleshooting of Active Directory (Windows 8) components, DNS, Group Policy objects, RIS, and security. Prerequisite: ITN 111 or school approval. Lecture 4 hours per week.

ITN 154 Networking Fundamentals-Cisco (4 cr.)
Introduces networking using the OSI reference model. Covers data encapsulation, TCP/IP suite, routing, IP addressing, and structured cabling design and implementation. Prerequisite: ITE 221. Lecture 4 hours per week.

ITN 155 Introductory Routing--Cisco (4 cr.)
Features an introduction to basic router configuration using Cisco IOS software. Includes system components, interface configuration, IP network design, troubleshooting techniques, configuration and verification of IP addresses, and router protocols. Prerequisite: ITN 154 or school approval. Lecture 4 hours per week.

ITN 156 Basic Switching and Routing--Cisco (4 cr.)
Centers instruction in LAN segmentation using bridges, routers, and switches. Includes fast Ethernet, access lists, routing protocols, spanning tree protocol, virtual LANs, and network management. Prerequisite: ITN 155 or school approval. Lecture 4 hours per week.

ITN 157 WAN Technologies--Cisco (4 cr.)
Concentrates on an introduction to Wide Area Networking (WANs). Includes WAN design, LAPB, Frame Relay, ISDN, HDLC, and PPP. Prerequisite: ITN 156 or school approval. Lecture 4 hours per week.

ITN 170 Linux System Administration (4 cr.)
Focuses on the installation, configuration, and administration of the Linux operating system and emphasizes the use of Linux as a network client and workstation. Prerequisite: ITN 171 or school approval. Lecture 4 hours per week.

ITN 171 UNIX I (3 cr.)
Introduces UNIX operating systems. Teaches login procedures, file creation, UNIX file structure, input/output control, and the UNIX shell. Prerequisite: ITE 115 or school approval. Lecture 3 hours per week.

ITN 242 Windows Microsoft Exchange 2003 Server (4 cr.)
Incorporates instruction on how to implement, manage and troubleshoot an Exchange Server 2003 organization. Prerequisite: ITN 111 or school approval. Lecture 4 hours per week.

ITN 260 Network Security Basics (3 cr.)
Explores the basics of network security in depth. Includes security objectives, security architecture, security models and security layers. Covers risk management, network security policy, and security training. Includes the five security keys: confidentiality, integrity, availability, accountability, and auditability. Prerequisite: ITE 115 or school approval. Lecture 3 hours per week.

ITN 261 Network Attacks, Computer Crime, and Hacking (4 cr.)
Explores indepth various methods for attacking and defending a network. Covers network security concepts from the viewpoint of hackers and their attack methodologies. Discusses hackers, attacks, Intrusion Detection Systems (IDS), malicious code, computer crime, and industrial espionage. Prerequisite: ITN 260 or school approval. Lecture 4 hours per week.

ITN 262 Network Communication, Security, and Authentication (4 cr.)
Explores indepth various communication protocols with a concentration on TCP/IP. Discusses communication protocols from the point of view of the hacker in order to highlight protocol weaknesses. Includes Internet architecture, routing, addressing, topology, fragmentation and protocol analysis. Includes the use of various utilities to explore TCP/IP. Prerequisite: ITN 261 or school approval. Lecture 4 hours per week.

ITN 263 Internet/Intranet Firewalls and e-Commerce Security (4 cr.)
Explores indepth firewall, Web security, and e-Commerce security. Covers firewall concepts, types, topology, and the firewall's relationship to the TCP/IP protocol. Discusses client/server architecture, the Web server, HTML, and HTTP in relation to Web Security, and digital certification, D.509, and public key infrastructure (PKI). Prerequisite: ITN 262 or school approval. Lecture 4 hours per week.

ITN 266 Network Security Layers (4 cr.)
Explores indepth various security layers needed to protect the network. Addresses network security from the viewpoint of the environment in which the network operates and the necessity to secure that environment to lower the security risk to the network. Includes physical security, personnel security, operating system security, software security, and database security. Prerequisite: ITN 262 or school approval. Lecture 4 hours per week.

ITN 267 Legal Topics in Network Security (3 cr.)
Explores indepth the civil and common law issues that apply to network security. Addresses statutes, jurisdictional, and constitutional issues related to computer crime and privacy. Includes rules of evidence, seizure and evidence handling, court presentation, and computer privacy in the digital age. Prerequisite: ITN 262 or school approval. Lecture 3 hours per week.

ITN 270 Advanced Linux Network Administration (4 cr.)
Focuses on the configuration and administration of the Linux operating system as a network server. Emphasizes the configuration of common network services such as routing, http, DNS, DHCP, ftp, telnet, SMB, NFS, and NIS. Prerequisite: ITN 170 or school approval. Lecture 4 hours per week.

ITN 295 Topics in Information Technology Networking: Network Security--Cisco (4 cr.)
Aims to develop an in-depth understanding of network security principles, implementation, and utilization of network security tools, network configurations, and analysis of a comprehensive security plan. Lecture 4 hours per week.

ITN 295 Topics in Information Technology Networking: Windows Help Desk I (4 cr.)
Teaches the skills necessary to support and to successfully troubleshoot end users running windows operating system. Prerequisite: ITN 110 or equivalent. Lecture 4 hours per week.

ITN 295 Topics in Information Technology Networking: Windows Help Desk II (4 cr.)
Teaches the skills necessary to support and to successfully troubleshoot desktop applications running windows operating system. Prerequisite: ITN 295, Windows Help Desk I, or equivalent. Lecture 4 hours per week.

ITN 298 Seminar and Project: Networking Capstone Course (4 cr.)
Covers the use of advanced concepts and utilities with current network operating systems. Includes administrator duties such as server organization, permissions and rights, and client side issues such as configuration, troubleshooting, and installation of applications. Prerequisites: ITN 111, ITN 260, ITN 171 or equivalent courses and knowledge. Lecture 4 hours per week.

ITP - INFORMATION TECHNOLOGY PROGRAMMING

ITP 112 Visual Basic.NET I (4 cr.)
Concentrates instruction in fundamentals of object-oriented programming using Visual Basic.NET and the .NET framework. Emphasizes program construction, algorithm development, coding, debugging, and documentation of graphical user interface applications. Lecture 4 hours per week.

ITP 120 Java Programming I (4 cr.)
Teaches the fundamentals of object-oriented programming using Java. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. Lecture 4 hours per week.

ITP 136 C# Programming I (4 cr.)
Teaches the fundamentals of object-oriented programming and design using C#. Emphasizes program construction, algorithm development, coding, debugging, and documentation of applications within the .NET Framework. Lecture 4 hours per week.

ITP 160 Introduction to Game Design and Development (3 cr.)
Introduces object-oriented game design and development. Provides overview of the electronic game design and development process and underlines the historical contest, content creation strategies, game careers, and future trends in the industry. Utilizes a game language environment to introduce game design, object-oriented paradigms, software design, software development and product testing. Teaches skills of writing a game design document and creating a game with several levels and objects. Integrates 2D animations, 3D models, sound effects, and background music as well as graphic backgrounds. Prerequisite: ITE 115 or equivalent. Lecture 3 hours per week.

ITP 195 Python Programming I (4 cr.)
Provides students with knowledge of a popular software development tool, Python programming language. Teaches users of spreadsheets, games, data quality tools, and much more will learn to use Python to express rich yet flexible business rules in a lightweight syntax. Lecture 4 hours per week.

ITP 212 Visual Basic.NET II (4 cr.)
Includes instruction in application of advanced event-driven techniques to application development. Emphasizes database connectivity, advanced controls, web forms, and web services using Visual Basic .NET. Prerequisite: ITP 112. Lecture 4 hours per week.

ITP 220 Java Programming II (4 cr.)
Covers the application of advanced object-oriented techniques to application development using Java. Emphasizes database connectivity, inner classes, collection classes, networking, and threads. Prerequisite: ITP 120 or school approval. Lecture 4 hours per week.

ITP 236 C# II (4 cr.)
Focuses instruction in advanced object-oriented techniques using C# for application development. Emphasizes database connectivity and networking using the .NET Framework. Prerequisite: ITP 136 or equivalent. Lecture 4 hours per week.

ITP 244 ASP.NET -- Server Side Programming (4 cr.)
Teaches the 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. Prerequisite: ITP 112 or ITP 136 or school approval. Lecture 4 hours per week.

ITP 251 Systems Analysis and Design (3 cr.)
Focuses on application of information technologies (IT) to system life cycle methodology, systems analysis, systems design, and system implementation practices. Covers methodologies related to identification of information requirements; feasibility in the areas of economic, technical and social requirements; and related issues. Software applications may be used to enhance student skills. Prerequisite: ITE 115 or school approval. Lecture 3 hours per week.

ITP 295 Ruby Programming (4 cr.)
Provides students with knowledge of a popular software development tool, Ruby programming language. Covers program construction, coding, debugging, and documentation of console, GUI and Web-based applications. Explores some of the alternative dynamic languages such as Groovy, Grails, and Clojure. Emphasizes the use of agile software development practices such as unit testing, integration testing, source code control, and continuous integration. Prerequisites ITP 112 or ITP 120 or ITP 136 or ITP 160. Lecture 4 hours per week.

ITP 295 Topics in Information Technology Programming: Project Management Tools (3 cr.)
Introduces the concepts of project management and how to use Microsoft Project software to manage project requirements. Prerequisite: ITE 115 or equivalent. Lecture 3 hours per week.

ITP 298 Seminar and Project: Programming Capstone (4 cr.)
Provides students with hands-on experience developing sophisticated web-based applications using ASP.NET and SQL Server including profiles, personalization, web parts, themes, multi-lingual, and web services. Students will work in small teams to build a semester-long project. Prerequisite: ITP 244 or permission of the instructor. Lecture 4 hours per week.

LGL – PARALEGAL STUDIES (LEGAL ADMINISTRATION)

LGL 110 Introduction to Law and the Legal Assistant (3 cr.)
Introduces various areas of law in which a legal assistant may be employed. Includes study of the court system (Virginia and federal) as well as a brief overview of criminal law, torts, domestic relations, evidence, the U.C.C., contracts, ethics, the role of the legal assistant, and other areas of interest. Prerequisite or co-

requisite: ENG 107 if recommended or permission of instructor. 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 and an overview of bankruptcy law. Lecture 3 hours per week.

LGL 125 Legal Research (3 cr.)
Provides an understanding of various components of a law library and emphasizes research skills through the use of digests, encyclopedias, reporter systems, codes, Shepard's Citations, ALR, and other research tools. Lecture 3 hours per week.

LGL 126 Legal Writing (3 cr.)
Studies proper preparation of various legal documents, including legal memoranda, letters, and pleadings. Involves practical applications. May include case and appellate briefs. Prerequisites: ENG 111 or permission of instructor and LGL 125. Lecture 3 hours per week.

LGL 200 Ethics for the Legal Assistant (1 cr.)
Examines general principles of ethical conduct applicable to legal assistants. Includes the application of rules of ethics to the practicing legal assistant. Lecture 1 hour per week.

LGL 210 Virginia and Federal Procedure (3 cr.)
Examines in-depth the rules of procedure in Virginia and federal court systems, including the Federal Rules of Civil Procedure and the Rules of Practice and Procedure in the District Court, Circuit Court, Court of Appeals, and Supreme Court of Virginia. Lecture 3 hours per week.

LGL 215 Torts (3 cr.)
Studies fundamental principles of the law of torts, including preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes personal injury, product liability, and medical malpractice cases. Lecture 3 hours per week.

LGL 216 Trial Preparation and Discovery Practice (3 cr.)
Examines the trial process, including the preparation of a trial notebook, pretrial motions, and orders. Includes 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 procedure. 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 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 226 Real Estate Abstracting (3 cr.)
Reviews aspects of abstracting title to real estate, recordation of land transactions, liens, grantor-grantee indices, warranties, covenants, restrictions, and easements. Prerequisite: LGL 228 or permission of program head. Lecture 3 hours per week.

LGL 228 Real Estate Settlement Practicum (3 cr.)
Focuses on methods and practices in administrative area of real estate closings, back title information, preliminary report from attorney's title notes, lender's requirements, payoffs, HUD-1 settlement statement, real estate taxes, interest, escrow, disbursement and release of liens of record. Lecture 3 hours per week.

LGL 235 Legal Aspects of Business Organizations (3 cr.)
Studies 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. Emphasizes the preparation of petitions, schedules, statements, and other forms. Lecture 3 hours per week.

LGL 245 Post-Trial and Appellate Practice (3 cr.)
Teaches post-trial motions, enforcing judgments and appellate practice and procedure. Emphasizes the preparation of documents to enforce judgments and to appeal a judgment from a Virginia District Court to a Virginia Circuit Court and to the Virginia Court of Appeals and Virginia Supreme Court, and from the United States District Court to the United States Supreme Court. Prerequisites: LGL 210 and LGL 216. Lecture 3 hours per week

LGL 290 Coordinated Internship in Legal Assisting (3 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 12 hours per week.

LGL 295 Topics in Paralegal Studies: Criminal Procedure (3 cr.)
Provides basic information on the role of the Paralegal in criminal cases, including preparation of the appropriate forms and motions. Includes both statutory law as well as criminal procedure. Lecture 3 hours per week.

LGL 295 Topics in Paralegal Studies: Information Systems for the Paralegal (3 cr.)
Covers Westlaw, Lexus/Nexus, legal software packages, and utilizing the internet in the practice of law. Prerequisites: Passing score on English placement test or completion of ENG 111 (or equivalent course), ITE 115, and LGL 125. Lecture 3 hours per week.

MDL - MEDICAL LABORATORY

MDL 101 Introduction to Medical Laboratory Techniques (3 cr.)
Introduces the basic techniques, including design of the health care system, ethics, terminology, calculations, venipuncture, and routine urinalysis. Prerequisites: all (or most with program head approval) general education courses required in the Medical Laboratory Technology program. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 105 Phlebotomy (3 cr.)
Introduces basic medical terminology, anatomy, physiology, components of health care delivery and clinical laboratory structure. Teaches techniques of specimen collection, specimen handling, and patient interactions. Prerequisite: satisfactory

score on the Reading Placement Test. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 110 Urinalysis and Body Fluids (3 cr.)
Studies the gross, chemical, and microscopic techniques used in the clinical laboratory. Emphasizes the study of clinical specimens, which include the urine, feces, cerebrospinal fluid, blood, and body exudates. Introduces specimen collection and preparation. Prerequisite or co-requisite: MDL 101. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 125 Clinical Hematology I (3 cr.)
Teaches the cellular elements of blood, including blood cell formation and routine hematological procedures. Prerequisite or co-requisite: MDL 101. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 190 Coordinated Internship I – MLT Phlebotomy (2 cr.)
Supervises on-the-job training in selected business, industrial, or service firms coordinated by the college. Prerequisite: MDL 101, including phlebotomy instruction. Laboratory 8 hours per week.

MDL 190 Coordinated Practice – Phlebotomy Training (5 cr.)
Supervises on-the-job training in selected business, industrial, or service firms coordinated by the college. Prerequisite: MDL 105 with a grade of "C" or better. Laboratory 20 hours per week.

MDL 190 Coordinated Practice II (3 cr.)
Supervises on-the-job training in selected business, industrial, or service firms coordinated by the college. Co-requisite: MDL 281. Laboratory 12 hours per week.

MDL 210 Immunology and Serology (3 cr.)
Teaches principles of basic immunology, physiology of the immune system, diseases involving the immune system, and serologic procedures. Prerequisite or co-requisite: MDL 101. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 216 Blood Banking (4 cr.)
Teaches fundamentals of blood grouping and typing, compatibility testing, antibody screening, component preparation, donor selection, and transfusion reactions and investigation. Prerequisite or co-requisite: MDL 210. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

MDL 225 Clinical Hematology II (3 cr.)
Teaches advanced study of blood to include coagulation, abnormal blood formation, and changes seen in various diseases. Prerequisite: MDL 125. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 251 Clinical Microbiology I (3 cr.)
Teaches handling, isolation, and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology and mycology. Prerequisite or co-requisite: MDL101. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

MDL 252 Clinical Microbiology II (3 cr.)
Teaches handling, isolation, and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology, mycology, parasitology and virology. Prerequisite: MDL 251 (or BIO 205). Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 262 Clinical Chemistry and Instrumentation II (4 cr.)
Introduces methods of performing biochemical analysis of clinical specimens. Teaches instrumentation involved in a clinical chemistry laboratory, quality control, and the ability to recognize technical problems. Prerequisites or co-requisites: MDL 101 and CHM 101 or CHM 111. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

MDL 281 Clinical Correlations (1 cr.)
Teaches students to apply knowledge gained in courses offered in the MDL curriculum using primarily a case history form of presentation. Emphasizes critical thinking skills in the practice of laboratory medicine. Lecture 1 hour per week.

MDL 282 Clinical Laboratory Techniques (3 cr.)
Includes performing techniques, procedures, and interpretations in all areas of the clinical laboratory or simulated laboratory setting. Prerequisites: MDL 110, MDL 225, MDL 252, MDL 262, and MDL 216 or equivalent. Co-requisite: MDL 281. Laboratory 12 hours per week.

MDL 290 Coordinated Practice IV – MLT (3 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Prerequisites: completion of all MDL courses and permission of the MDL program director. Co-requisite: MDL 281. Laboratory 12 hours per week.

MEN - MENTAL HEALTH

MEN 101 Mental Health Skill Training I (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. Part I of II. Lecture 3 hours per week.

MEN 102 Mental Health Skill Training II (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. Part II of II. Lecture 3 hours per week.

MKT - MARKETING

MKT 110 Principles of Selling (3 cr.)
Presents a fundamental, skills-based approach to the professional selling of products, services, and ideas, and to relationship building. Emphasizes learning effective interpersonal communication skills in all areas of the sales process through skill-building activities. Examines entry-level sales careers in retailing, wholesaling, services, and industrial selling. Focuses on building a positive self-image, following ethical behavior, understanding buyer needs, and appreciating the importance of a positive customer relationship strategy. Concludes in a professional sales presentation to buyers ranging from individual consumers to corporations. Lecture 3 hours per week.

MKT 120 Fundamentals of Fashion (3 cr.)
Develops an understanding of the principles and procedures involved in the production, distribution, and consumption of fashion merchandise. Traces the history and development of fashion and how these changes affect the fashion merchandising world. Focuses on changing consumer characteristics which influence demand for fashion products and the effects that fashion marketing activities have on the economy. Lecture 3 hours per week.

MKT 201 Introduction to Marketing (3 cr.)
Introduces students to the discipline of marketing and the need to create customer value and relationships in the marketplace. Presents an overview of the marketing principles and management strategies, along with the analytical tools used by organizations in the creation of a marketing plan. Lecture 3 hours per week.

MKT 209 Sports, Entertainment, and Recreation Marketing (3 cr.)
Builds on the principles of marketing to introduce the more specific importance and specialization of Sports, Entertainment, and Recreation (SER) marketing. Emphasizes the SER industries as they relate to economics, business structure, product development, branding, pricing strategies, distribution strategies, integrated communications, ethics, and research. Prerequisite: MKT 201. Lecture 3 hours per week.

MKT 210 Sales Management (3 cr.)
Presents an in-depth examination of managing a sales force. Introduces methods of training, compensating, motivating, and evaluating the sales force. Explores forecasting techniques and quotas. Lecture 3 hours per week.

MKT 215 Sales and Marketing Management (3 cr.)
Emphasizes the relationship of professional sales skills and marketing management techniques to successful profit and non- profit organizations. Focuses on challenges connected with the sales and distribution of products and services, including pricing, promotion, and buyer motivation. Demonstrates uses of the Internet to enhance marketing. Studies legal and ethical considerations. Introduces sales management in planning, organizing, directing, and controlling for a well-coordinated sales effort. Lecture 3 hours per week.

MKT 216 Retail Organization and Management (3 cr.)
Examines the organization of the retail establishment to accomplish its goals in an effective and efficient manner. Includes study of site location, internal layout, store operations, and security. Examines the retailing mix, the buying or procurement process, pricing, and selling. Studies retail advertising, promotion, and publicity as a coordinated effort to increase store traffic. Lecture 3 hours per week.

MKT 220 Principles of Advertising (3 cr.)
Emphasizes the role of advertising in the marketing of goods, services, and ideas. Discusses the different uses of advertising; types of media; how advertising is created; agency functions; and legal, social, and economic aspects of the industry. Introduces advertising display, copy and art work preparation, printing, and selection of media. Lecture 3 hours per week.

MKT 226 Visual Merchandising (3 cr.)
Introduces students to modern display techniques, equipment, and materials. Presents the basics of design for window and interior display in retail establishments. Provides students an opportunity to design, prepare, and execute displays. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MKT 227 Merchandise Buying and Control (3 cr.)
Studies the merchandising cycle. Explores techniques used in the development of buying resources, merchandising plans, model stock, unit control, and inventory systems. Highlights merchandise selection, policy pricing strategies, and inventory control methods. Lecture 3 hours per week.

MKT 228 Promotion (3 cr.)
Presents an overview of promotion activities, including advertising, visual merchandising, publicity, and sales promotion. Focuses on coordinating these activities into an effective campaign to promote sales for a particular product, business, institution, or industry. Emphasizes preparing budgets, selecting media, and analyzing the effectiveness of the campaign. Lecture 3 hours per week.

MKT 229 Marketing Research (3 cr.)
Introduces the marketing research process to include methodology, data collection, sampling, and analysis. Focuses on planning basic research studies and applying the findings to marketing decisions. Prerequisite: MKT 201. Lecture 3 hours per week.

MKT 230 Introduction to Fashion Design (3 cr.)
Introduces students to the field of fashion design as it relates to the garment industry. Teaches basic techniques of fashion development and reviews contributions of major fashion designers. Lecture 3 hours per week.

MKT 237 Fashion Coordination and Presentation (3 cr.)
Describes techniques of presenting fashion through shows, fashion clinics, workshops, and written and oral fashion reports. Discusses the planning, directing, and producing of a professional fashion show. Lecture 3 hours per week.

MKT 238 Fashion Merchandising (3 cr.)
Compares the major considerations involved in the buying and merchandising of fashion products. Emphasizes the dynamics of fashion and consumer buying patterns and sources of buying information. Discusses fashion buying and inventory control in the merchandising cycle plus techniques used to develop fashion buying plans, model stocks, unit control, and inventory systems. Stresses selection policy and pricing for profit. Lecture 3 hours per week.

MKT 239 Market Week Selection and Buying (3 cr.)
Provides instruction through active participation in an apparel trade market. Focuses on merchandise buying directly from manufacturers. Includes merchandise selection, terms negotiation, and arrangements for transporting merchandise, followed by storekeeping, inventory management, pricing, and promotion of purchased materials. Prerequisite: MKT 227 or MKT 238. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

MKT 260 Customer Service Management (3 cr.)
Examines the role of customer service in achieving a firm's long-term goals; discusses the basic principles of effective customer service and explores the tasks and responsibilities of a customer service manager. Includes such topics as purpose of customer service; establishment of customer service goals and policies; recruitment, selection and training of customer service employees; motivation techniques; empowering employees for better decision making; and evaluation of customer service employees and program. Lecture 3 hours per week.

MKT 270 Marketing Management (3 cr.)
Expands knowledge of marketing through case studies. Focuses on how marketing strategies are planned and utilized in the market place to accomplish the goals of the organization. Prerequisite: MKT 201. Lecture 3 hours per week.

MKT 271 Consumer Behavior (3 cr.)
Examines the various influences affecting consumer buying behavior before, during, and after product purchases. Describes personal, societal, cultural, environmental, group, and economic determinants on consumer buying. 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 281 Principles of Internet Marketing (3 cr.)
Introduces students to the Internet, Internet marketing, and the World Wide Web. Discusses how to implement marketing programs strategically and tactically using online communications tools. Teaches e-marketing strategies; the conduct of competitive, demographic, and psychographic research; the assessment and management of organizational communication; how news cycles on the Internet differ from traditional media; and how the Internet affects how we live, consume, and work. Lecture 3 hours per week.

MKT 282 Principles of eCommerce (3 cr.)
Studies the culture and demographics of the Internet, on-line business strategies, and the hardware and software tools necessary for Internet commerce. Includes the identification of appropriate target segments, the development of product opportunities, pricing structures, distribution channels over the Internet, and the

execution of marketing strategy in computer-mediated environments. Presents case histories of successful Web applications. Lecture 3 hours per week.

MKT 283 Social, Ethical, and Legal Issues in eCommerce (3 cr.)
Examines the social, ethical, and legal issues of electronic commerce. Teaches the factors that influence ethical and unethical marketing practices in eCommerce and the importance of ethical, legal, and socially responsible consumer behavior. Lecture 3 hours per week.

MKT 285 Current Issues in Marketing (3 cr.)
Serves as a capstone course for marketing majors. Provides an integrated perspective of current issues and practices in marketing. Explores contemporary issues and practices in a highly participatory classroom environment. Lecture 3 hours per week.

MKT 295 Topics in Marketing: Introduction to Integrated Marketing Communications (3 cr.)
Covers the steps required to develop an integrated marketing communications campaign. Introduces message and touchpoint integration with special attention to effectiveness and measurable results. Includes advertising, public relations, sales promotion, personal selling and direct marketing. Places special emphasis on the role of new technologies and interactive media. Prerequisite: MKT 201. Lecture 3 hours per week.

MKT 295 Topics in Marketing: Market Week Selection and Buying II (3 cr.)
Provides instruction through active participation in an apparel trade market. Focuses on merchandise buying directly from manufacturers. Includes merchandise selection, terms negotiation, and arrangements for transporting merchandise, followed by storekeeping, inventory management, pricing and promotion of purchased materials. Prerequisite: MKT 227 or MKT 238. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

MKT 298 Seminar and Project in Marketing (3 cr.)
Familiarizes the student with many career opportunities in the field through classroom instruction and field exercises. Lecture 3 hours per week.

MTH - MATHEMATICS

MTH 2 Arithmetic (4 cr.)
Covers arithmetic principles and computations including whole numbers, fractions, decimals, percents, measurement, graph interpretation, geometric forms, applications, and some pre-algebra topics. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisite: Level 1 on the Compass Placement Test. Lecture 4 hours per week.

MTH 3 Algebra I (5 cr.)
Covers the topics of Algebra I, including real numbers, equations and inequalities, exponents, polynomials, Cartesian coordinate system, rational expressions, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisites: a placement recommendation for MTH 3 and Arithmetic or equivalent. Lecture 5 hours per week.

MTH 4 Algebra II (5 cr.)
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. Prerequisites: a placement recommendation for MTH 4 and Algebra I or equivalent. Lecture 5 hours per week.

MTH 5 Algebra Revisited (5 cr.)
Reviews topics in Algebra II necessary for entry into occupational/technical or transfer mathematics courses. Credits not applicable toward graduation. Prerequisites: a placement recommendation for MTH 5 and Algebra I and Algebra II or equivalent. Lecture 5 hours per week.

MTH 50 Mathematics for Teacher Entrance Exams (1-2 cr.)
Provides participants with review and practice for the mathematics portion of the licensure examination required of all beginning teachers in Virginia. Test-taking strategies are emphasized throughout. Prerequisite: MTH 2 or equivalent. Lecture 1-2 hours per week.

MTH 103 Applied Technical Mathematics I (3 cr.)
Presents a review of arithmetic and elements of algebra. (Geometry and trigonometry are covered in MTH 104). Directs applications to specialty areas. Prerequisites: a placement recommendation for MTH 103 and one unit of high school mathematics or equivalent. Lecture 3 hours per week.

MTH 115 Technical Mathematics I (3 cr.)
Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Prerequisites for MTH 115: a placement recommendation for MTH 115 and Algebra I, Geometry, and Algebra II, or equivalent. Lecture 3 hours per week.

MTH 116 Technical Mathematics II (3 cr.)
Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Prerequisite: MTH 115. Lecture 3 hours per week.

MTH 120 Introduction to Mathematics (3 cr.)
Introduces number systems, logic, basic algebra, and descriptive statistics. Prerequisites: a placement recommendation for MTH 120 and MTH 2 or equivalent. (Intended for occupational/technical programs.) Lecture 3 hours per week.

MTH 121 Fundamentals of Mathematics I (3 cr.)
Covers concepts of numbers, fundamental operations with numbers, formulas and equations, measurement, and geometry, graphical analysis, binary numbers, Boolean and matrix algebra, linear programming, and elementary concepts of statistics. Emphasizes mathematical problem solving, use of technology, and the language of mathematics. Prerequisites: a placement recommendation for MTH 121 and one unit of high school mathematics or equivalent. (Intended for occupational/technical programs.) Lecture 3 hours per week.

MTH 126 Mathematics for Allied Health (3 cr.)
Presents scientific notation, precision and accuracy, decimals and percents, ratio and proportion, variation, simple equations, techniques of graphing, use of charts and tables, logarithms, and the metric system. Prerequisites: a placement recommendation for MTH 126 and one unit of high school mathematics or equivalent. Lecture 3 hours per week.

MTH 146 Introduction to Elementary Statistics (3 cr.)
Introduces the methods of statistics including sampling from normally distributed populations, estimation, regression, testing of hypotheses, point and interval estimation methods. Prerequisites: a placement recommendation for MTH 146 and Algebra I or equivalent. Lecture 3 hours per week.

MTH 150 Topics in Geometry (3 cr.)
Presents the fundamentals of plane and solid geometry and introduces non-Euclidean geometries and current topics. Prerequisite: Level 4 on the Compass Placement Test, and Algebra I, Algebra II, and Geometry, or equivalent. Lecture 3 hours per week.

MTH 151 Mathematics for the Liberal Arts I (3 cr.)
Presents topics in sets, logic, numeration systems, geometric systems, and elementary computer concepts. Prerequisites: a placement recommendation for MTH 151 and Algebra I, Algebra II, and Geometry or equivalent. Lecture 3 hours per week.

MTH 152 Mathematics for the Liberal Arts II (3 cr.)
Presents topics in functions, combinatorics, probability, statistics and algebraic systems. Prerequisites: a placement recommendation for MTH 152 and Algebra I, Algebra II and Geometry or equivalent. Lecture 3 hours per week.

MTH 163 Precalculus I (3 cr.)
Prepares students for applied calculus or elementary discrete mathematics. Presents college algebra, matrices, and algebraic, exponential, and logarithmic functions. Prerequisites: a placement recommendation for MTH 163 and Algebra I, Algebra II, and Geometry or equivalent. (Credit will not be awarded for more than one of the following: MTH 163, or MTH 166.) Lecture 3 hours per week.

MTH 166 Precalculus with Trigonometry (5 cr.)
Presents college algebra, analytic geometry, trigonometry, and algebraic, exponential, and logarithmic functions. Prerequisites: a placement recommendation for MTH 166 and Algebra I, Algebra II and Geometry, or equivalent. (Credit will not be awarded for more than one of the following: MTH 163, or MTH 166.) Lecture 5 hours per week.

MTH 170 Foundations in Contemporary Mathematics (3 cr.)
Covers topics in the mathematics of social choice, management sciences, statistics, and growth. Uses physical demonstrations and modeling techniques to teach the power and utility of mathematics. Prerequisites: a placement recommendation for MTH 170 and Algebra I-II, and Geometry, or equivalent. Lecture 3 hours per week.

MTH 173 Calculus with Analytic Geometry I (5 cr.)
Presents analytic geometry and the calculus of algebraic and transcendental functions including the study of limits, derivatives, differentials, and introduction to integration along with their applications. Designed for mathematical, physical, and engineering science programs. Prerequisites: a placement recommendation for MTH 173 and four units of high school mathematics, including Algebra I, Algebra II, Geometry, and Trigonometry or equivalent. (Credit will not be awarded for more than one of MTH 173, MTH 175, or MTH 273.) Lecture 5 hours per week.

MTH 174 Calculus with Analytic Geometry II (5 cr.)
Continues the study of analytic geometry and the calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with applications. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 173 or equivalent. Lecture 5 hours per week.

MTH 240 Statistics (3 cr.)
Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, and correlation and regression. Prerequisite: MTH 163 or MTH 166 or equivalent. (Credit will not be awarded for both MTH 240 and MTH 241.) Lecture 3 hours per week.

MTH 270 Applied Calculus (3 cr.)
Introduces limits, continuity, differentiation and integration of algebraic and transcendental functions, techniques of integration, and partial differentiation. Prerequisite: MTH 163 or MTH 166 or equivalent. (Credit will not be awarded for both MTH 270 and MTH 271.) Lecture 3 hours per week.

MTH 277 Vector Calculus (4 cr.)
Presents vector valued functions, partial derivatives, multiple integrals, and topics from the calculus of vectors. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture 4 hours per week.

MTH 279 Ordinary Differential Equations (4 cr.)
Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with application. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture 4 hours per week.

MTH 285 Linear Algebra (3 cr.)
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. Prerequisite: MTH 174 or equivalent. Lecture 3 hours per week.

MTH 287 Mathematical Structures (3 cr.)
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. Prerequisite: MTH 166 or equivalent. Lecture 3 hours per week.

MUS - MUSIC

MUS 111 Music Theory I (4 cr.)
Discusses elements of musical construction of scales, intervals, triads, and chord progressions. Develops ability to sing at sight and write from dictation. Introduces the analysis of the Bach chorale style. Expands facility with harmonic dictation and enables the student to use these techniques at the keyboard. Part I of II. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 112 Music Theory II (4 cr.)
Discusses elements of musical construction of scales, intervals, triads, and chord progressions. Develops ability to sing at sight and write from dictation. Introduces the analysis of the Bach chorale style. Expands facility with harmonic dictation and enables the student to use these techniques at the keyboard. Part II of II. Prerequisite: MUS 111. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 121 Music Appreciation I (3 cr.)
Increases the variety and depth of the student's interest, knowledge, and involvement in music and related cultural activities. Acquaints the student with traditional and twentieth century music literature, emphasizing the relationship music has as an art form with man and society. Increases the student's awareness of the composers and performers of all eras through listening and concert experiences. Lecture 3 hours per week.

MUS 136 Applied Music - Voice[1] (2 cr.)
Teaches singing, proper breath control, diction, and development of tone. Studies the standard vocal repertoire. May be repeated for a total of 3 hours for the major and 4 hours for the minor. Prerequisite: school approval. 1 hour lesson per week, 8 hours practice (laboratory) required.

MUS 137 Chorus Ensemble (1 cr.)
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. School approval required. May be repeated for credit. Laboratory 3 hours per week.

MUS 141 Class Piano I (2 cr.)
Offers the beginning piano student activities in learning musical notation, in accomplishing sight reading skills, and in mastering techniques of keyboard playing. Presents appropriate literature. Open to all students and may be used to fulfill applied minor instrument requirement for music major. Part I of II. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 142 Class Piano II (2 cr.)
Offers the beginning piano student activities in learning musical notation, in accomplishing sight reading skills, and in mastering techniques of keyboard playing. Presents appropriate literature. Open to all students and may be used to fulfill applied minor instrument requirement for music major. Part II of II. Prerequisite: MUS 141 or equivalent. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 145 Applied Music - Keyboard[1] (2 cr.)
Teaches piano, organ, harpsichord, or synthesizer. Studies the standard repertoire. Prerequisite: school approval. May be repeated a total of 8 hours for the major and 4 hours for the minor. One hour lesson per week, 8 hours practice (laboratory) required.

MUS 149 Band Ensemble (1 cr.)
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. School approval required. May be repeated for credit. Laboratory 3 hours per week.

MUS 155 Applied Music - Woodwinds[1] (2 cr.)
Teaches fundamentals of the woodwind instruments. Studies the standard repertoire. Prerequisite: school permission. May be repeated a total of 8 hours for the major and 4 hours for the minor. One hour lesson per week, 8 hours practice (laboratory) required.

MUS 165 Applied Music - Strings[1] (Guitar) (2 cr.)
Teaches fundamentals of string instruments, harp, or guitar. Studies the standard repertoire. Prerequisite: school approval. May be repeated a total of 8 hours for the major and 4 hours for the minor. One hour lesson per week, 8 hours practice (laboratory) required.

MUS 175 Applied Music - Brass[1] (2 cr.)
Teaches fundamentals of brass instruments. Studies the standard repertoire. Prerequisite: school approval. May be repeated a total of 8 hours for the major and 4 hours for the minor. One hour lesson per week, 8 hours practice (laboratory) required.

MUS 185 Applied Music - Percussion[1] (2 cr.)
Teaches fundamentals of percussion instruments. Studies the standard repertoire. Prerequisite: school permission. May be repeated for a total of 8 hours for the major and 4 hours for the minor. 1 hour lesson per week, 8 hours practice (laboratory) required per week.

MUS 195 Topics in Music: World Music Styles (3 cr.)
Provides studies leading to knowledge of world music styles and cultural enrichment. Includes research, writing, and listening assignments, as well as traditional classroom lecture. Lecture 3 hours per week.

MUS 211 Advanced Music Theory I (4 cr.)
Increases facility in the analysis and usage of diatonic and chromatic harmonies. Continues harmonic analysis of Bach style. Includes exercises in sight-singing, ear -training, and keyboard harmony. Part I of II. Prerequisite: MUS 111-112 or equivalent. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 212 Advanced Music Theory II (4 cr.)
Increases facility in the analysis and usage of diatonic and chromatic harmonies. Continues harmonic analysis of Bach style. Includes exercises in sight-singing, ear -training, and keyboard harmony. Part II of II. Prerequisite: MUS 212 or equivalent. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 241 Advanced Class Piano II (2 cr.)
Teaches advanced applications of keyboard fundamentals and technical skills. Includes exercises in intervals, triads, all major and minor scales, and simple and compound meters. Uses advanced repertoire. Part I of II. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 242 Advanced Class Piano II (2 cr.)
Teaches advanced applications of keyboard fundamentals and technical skills. Includes exercises in intervals, triads, all major and minor scales, and simple and compound meters. Uses advanced repertoire. Part II of II. Prerequisite: MUS 241 or equivalent. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Note: [1] Applied Music - private lessons are available for 2 hours of credit per semester. The length of the lessons will be 1 hour for 2 hours credit per semester. All courses in applied music may be reported for a total of 8 hours for the major and 4 hours for the minor. Laboratory is 2 hours per week.

NAS - NATURAL SCIENCE

NAS 101 Natural Sciences I (4 cr.)
Presents a multidisciplinary perspective integrating the main fields of science. Emphasizes the interaction of the scientific disciplines. (Primarily for non-science majors.) Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week.

NAS 105 Natural Science Topics for Modern Society (2 cr.)
Emphasizes method of the scientific disciplines as applied to selected topics pertinent to modern society. Lecture 2 hours per week.

NAS 150 Human Biology (3 cr.)
Surveys the structure and function of the human body. Applies principally to students who are not majoring in the health or science fields. Lecture 3 hours per week.

NAS 161 Health Science I (4 cr.)
Presents an integrated approach to human anatomy and physiology, microbiology, and pathology. Includes chemistry and physics as related to health sciences. Prerequisite: CHM 1 and BIO 1 or equivalent or permission of the student's curricular program head. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week.

NAS 162 Health Science II (4 cr.)
Presents an integrated approach to human anatomy and physiology, microbiology, and pathology. Includes chemistry and physics as related to health sciences. Prerequisite: NAS 161. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week.

NUR - NURSING

NUR 27 Nurse Aide (5 cr.)
Teaches care of older patients with emphasis on their social, emotional, and spiritual needs. Covers procedures; communication and interpersonal relations; observations, charting, and reporting; safety and infection control; anatomy and physiology; personal care, nutrition, and patient feedings; death and dying. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

NUR 108 Nursing Principles and Concepts I (5 cr.)
Introduces principles of nursing, health and wellness concepts, and the nursing process. Identifies nursing strategies to meet the multidimensional needs of individuals. Includes math computational skills, basic computer instruction related to the delivery of nursing care, introduction to the profession of nursing, nursing process, documentation; basic needs related to integumentary system, teaching/ learning, stress, psychosocial, safety, nourishment, elimination, oxygenation, circulation, rest, comfort, sensory, fluid and electrolyte and mobility needs in adult clients. Also includes care of the pre/post operative client. Provides supervised learning experience in college nursing laboratories and/or cooperating agencies. Prerequisite: NUR 111. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

NUR 109 Nursing Principles and Concepts II (6 cr.)
Focuses on nursing care of individuals and/or families experiencing alterations in health. Includes math computational skills, basic computer instruction related to the delivery of nursing care; immunological, gastrointestinal, musculoskeletal, oncological and diabetic disorders and pre/post operative care in adult and pediat-

ric clients. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Prerequisites: NUR 111, 108, 137, and 245. Lecture 3 hours. Laboratory 9 hours. Total 12 hours per week.

NUR 111 Nursing I (7 cr.)

Introduces nursing principles including concepts of health and wellness and the nursing process. Develops nursing skills to meet the biopsychosocial needs of individuals across the lifespan. Includes math computational skills, basic computer instruction related to the delivery of nursing care, communication skills, introduction to nursing, health, the health care system, legal aspects of nursing care, diagnostic testing, assessment, teaching and learning, asepsis, body mechanics and safety, personal care, activity/rest, wound care, nutrition, elimination, oxygenation, fluid and electrolytes, pain control, medication administration, aging populations, and pre/post operative care. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Prerequisite: completion of the Pre-Nursing and Allied Health Career Studies Certificate (Nursing curriculum). Co-requisite: NUR 226. Lecture 4 hours. Laboratory 9 hours. Total 13 hours per week.

NUR 115 LPN Transition (3 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 relate to local programs and service areas. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Prerequisite: LPN status and eligibility for advanced standing in nursing program admission or eligibility for program admission as a transfer student. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

NUR 135 Drug Dosage Calculations (2 cr.)

Focuses on apothecary, metric, and household conversion in medication dosage calculation for adult and pediatric clients. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates. Prerequisite: placement test recommendation for MTH 120 or satisfactory completion of MTH 2 or equivalent. Lecture 2 hours per week.

NUR 136 Principles of Pharmacology I (1 cr.)

Teaches principles of medication administration, which includes dosage calculations, major drug classifications, drug legislation, legal aspects of medication administration, drug action on specific body systems, and basic computer applications. Co-requisite: HIM 110. Lecture 1 hour per week.

NUR 137 Principles of Pharmacology II (2 cr.)

Studies the principles of medication administration, which include dosage calculations, major drug classifications, drug legislation, legal aspects of medication administration, drug action on specific body systems, and basic computer applications. Prerequisite: NUR 111. Lecture 2 hours per week.

NUR 208 Acute Medical-Surgical Nursing (6 cr.)

Focuses on the use of nursing process to provide care to individuals and families with acute medical or surgical problems or to prevent such problems. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in cooperating agencies. Prerequisites: NUR 111, 108, 109, 137, 245, 247, and 254. Lecture 3 hours. Laboratory 9 hours. Total 12 hours per week.

NUR 226 Health Assessment (3 cr.)

Teaches the systematic approach to obtaining a health history and performing a physical assessment. Co-requisite: NUR 111. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

NUR 245 Maternal/Newborn Nursing (4 cr.)

Develops nursing skills in caring for families in the antepartum, intrapartum, and post-partum periods. Prerequisites: NUR 111 and 226. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 246 Parent/Child Nursing (4 cr.)

Develops nursing skills in caring for both well and ill children in a variety of settings. Emphasizes theories of growth and development and the family as a unit. Prerequisites: NUR 111, 108, 109, 137, 245, 247, and 254. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 247 Psychiatric/Mental Health Nursing (4 cr.)

Develops nursing skills in caring for individuals, families, and/or groups with mental health needs. Explores various treatment models, diagnostic categories, and rehabilitative measures. Prerequisites: NUR 111,108, 137, and 245. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 254 Dimensions of Professional Nursing (1 cr.)

Explores the role of the professional nurse. Emphasizes nursing organizations, legal and ethical implications, and addresses trends in management and organizational skills. Explores group dynamics, relationships, conflicts, and leadership styles. Prerequisites: NUR 111, 108, 137, and 254. Lecture 1 hour per week.

NUR 298 Seminar and Project (1 cr.)

Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. Prerequisites: NUR 111, 108, 109, 137, 245, 247, and 254. Lecture 1 hour per week.

OPT - OPTICIANRY

OPT 105 Anatomy, Physiology, and Pathology of the Eye (3 cr.)

Considers the fundamentals of various body systems and principles of human physiology; methods of drug delivery, including the advantages and disadvantages of drops, ointments, and sustained release systems; systemic use of medications; basic characteristics of common external and internal diseases of the eye; and ocular emergencies. Lecture 3 hours per week.

OPT 121 Optical Theory I (3 cr.)

Introduces theory and application of ophthalmic lenses. Presents history, basic manufacturing and quality standards of ophthalmic lenses, propagation of light, refraction and dioptic measurements, true power, surface power, nominal lens formula. Explains lens makers' equation, boxing system, spherical lens design, fundamental aspects of cylindrical lenses, sphero-cylinder lens design, and flat and toric transposition. Lecture 3 hours per week.

OPT 122 Optical Theory II (3 cr.)

Explores the development of multifocal lenses, application of multifocal lenses, survey of current ophthalmic lens, the properties of spherocylinder lenses, and an in-depth analysis of the optics of ophthalmic prisms. Prerequisite: OPT 121 or equivalent. Lecture 3 hours per week.

OPT 150 Optical Laboratory Theory I (3 cr.)

Introduces the student to the terminology, instruments, lens, frames, and materials used in the surfacing and finishing of optical prescription eyewear. Presents personal and environmental safety issues. Co-requisite: OPT 152. Lecture 3 hours per week.

OPT 151 Optical Laboratory Theory II (3 cr.)

Covers making eyeglasses with advanced prescriptions and frames. Includes verification and neutralization techniques for single vision lens and bifocals, frame repair, accomplishing prescribed prism by decentration, verification and neutralization, semi-rimless glasses, and multifocal glasses. Prerequisites: OPT 150 and OPT 152 or equivalent. Co-requisite: OPT 153. Lecture 3 hours per week.

OPT 152 Optical Laboratory Clinical I (3 cr.)

Provides the clinical component of OPT 150. Provides students the opportunity to learn clinical skills in fundamental optical laboratory tasks at the entry level under

the direction and supervision of a preceptor. Emphasizes accuracy and attaining skills that meet acceptable professional standards. Co-requisite: OPT 150. Laboratory 6 hours per week

OPT 153 Optical Laboratory Clinical II (3 cr.)
Provides the clinical component of OPT 151. Presents students with an opportunity to learn clinical skills for optical laboratory tasks at the advanced level under the direction and supervision of a preceptor. Emphasizes accuracy and the attainment of skills that meet acceptable professional standards. Prerequisites: OPT 150 and OPT 152 or equivalent. Co-requisite: OPT 151. Laboratory 6 hours per week.

OPT 154 Optical Business Management (3 cr.)
Covers basic management and leadership skills necessary for a successful eye care office. Teaches the analysis, creative thinking, judgment, planning strategy, and implementation skills necessary for today's optical business challenges. Lecture 3 hours per week.

OPT 160 Optical Dispensing Theory I (3 cr.)
Introduces the student to the skills necessary for becoming a dispensing optician. Includes the history of the profession, patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Prerequisite: OPT 121 or equivalent. Co-requisite: OPT 165. Lecture 3 hours per week.

OPT 165 Optical Dispensing Clinical I (2 cr.)
Provides the student with an opportunity to develop the skills necessary for becoming a dispensing optician. Covers patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Serves as the clinical component of OPT 160. Prerequisite: OPT 121 or equivalent. Co-requisite: OPT 160. Laboratory 4 hours per week.

OPT 253 Current Optical Trends (2 cr.)
Presents current trends in the optical profession. Examines the impact of new materials, new health care issues, and medical advances as they relate to the visual needs and wants of society. Prerequisite: OPT 260 and OPT 271 or equivalent. Lecture 2 hours per week.

OPT 260 Optical Dispensing Theory II (3 cr.)
Focuses on the development and refinement of the skills necessary for students to become a licensed dispensing optician, including patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Prerequisites: OPT 160 and OPT 165 or equivalent. Co-requisite: OPT 271. Lecture 3 hours per week.

OPT 271 Optical Dispensing Clinical II (3 cr.)
Focuses on the development and refinement of the skills necessary for students to become a licensed dispensing optician, including patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Serves as the clinical component of OPT 260. Prerequisites: OPT 160 and OPT 165 or equivalent. Co-requisite: OPT 260. Laboratory 12 hours per week.

OPT 272 Optical Dispensing Clinical III (3 cr.)
Focuses on the development and refinement of the skills necessary for students to become a licensed dispensing optician, including patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Prerequisites: OPT 271. Laboratory 12 hours per week.

OPT 273 Contact Lens Theory I (3cr.)
Introduces basic concepts and techniques of contact lens fitting, contact lens design, contact lens materials, and contact lens nomenclature. Covers contact lens insertion and removal techniques, and basic slit lamp and keratometry skills. Prerequisites: NAS 176 or OPT 105 or equivalent. Lecture 3 hours per week.

OPT 274 Contact Lens Theory II (3 cr.)
Explores soft spherical and gas permeable contact lens fitting philosophies, tolerances, and designs. Develops the student's patient evaluation skills, patient training skills, and skills for evaluating the fit and verification of contact lenses. Prerequisite: OPT 273 or equivalent. Lecture 3 hours per week.

OPT 280 Contact Lens Clinical (3 cr.)
Promotes the development of clinical skills in fundamental contact lens tasks at the entry level under the direction and supervision of a preceptor. Emphasizes professional standards. Prerequisite: OPT 274 or equivalent. Laboratory 6 hours per week.

PED - PHYSICAL EDUCATION

PED 103 Aerobic Fitness (2 cr.)
Develops cardiovascular fitness through activities designed to elevate and sustain heart rates appropriate to age and physical condition. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 109 Yoga (2 cr.)
Focuses on the forms of yoga training emphasizing flexibility. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 111 Weight Training I (2 cr.)
Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Part I of II. Lecture 1 hour. Laboratory 2 hours. Total 3 hour per week.

PED 112 Weight Training II (2 cr.)
Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Part II of II. Lecture 1 hour. Laboratory 2 hours. Total 3 hour per week.

PED 123 Tennis I (2 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 2 hours. Total 3 hours per week.

PED 133 Golf I (1 cr.)
Teaches basic skills of golf, rules, etiquette, scoring, terminology, equipment selection and use, and strategy. Laboratory 2 hours per week.

PED 137 Martial Arts I (1 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. Part I of II. Laboratory 2 hours per week.

PED 138 Martial Arts II (1 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. Part II of II. Laboratory 2 hours per week.

PED 141 Swimming I (1 cr.)
Introduces skills and methods of swimming strokes. Focuses on safety and physical conditioning. Laboratory 2 hours per week.

PED 144 Skin and Scuba Diving (2 cr.)
Emphasizes skills and methods of skin and scuba diving. Includes training with underwater breathing apparatus and focuses on safety procedures, selection and use of equipment. Prerequisite: strong swimming skills. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 150 Soccer I (2 cr.)
Emphasizes soccer skills and techniques, strategies, rules, equipment, flexibility, and physical conditioning. Uses field demonstration, drills, practice time, and some scrimmaging to help students learn and improve soccer skills and knowledge. Also includes classroom time to cover topics such as rules, strategy, video demonstration of skills, and soccer history (video of great players and epic matches). Class assignments will consist primarily of weekly journal entries dealing with specific health and fitness self-improvement goals and strategies. Such assignments will count significantly toward the final grade. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 152 Basketball (2 cr.)
Introduces basketball skills, techniques, rules, strategies, equipment selection, flexibility, and physical conditioning. Provides significant opportunity for on-court demonstration, drills, and practice time. Includes scrimmaging, but focuses primarily on learning and improving basketball skills and knowledge. Includes classroom time to address topics such as rules, strategy, video demonstration of skills, and basketball history (video of great players and epic games). Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 189 Saltwater Fishing (1 cr.)
Teaches saltwater fishing techniques including casting and trolling, rig making, live bait catching, and use of artificial and live bait. Presents selection and care of equipment, fish habits, conservation, and safety. Lecture 1 hour per week.

PED 195 Topics in Physical Education: Fly Fishing (1 cr.)
Teaches fly fishing techniques on the beginning/intermediate level. Includes casting, equipment selection and care, fly presentation, fish habits and conservation. Lecture 1 hour per week.

PHI - PHILOSOPHY

PHI 101 Introduction to Philosophy I (3 cr.)
Introduces a broad spectrum of philosophical problems and perspectives with an emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality, and values. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

PHI 220 Ethics (3 cr.)
Provides a systematic study of representative ethical systems. Lecture 3 hours per week. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

PHI 225 Selected Problems in Applied Ethics (3 cr.)
Analyzes and discusses significant contemporary ethical issues and problems existing throughout the various professions such as business, medicine, law, education, journalism, and public affairs. May be repeated for credit. Lecture 3 hours per week. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

PHT - PHOTOGRAPHY

PHT 164 Introduction to Digital Photography (3 cr.)
Teaches the fundamentals of photography including camera function, and image production as they apply to digital imagery. Shooting assignments develop technical and visual skills with the camera, including composition and the use of light. Basic skills required for making black and white and color inkjet prints are taught in a digital lab using Adobe Photoshop. Prerequisites: Students taking this course should be comfortable working at a computer, be familiar with negotiating program menus, and know how files are saved and stored. A camera with manually adjustable aperture and shutter is required. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHT 264 Digital Photography II (3 cr.)
Teaches theory and practice of digital photography, including the Adobe Photoshop techniques needed for top quality inkjet prints. Emphasizes use of digital cameras in studio and on location. Teaches advanced techniques of image editing, including photo restoration and multi-image compositing. Students work with existing images, including family snapshots and antique photographs as well as photographs shot specifically for the course. In addition to prescribed assignments a personal project allows for exploration of creative ideas and topics of the student's choice. Provides training in digital image transmission from remote locations. Prerequisites: Students taking this course should feel comfortable working at a computer, be familiar with negotiating program menus, and know how files are saved and stored. A camera with manually adjustable aperture and shutter is required. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHY - PHYSICS

PHY 201 General College Physics I (4 cr.) Teaches fundamental principles of physics on an algebra/geometry/trig math level. Covers mechanics, fluids, and thermodynamics. Students should consult the requirements of their individual program and transfer school to determine the correct course and the transferability of course to senior institution. Prerequisite: MTH 163 or MTH 166 or MTH 115 and 116 or the equivalent of college algebra with some geometry and trigonometry. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PHY 202 General College Physics II (4 cr.)
Teaches fundamental principles of physics on an algebra/geometry/trig math level. Covers wave phenomena, optics, electricity and magnetism, an introduction to relativity, nuclear physics, and selected topics in modern physics. Students should consult the requirements of their individual program and transfer school to determine the correct course and the transferability of course to senior institution. Prerequisite: PHY 201. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PHY 241 University Physics I (4 cr.)
Teaches principles of classical and modern physics on calculus math level. Covers mechanics and heat. Students should consult the requirements of their individual program and transfer school to determine the correct course and the transferability of course to senior institution. Prerequisite: MTH 173 or school approval. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PHY 242 University Physics II (4 cr.)
Teaches principles of classical and modern physics on calculus math level. Covers wave phenomena, optics, electricity and magnetism, an introduction to relativity, and nuclear physics. Students should consult the requirements of their individual program and transfer school to determine the correct course and the transferability of course to senior institution. Prerequisites: PHY 241 and MTH 174 or school approval. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PLS - POLITICAL SCIENCE

PLS 135 American National Politics (3 cr.)
Teaches political institutions and processes of the national government of the United States. Focuses on the Congress, presidency, the courts, and their interrelationships. Gives attention to public opinion, suffrage, elections, political parties, interest groups, civil rights, domestic policy, and foreign relations. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Lecture 3 hours per week.

PLS 211 United States Government I (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. Part I of II. Political Science 211 and 212 need not be taken in sequence. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

PLS 212 United States Government II (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. Part II of II. Political Science 211 and 212 need not be taken in sequence. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

PNE - PRACTICAL NURSING

PNE 116 Normal Nutrition (1cr.)
Introduces the basic principles of good nutrition. Studies nutrients, their sources and functions, and basic requirements for individuals. Includes a brief introduction to diet therapy. Lecture 1 hour per week.

PNE 141 Nursing Skills I (3 cr.)
Studies principles and procedures essential to the basic nursing care of patients. Includes all content as outlined by the Board of Nursing as necessary for a Nurse Aide Program. Includes both campus and clinical lab hours in a geriatric setting. Prerequisites: ENG 111 and NAS 150 or NAS 161-162. Co-requisite: SDV 100. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PNE 142 Nursing Skills II (3 cr.)
Studies principles and procedures essential to the basic nursing care of patients. Continues fundamental nursing knowledge and skills begun in PNE 141. Prerequisite: PNE 141. Co-requisite: PNE 173. Lecture 1 hour. Laboratory 6 hours. Total 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. Assists students in preparation for employment. Prerequisites: PNE 141, 142, and 173. Lecture 1 hour per week.

PNE 162 Nursing in Health Changes II (10 cr.)
Focuses on nursing situations and procedures necessary to assist individuals in meeting special needs related to human functions. Focuses on the care of adult medical-surgical patient. Provides supervised learning experiences in the college nursing laboratories and/or cooperating agencies. Prerequisites: PNE 141, 142, 173, and 116. Lecture 5 hours. Laboratory 15 hours. Total 20 hours per week.

PNE 163 Nursing in Health Changes III (8 cr.)
Continues the focus on nursing situations and procedures necessary to assist individuals in meeting special needs related to human functions. Focuses on the care of psychiatric, pediatric, maternity, and medical-surgical patients. Prerequisites: PNE 141, 142, 173, and 116. Lecture 4 hours. Laboratory 12 hours. Total 16 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 administration. Emphasizes major drug classes and specific agents within each class. Co-requisites: PNE 141 and PNE 142. Lecture 2 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. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Lecture 3 hours per week.

PSY 165 Psychology of Human Sexuality (3 cr.)
Focuses on scientific investigation of human sexuality and psychological and social implications of such research. Considers socio-cultural influences, the physiology and psychology of sexual response patterns, sexual dysfunctions, and development of relationships. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Lecture 3 hours per week.

PSY 201 Introduction to Psychology I (3 cr.)
Examines human and animal behavior, relating experimental studies to practical problems. Includes topics such as sensation/perception, learning, memory, motivation, emotion, stress, development, intelligence, personality, psychopathology, therapy, and social psychology. Part I of II. PSY 201 and 202 need not be taken in sequence. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

PSY 202 Introduction to Psychology II (3 cr.)
Examines human and animal behavior, relating experimental studies to practical problems. Includes topics such as sensation/perception, learning, memory, motivation, emotion, stress, development, intelligence, personality, psychopathology, therapy, and social psychology. Part II of II. PSY 201 and 202 need not be taken in sequence. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

PSY 205 Personal Conflict and Crisis Management (3 cr.)
Studies the effective recognition and handling of personal and interpersonal conflicts. Discusses cooperative roles of public and private agencies, management of family disturbances, child abuse, rape, suicide, and related cases. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 107 if recommended by reading placement test. 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. Prerequisite: PSY 201, PSY 202, or PSY 230. Lecture 3 hours per week.

PSY 230 Developmental Psychology (3 cr.)
Studies the development of the individual from conception to death. Follows a lifespan perspective on the developmental tasks of the person's physical, cognitive, and psycho-social growth. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and or ENG 107 if recommended by reading placement test. 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. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-

requisite: ENG 5 and or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

REA - REAL ESTATE

REA 100 Principles of Real Estate (4 cr.)
Examines practical applications of real estate principles. Includes a study of titles, estates, land descriptions, contracts, legal instruments and concepts, real estate mathematics, financing, agency, appraisal, fair housing, and management of real estate. Lecture 4 hours per week.

REA 215 Real Estate Brokerage (3 cr.)
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 (4 cr.)
Explores fundamentals of real estate valuation. Introduces the Uniform Standards of Professional Appraisal Practice and the Uniform Residential Appraisal Report formulations, working problems and reviewing actual appraisals. Includes the opportunities available in the appraisal field. Lecture 4 hours per week.

REA 217 Real Estate Finance (3 cr.)
Presents principles and practices of financing real estate. Analyzes various types of 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 218 Appraising the Single Family Residence (2 cr.)
Promotes an understanding and working knowledge of procedures and techniques used to estimate market value of vacant residential land and improved single family residential properties. Emphasizes the proper application of valuation methods and techniques to residential properties and extraction of data from the market for use in sales comparison, cost, and income capitalization approaches to value. Lecture 2 hours per week.

REA 219 Real Estate Appraisal Methods (3 cr.)
Details practical applications of sales comparison, cost, and income capitalization approaches and helps develop valuation skills. Reinforces principles of real estate appraisal and explores methods for extracting market data to estimate value and test conclusions. Prerequisite: REA 216. Lecture 3 hours per week.

REA 220 Income Property Valuation (3 cr.)
Familiarizes the student with the techniques that are utilized to perform the appraisal of more complex income-producing properties. Focuses on income and expense forecasting, appropriate techniques for determining capitalization rates, and discounted cash flow method. Includes valuation of complex commercial properties such as apartment complexes, office buildings, shopping centers, industrial properties, hotels, and mixed-use complexes. Prerequisite: REA 216 or equivalent. Lecture 3 hours per week.

REA 225 Real Property Management (3 cr.)
Introduces the field of property management. Focuses on the principles of tenant selection and retention, financial management, and building maintenance. Lecture 3 hours per week.

REA 238 Professional Appraisal Standards (1 cr.)
Examines the provisions and standard rules that govern professional appraisal practices. Covers the "Binding Requirements" and the "Specific Appraisal Guidelines" as required by the Uniform Standards of Professional Appraisal Practice. Lecture 1 hour per week.

REA 245 Real Estate Law (3 cr.)
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.

REA 246 Real Estate Economics (3 cr.)
Examines the nature and classification of land economics, the development of property, construction and subdivision, economic values and real estate evaluation, real estate cycles and business fluctuations, residential market trends, rural property, and special purpose property trends. Lecture 3 hours per week.

REA 247 Real Estate Investments (3 cr.)
Focuses on estate investments with emphasis on property selection and analysis, ownership interests, financing, and tax aspects. Lecture 3 hours per week.

REA 256 Land Planning and Use (3 cr.)
Presents land value and usage, planning, zoning regulations, building and site requirements, sanitation and utilities, highest and best use concept, population analysis, influence of market forces, and public policies. Lecture 3 hours per week.

REA 290 Coordinated Internship in Real Estate: Real Estate Broker (3 cr.)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Laboratory 15 hours per week.

REL - RELIGION

REL 231 Religions of the World I (3 cr.)
Introduces students to the religions of the world with attention to origin, history, and doctrine. Focuses on the development of systems of faith in various human cultures, with a concentration on Eastern religions. Introduces the academic study of religion, issues of faith, and specific world religions. Examines the historical evolution, the fundamental doctrines and beliefs, the practices, institutions, and cultural expressions of these religious traditions. Also deals with some of the essential differences and similarities that exist among each religious tradition, and points to the uniqueness of each of them. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

REL 232 Religions of the World II (3 cr.)
Introduces students to the religions of the world with attention to origin, history, and doctrine. Focuses on the development of systems of faith in various human cultures, with a concentration on the rise of the monotheistic faiths and the distinction between primal or “oral” religions and “historical” religions. Introduces the academic study of religion, issues of faith, and specific world religions. Examines the historical evolution, the fundamental doctrines and beliefs, the practices, institutions, and cultural expressions of these religious traditions. Also deals with some of the essential differences and similarities that exist among each religious tradition, and points to the uniqueness of each of them. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

REL 233 Introduction to Islam (3 cr.)
Studies Islam in its historical, religious, and political dimensions and assists in the understanding of its contemporary vitality and attraction as a faith, a culture and a way of life. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

REL 240 Religions in America (3 cr.)
Surveys various manifestations of religion in the American experience. Emphasizes

concepts, problems, and issues of religious pluralism and character of American religious life. Examines the role of religion in America with particular emphasis on religion in contemporary America. Includes the history, beliefs, and practices of the world's major religions in America, as well as an examination of new religious developments. Examines the relationship between American religion and American identity, the rise of civil and cultural religion, and the role of religion in public policy and American culture. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

REL 255 Selected Problems and Issues in Religion: Christianity in Film (3 cr.)

Examines selected problems and issues of current interest in religion. Investigates how the Western film industry has depicted Christianity, the Bible, and the critical themes of Christian thought. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

REL 255 Selected Problems and Issues in Religion - Women and the Bible (3 cr.)

Introduces students to the portrayal of women in the Bible. Examines, through selected Biblical texts, the role and depiction of women within this text. Studies the impact of scriptural writing on the role of women in the Western world through the lens of feminist scholars. Students are asked to think critically about the texts, the issues raised by feminist perspectives, and to analyze the impact of the Bible on women today and society as a whole. Prerequisites: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 7 if recommended by reading placement test. Lecture 3 hours per week.

RTH - RESPIRATORY THERAPY

RTH 102 Integrated Sciences for Respiratory Care (3 cr.)

Integrates the concepts of mathematics, chemistry, physics, microbiology, and computer technology as these sciences apply to the practice of respiratory care. Lecture 3 hours per week.

RTH 110 Fundamental Theory and Procedures for Respiratory Care (4 cr.)

Focuses on the development of basic respiratory care skills necessary to enter the hospital environment. Prerequisites: completion of the Pre-Respiratory Therapy Career Studies Certificate and acceptance into pre-clinical courses. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

RTH 112 Pathology of the Cardiopulmonary System (3 cr.)

Presents pathophysiology of medical and surgical diseases with emphasis upon diseases of the cardiopulmonary system. Pre-requisites: successful completion of all curriculum courses offered during the first semester of the AAS degree in Respiratory Therapy. Lecture 3 hours per week.

RTH 121 Cardiopulmonary Science I (3 cr.)

Focuses on pathophysiology, assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary and neuromuscular physiology and pathophysiology. Lecture 3 hours per week.

RTH 131 Respiratory Care Theory and Procedures I (4 cr.)

Presents theory of equipment and procedures and related concepts used for patients requiring general acute and critical cardiopulmonary care. Prerequisites: successful completion of all curriculum courses offered during the first semester of the AAS degree in Respiratory Therapy. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RTH 132 Respiratory Care Theory and Procedures II (4 cr.)

Presents theory of equipment and procedures and related concepts used for patients requiring general acute and critical cardiopulmonary care. Prerequisites: successful completion of all curriculum courses offered during the first two semesters of the AAS degree in Respiratory Therapy. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RTH 135 Diagnostic and Therapeutic Procedures I (2 cr.)

Focuses on purpose, implementation, and evaluation of equipment and procedures used in the diagnosis and therapeutic management of patients with cardiopulmonary disease. Prerequisites: completion of the Pre-Respiratory Therapy Career Studies Certificate and acceptance into pre-clinical courses. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

RTH 145 Pharmacology for Respiratory Care I (1 cr.)

Presents selection criteria for the use of, and detailed information on, pharmacologic agents used in pulmonary care. Prerequisite: acceptance into pre-clinical courses. Lecture 1 hour per week.

RTH 190 Coordinated Practice in Respiratory Therapy: NCC I-II (2 cr.) (2 cr.)

Provides supervised on-the-job training to enable students to work directly with patients to practice and refine skills learned in the previous semester's classroom and laboratory classes. Prerequisites: successful completion of all curriculum courses offered during the first semester of the AAS degree in Respiratory Therapy. Laboratory 10 hours per week.

RTH 190 Coordinated Practice in Respiratory Therapy: NCC Internship (2 cr.)

Provides first-year students an opportunity to practice all non-critical care skills in an acute care setting. The student is paired with an experienced RRT and completes 102 hours of non-critical care internship. Prerequisites: successful completion of all curriculum courses offered during the first two semesters of the AAS degree in Respiratory Therapy. Laboratory 10 hours per week.

RTH 215 Pulmonary Rehabilitation (1 cr.)

Focuses on purpose and implementation of comprehensive cardiopulmonary rehabilitation program. Prerequisites: successful completion of all curriculum courses offered during the first two semesters of the AAS degree in Respiratory Therapy. Lecture 1 hour per week.

RTH 222 Cardiopulmonary Science II (3 cr.)

Focuses on assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary, renal, and neuromuscular physiology and pathophysiology. Prerequisites: successful completion of all curriculum courses offered during the first two semesters of the AAS degree in Respiratory Therapy. Lecture 3 hours per week.

RTH 223 Cardiopulmonary Science III (2 cr.)

Continues the exploration of topics discussed in RTH 121 and RTH 222. Prerequisites: successful completion of all curriculum courses offered during the first three semesters of the AAS degree in Respiratory Therapy. Lecture 2 hours per week.

RTH 226 Theory of Neonatal and Pediatric Respiratory Care (2 cr.)

Focuses on cardiopulmonary physiology and pathology of the newborn and pediatric patient. Prerequisites: successful completion of all curriculum courses offered during the first three semesters of the AAS degree in Respiratory Therapy. Lecture 2 hours per week.

RTH 227 Integrated Respiratory Therapy Skills II (2 cr.)

Presents intensive correlation of all major respiratory therapy subject areas reflecting the entry-level and advanced practitioner matrices. Emphasizes assessment, implementation, and modification of therapy to patient response. Prerequisites:

successful completion of all curriculum courses offered during the first five semesters of the AAS degree in Respiratory Therapy. Lecture 2 hours per week.

RTH 236 Critical Care Monitoring (3 cr.)
Focuses on techniques and theory necessary for the evaluation and treatment of the critical care patient, especially arterial blood gases and hemodynamic measurements. Explores physiologic effects of advanced mechanical ventilation. Prerequisites: successful completion of all curriculum courses offered during the first four semesters of the AAS degree in Respiratory Therapy. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

RTH 265 Current Issues in Respiratory Care (2 cr.)
Explores current issues affecting the profession of respiratory care. Prerequisites: successful completion of all curriculum courses offered during the first three semesters of the AAS degree in Respiratory Therapy. Lecture 2 hours per week.

RTH 290 Coordinated Practice in Respiratory Therapy: ACC/ NPCC I-II (2 cr.)(2 cr.)
Supervises on-the-job training. Introduces the student to respiratory critical care, home care and diagnostic pulmonary functions. Students rotate through several critical care units (adult, pediatric and neonatal) and practice and become evaluated on entry-level critical care skills. Introduces students to adult and pediatric home care and helps them learn to perform diagnostic pulmonary functions. Prerequisites: successful completion of all curriculum courses offered during the first three semesters of the AAS degree in Respiratory Therapy. Laboratory 10 hours per week.

RTH 290 Coordinated Practice in Respiratory Therapy: ACC/ NPCC III (2 cr.)
Supervises on-the-job training. Further develops critical respiratory care clinical skills and critical thinking skills. Students rotate through several critical care units (adult, pediatric and neonatal) and practice and become evaluated on advanced level critical care skills. Students also develop skills in hemodynamic monitoring and polysomnography. Prerequisites: successful completion of all curriculum courses offered during the first four semesters of the AAS degree in Respiratory Therapy. Laboratory 10 hours per week.

RTH 290 Coordinated Practice in Respiratory Therapy: ACC/ NPCC IV (1 cr.)
Supervises on-the-job training. Further develops critical respiratory care clinical skills and critical thinking skills. Students rotate through several critical care units (adult, pediatric and neonatal) and practice and become evaluated on advanced level critical care skills. Students also develop skills in hemodynamic monitoring and polysomnography. Prerequisites: successful completion of all curriculum courses offered during the first four semesters of the AAS degree in Respiratory Therapy. Laboratory 5 hours per week.

RTH 290 Coordinated Practice in Respiratory Therapy: ACC/ NPCC Internship (2 cr.)
Supervises on-the-job training. Further develops critical respiratory care clinical skills and critical thinking skills. Students rotate through several critical care units (adult, pediatric and neonatal) and practice and become evaluated on advanced level critical care skills. Prerequisites: successful completion of all curriculum courses offered during the first five semesters of the AAS degree in Respiratory Therapy. Laboratory 10 hours per week.

SDV - STUDENT DEVELOPMENT

SDV 100 College Success Skills (1 cr.)
Assists students in transition to college. Provides overviews of college policies, procedures, curricular offerings. Encourages contacts with other students and staff. Assists students toward college success through information regarding effective study habits, career and academic planning, and other college resources available to students. May include English and math placement testing. Strongly recommended for beginning students. Required for graduation. Lecture 1 hour per week.

SDV 106 Preparation for Employment (1 cr.)
Provides experience in resume writing, preparation of applications, letters of application, and successfully preparing for and completing the job interview. Assists students in identifying their marketable skills and aptitudes. Develops strategies for successful employment search. Assists students in understanding effective human relations techniques and communication skills in job search. Lecture 1 hour per week.

SDV 107 Career Education (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. Lecture 2 hours per week.

SDV 109 Student Leadership Development (2 cr.)
Introduces students to leadership theories and skills. Develops students' personal leadership styles. Assists students to promote leadership skills in others. Examines the outlook, skills and behavior essential to successful leadership. Lecture 1 hour per week.

SOC - SOCIOLOGY

SOC 200 Principles of Sociology (3 cr.)
Introduces fundamentals of social life. Presents significant research and theory in areas such as culture, social structure, socialization, deviance, social stratification, and social institutions. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

SOC 210 Survey of Physical and Cultural Anthropology (3 cr.)
Examines physical characteristics and lifestyles of human ancestors and present populations. Explores cultures from around the world to study diverse adaptations made by humans. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and or ENG 107 if recommended by reading placement test. 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, alternative lifestyles. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 and or ENG 107 if recommended by reading placement test. 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. Prerequisite: English placement recommendation for ENG 111 and satisfactory completion of ENG 4 if required by reading placement test. Prerequisite or co-requisite: ENG 5 or ENG 107 if recommended by reading placement test. Lecture 3 hours per week.

SPA - SPANISH

SPA 101 Beginning Spanish I (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. Incorporates exposure to the arts, culture, and

literature of the areas of the world where Spanish is spoken. May include an additional hour of oral drill and practice per week. Lecture 4 hours per week.

SPA 102 Beginning Spanish II (4 cr.)
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. Incorporates exposure to the arts, culture, and literature of the areas of the world where Spanish is spoken. May include an additional hour of oral drill and practice per week. Lecture 4 hours per week.

SPA 111 Conversation in Spanish I (3 cr.)
Emphasizes the spoken language, stressing fluency and correctness of structure, pronunciation, and vocabulary. This course does not fulfill the foreign language requirement for the Liberal Arts AA or Social Sciences AS degree programs. Prerequisite: SPA 102. Part I of II. Lecture 3 hours per week.

SPA 112 Conversation in Spanish II (3 cr.)
Emphasizes the spoken language, stressing fluency and correctness of structure, pronunciation, and vocabulary. This course does not fulfill the foreign language requirement for the Liberal Arts AA or Social Sciences AS degree programs. Prerequisite: SPA 111. Part II of II. Lecture 3 hours per week.

SPA 195 Spanish for Health Professionals (3 cr.)
Introduces Spanish to those in the health sciences. Emphasizes oral communication and practical medical vocabulary. Presents realistic situations and the specialized vocabulary that health-care professionals need to communicate with Hispanic patients in the course of their daily work Provides students with numerous opportunities to apply, in a wide variety of practical contexts, the grammatical structures introduced in the corresponding lessons through personalized questions, grammar exercises, dialogue competition, role-plays, and real activities. May include oral drill and practice. Lecture 3 hours per week.

SPA 201 Intermediate Spanish I (3 cr.)
Continues to develop understanding, speaking, reading, and writing skills. Prerequisite: SPA 102 or equivalent. May include one additional hour oral drill and practice per week. Lecture 3 hours per week.

SPA 202 Intermediate Spanish II (3 cr.)
Continues to develop understanding, speaking, reading, and writing skills. Prerequisite: SPA 201 or equivalent. May include one additional hour oral drill and practice per week. Lecture 3 hours per week.

SPA 233 Introduction to Spanish Civilization and Literature I (3 cr.)
Introduces the student to Spanish culture and literature. Readings and discussions conducted in Spanish. Prerequisite: SPA 202 or equivalent. Lecture 3 hours per week.

WEL - WELDING

WEL 120 Fundamentals of Welding (2 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 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 121 Arc Welding (2 cr.)
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 122 Welding II (Electric Arc) (3 cr.)
Teaches electric arc welding, including types of equipment, selection of electrodes, safety equipment and procedures, and principles and practices of welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 126 Pipe Welding I (3 cr.)
Teaches metal arc welding processes including the welding of pressure piping in the horizontal, vertical, and horizontal-fixed positions in accordance with section IX of the ASME Code. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 130 Inert Gas Welding (3 cr.)
Introduces practical operations in the uses of inert-gas-shield arc welding. Discusses equipment, safety operations, welding practice in the various positions, process variations and applications, and manual and semi-automatic welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 145 Welding Metallurgy (3 cr.)
Studies steel classifications, heat treatment procedures, properties of ferrous and non-ferrous metals. Discusses techniques and practices of testing welded joints and destructive/nondestructive, visual magnetic and fluorescent testing. Lecture 3 hours per week.

WEL 150 Welding Drawing and Interpretation (2 cr.)
Teaches fundamentals required for successful drafting as applied to the welding industry. Includes blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings and interpretation of symbols. Lecture 2 hours per week.

WEL 195 Topics in Welding: Ornamental Welding (3 cr.)
Introduces students to basic equipment, safety, and processes useful in the fabrication of welded ornamental objects. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

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Vacant, Vice President of Academic Affairs

Vacant, Vice President of Finance and Administration

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Carter Tractor Company

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James River Equipment

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Carter Machinery

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SVCC

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SVCC

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Early Childhood Education CSCs

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JSRCC

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Richmond Public Schools
Adjunct Faculty, JSRCC

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Infant and Toddler Connections of Virginia, United Way

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Tuckaway Child Care Centers

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Educational Technology Grants
Virginia Department of Education

Mary Lynn White
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Building Inclusive Child Care Services
Partnership for People with Disabilities – Virginia Commonwealth University

Electronics Technology CSC

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Childress Consulting Engineering, Inc.

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Park 500 Plant
Philip Morris USA

Norm Koslow
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United States Post Office

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Pre-EMS-Paramedic CSC

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Chesterfield Fire and EMS

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CJW Medical Center

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Richmond Ambulance Authority

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EMS Training Coordinator
Henrico Fire Department

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Old Dominion Emergency Medical Services Alliance

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Goochland Fire and Rescue

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VCU Medical Center

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Hanover County Fire/EMS

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Henrico Fire Department

Battalion Chief Wayne Woo
Training Division
Hanover Fire/EMS

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Fire Science Technology Certificate

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Training & Technical Services
Virginia Department of Fire Programs

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Fire/EMS Chief
Hanover County

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Fire and Life Safety America

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Hotel Rooms Division Management CSC

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